

INTRODUCTION TO THE SAFETY REPORT OF SPOLANA s.r.o.

This information is intended for all employees and other persons who, with the knowledge of SPOLANA s.r.o., are present on the premises within the meaning of Act No. 224/2015 Coll., Section 15, Paragraph 2.

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Follows on from update no. 3 of the SPOLANA s.r.o. Safety Report.

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1 Introduction

The Safety Report (Update No. 3) **was prepared in November 2017** by SPOLANA

s.r.o. in cooperation with Ing. Luboš Kotecký, Ph.D. and Prof. Ing. František Babinec, CSc., who prepared the **Risk Analysis and Assessment**, which is an integral part of the company's safety documentation. The Safety Report was updated in accordance with the requirements of **Act No. 224/2015 Coll., on the prevention of serious accidents caused by dangerous chemicals or chemical mixtures** (hereinafter referred to as the Act on the Prevention of Serious Accidents).

The decision of the Regional Authority of the Central Bohemian Region to update the Safety Report in accordance with the Act on the Prevention of Major Accidents became legally effective on July 15, 2019.

2 Summary of the contents of the Safety Report

The Safety Report is divided into **seven parts**, each of which focuses separately on the information required by the decree. **The most important part** of the Safety Report is Part III - **Assessment of Major Accident Risks**, which selects sources of major accident risks in the company, analyzes the probability of major accidents occurring at selected sources of major accident risks, assesses their possible consequences, and evaluates their acceptability in terms of social risk.

Part I. Security reports provide basic information about the facility.

Part II. Safety reports provide descriptive, informational, and data details about the company. This part focuses primarily on the layout of the facility, provides an overview of the hazardous substances located there, their quantities in the facility or equipment, and their properties, and provides detailed information on technologies, activities, and processes associated with the risk of a major accident, internally/externally provided services, and environmental components in the company's location.

Part III. Safety Reports consists of individual annexes and describes the identification of major accident hazards and their selection for detailed quantitative analysis. The selection of hazards was carried out using the Major Accident Hazard Selection method. The method used takes into account the properties and quantities of hazardous substances present in the facility and also considers process conditions. On this basis, 113 safety units – risk sources – were selected for quantitative risk analysis (QRA). **QRA was applied to seven major accident risk sources**, as shown in Table 1 – Selected major accident risk sources for QRA.

A description of the parameters of the selected risk sources is provided in each individual source analysis.

Table 1 – Selected major accident hazard sources for QRA

Designation	Process /Storage	Substance	Quantity (kg)
Spherical storage tank T1411	S	VCM	1,550,000
T1412 ball magazine	S	VCM	1,450,000
T204 magazine	P	HCl	78,000
Rail tank (transfer)	P	Chlorine	45,000
Rail tank (transfer)	P	Ammonia	50,000
Spherical storage tank T1.1A	S	Ammonia	510,000
Spherical tank T1.1B	S	Ammonia	510,000

Part III. The safety report also describes the procedures and results of the identification of initiating events and severe accident scenarios, their causes, and the selection of representative scenarios. For the purposes of risk analysis and assessment, representative initiating events were selected based on the recommendations of the CPR 18E (Purple Book) technical literature.

The risk assessment evaluated the potential impact on:

- municipalities in the affected area,
- road transport in the vicinity of the facility
- rail transport.

The results of the study are presented in tables; the group risk appears acceptable for both immediate and continuous leakage scenarios involving hazardous substances.

- a) **Threats to human health and life** – the storage of chlorine, ammonia, and hydrogen chloride in tanks and the filling of railway tankers are sources of risk of a serious accident with probable loss of human life. The same applies to the storage of VCM. Modeling of major accidents shows that the consequences of an accident will extend beyond the boundaries of the facility. Given the reach of the toxic cloud, municipalities within the range of chlorine and ammonia sources may be at risk. The consequences of an accident can be mitigated by effective intervention by the fire department and rapid warning of the population.
- b) **Environmental threat** – serious environmental consequences are mainly caused by the possible leakage of liquid hazardous substances into watercourses. To reduce the risks, a system for capturing any leaks has been implemented for existing storage tanks.
- c) **Seriousness of the accident in terms of soil and groundwater contamination** – can be mitigated by rapid decontamination of the affected area.
- d) **Threat to property** – given the nature of the hazardous substance (toxicity), the consequences of possible accidents involving toxic substances do not pose a threat to property outside the Spolana s.r.o. premises. The consequences of a VCM leak will mainly be felt inside the premises.

