



группа компаний  
**ГОРОДСКОЙ ЦЕНТР ЭКСПЕРТИЗ**



# Differences in the Eastern and Western Approaches to Risk Management

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Vuoksa



Finland

Neman



Lithuania

Western Dvina



Latvia, Belarus



Dnepr



Belarus, Ukraine

Samur



Azerbaijan

Volga,  
Ural,  
Irtysch



Kazakhstan

Selenga Amur



Mongolia China

Tumannaya



China,  
North Korea

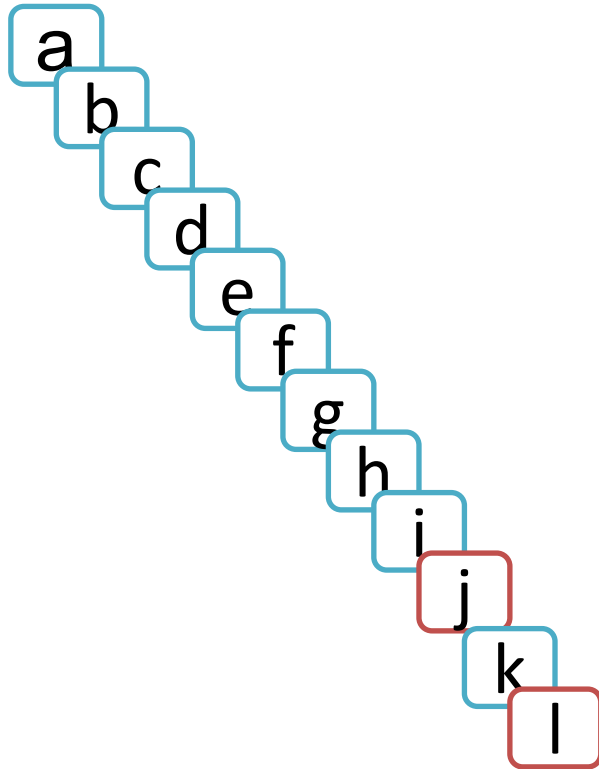
Total boundary line length of Russian federation along the water:  
7141 km – along the rivers, 475 km – along the lakes and  
38807 km – along the seas.



In 1992 Russia joined the “Convention on the Protection and Use of Transboundary Watercourses and International Lakes”.

## Measures to prevent water pollution during day to day activities

Provisions of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes / Clause 1, Article 3 /



Legislative framework that contradicts the provisions of the Convention in the Russian Federation

- Russian Federation Water Strategy till 2020
- Water Code of Russian Federation
- Federal Law "On Environmental Protection"
- Other Regulations
- Standard Technical Documentation

- Setting of quantitative indicators (pollution regulation)
- Monitoring
- Adoption of organizational decisions

## Measures to prevent water pollution during accidents

Convention on the Protection and Use of Transboundary Watercourses and International Lakes:

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