At the end of this section, the influence of the human factor on the possibility of a major accident in connection with relevant sources of risk is analyzed. The analysis covers job positions involved in the operation of selected sources of risk.

Part IV of the Safety Report focuses on the principles, objectives, and policy of major accident prevention. The principles relating to major accident prevention are as follows:

- Enhancing the professional competence of employees and clearly defining their responsibilities at work.
- Improving activities focused on employee safety and reducing environmental impact.
- Monitoring the environmental impact (especially from sources of pollution) resulting from the company's business activities.
- Monitoring risks in the areas of the environment, occupational safety, and accident prevention.
- Compliance with legal requirements in the area of the environment and safety.
- Regular assessment of compliance with current legislation.
- Developing communication, awareness, and transparency within the company.
- Involvement of all employees in the process of continuous improvement in the area of safety and environmental protection.
- Activate external companies and tenants.

The major accident prevention policy is part of the company's integrated management systems policy, which is based on the core values of the UNIPETROL group and, at the same time, on the values of the PKN ORLEN group:

- Responsibility.
- Development.
- People.
- Energy.
- Our company.

The main objective of the company in the area of major accident prevention is to achieve, with the active involvement of all employees, a level of occupational health and safety and major accident prevention that meets at least the requirements of applicable laws.

Permanent objectives for individual areas of the major accident prevention system:

➤ *Human resources and their management*

Objective No. 1: Maintain employee awareness of major accident prevention principles.

➤ *facility operation management*

Objective No. 2: Monitoring, evaluating, and minimizing existing risks; identifying, evaluating, and minimizing new risks.

Objective No. 3: Maintain technological operating documentation up to date.

➤ *Change management in the facility*

Objective No. 4: Ensure that risks are reviewed and assessed in the event of any technological change or change in work procedures affecting operational safety.

➤ *Emergency planning*

Objective No. 5: Regularly review or create new internal emergency planning documentation.

➤ *Monitoring and evaluation of the fulfillment of objectives set by the safety management policy and system*

Objective No. 6: Verification of the fulfillment of the program's objectives and tasks, evaluation of results, and identification of the causes of unfulfilled objectives and tasks of the program.

➤ *Audit of the safety management system and major accident prevention policy*

Objective No. 7: Effectively implement the audit system.

Part V describes the safety management system.

For the entire area of safety, including the prevention of major accidents and fires, the duties and responsibilities of employees, managers, and other persons are specified, and measures are set out in:

- descriptions of individual job functions prepared as part of process No. 3.8.1 Human resources management – job creation,
- work rules, organizational rules, and other organizational and management standards of the company, in service contracts,
- Operational documentation prepared in accordance with SGR-05-03 Technological Operational Documentation (technological regulations, work instructions) and SGR-05-06 Preparation, Approval, and Issuance of Safety Instructions, in documentation prepared as part of process no. 2.5. Storage and removal from storage – storage regime (operating rules) and standard operating procedures, prepared as part of process no. 2.8 Quality Control,
- emergency documentation, i.e. SGR-22-05 Internal Emergency Plan of SPOLANA a.s., SGR-24-04 Plan of measures for accidents resulting from the release of hazardous substances into water and soil, S-3.17.4 Flood plan of SPOLANA s.r.o., in S-3.17.7 Threats to the premises of SPOLANA s.r.o.,
- Organizational and management standards for health and safety, i.e. BI-00-01 Basic safety instructions for employees, fire protection according to S-3.17.8 Fire protection and crisis prevention, including serious accidents, according to R-3.17.1 Crisis management.

The duties and responsibilities of employees of external organizations and visitors in the area of major accident prevention are set out in S-4.1.5 Duties of external entities on the premises of SPOLANA s.r.o., which is available on the company's computer network and website.

Part VI describes preventive safety measures to limit the possibility of a major accident and its consequences. Safety equipment for accident prevention includes safety measures for individual technological equipment depending on the type, quantity, and nature of the hazardous substances contained therein. These include, in particular:

- automatic shutdown systems,
- automatic blocking systems,
- gas detection systems (company-wide and local systems),

- wastewater monitoring,
- electrical fire alarm system,
- automatic fire and explosion protection systems,
- collection and emergency sumps with appropriate pumping equipment,
- remote-controlled emergency quick-closing valves, safety valves, diaphragms, and check valves,
- level, temperature, and pressure measurement, inert atmosphere,
- camera systems,
- access control systems for people and vehicles.

In addition to safety equipment for accident prevention, the company has adopted **other preventive measures** to reduce the likelihood of accidents and the severity of possible consequences. The most important accident prevention measures include:

- a hierarchically structured system of company regulations,
- procedures developed to minimize the consequences of crisis situations (emergency plans, flood plans, site threats, etc.),
- Regular employee training and drills according to plans,
- measures for protection within the framework of the physical protection plan for the premises,
- centralized security desk,
- rapid shutdown and other emergency procedures,
- preventive maintenance and repairs of equipment.

Fire safety equipment also includes, for example, fire water distribution systems, fixed and semi-fixed fire extinguishing equipment, fire doors including their functional equipment, fire dampers, emergency lighting, warning devices, systems and elements ensuring increased fire resistance of building structures, water and steam curtains, fire barriers and seals, etc.

The most important repressive unit for limiting and eliminating the consequences of accidents on the premises is the Fire Rescue Service of SPOLANA s.r.o., which has the appropriate material and technical equipment at a very good level for eliminating all possible types of accidents in the company, as described in Part III of the Safety Report. This is a professional brigade with the necessary equipment and continuous operation 24 hours a day, 7 days a week. The OS HZSP also houses the company's production dispatcher's office. If necessary, OS HZSP and production dispatch staff cooperate in dealing with emergencies, passing on information, etc.

Part VI describes the company's own and contractually secured protective and intervention equipment. The chapter also describes in detail the means of communication, systems, and methods of warning and notification in the event of an emergency. The entire company premises are equipped with the VISO warning system, which includes a network of outdoor and indoor loudspeakers (company radio), wireless receivers, and wireless voice sirens. This system allows access to warning systems connected to surrounding municipalities in the emergency planning zone and others. The VISO warning system has a control center at the OS HZSP. These systems significantly reduce the potential impact of a serious accident on people by providing timely information about the accident. The functionality of these measures is periodically verified.

Part VII contains a final summary of the key facts presented in the document.

3 Conclusion

With regard to the content of the Safety Report, it can be stated that:

- the integrated management system in place (including the major accident prevention system),
- the major accident risk assessment carried out,
- the preventive safety measures established and implemented,
- the forces and resources secured for rescue and liquidation work,

are sufficient and adequate for the identified sources of major accident risks and the assessment of social risk acceptability. These have a significant impact on reducing the likelihood of a major accident occurring or minimizing its consequences.

Every employee of the company is part of the Major Accident Prevention System. They contribute to the implementation of this system by meeting the qualification requirements, having the relevant professional and health qualifications, following the established binding procedures in their work, and complying with the applicable internal regulations. In the event of an indisposition or non-compliance, they shall immediately notify their superior or other responsible persons. **By performing their work safely, employees also require safe work from their co-workers and external employees, protecting not only themselves but also the entire company, including its good name.**

The company expects the same from tenants operating on the premises of SPOLANA s.r.o. and from suppliers.

All employees of SPOLANA s.r.o. are demonstrably familiar with this information. The information has also been demonstrably passed on to external companies on the premises (tenants, suppliers) for the information of their employees.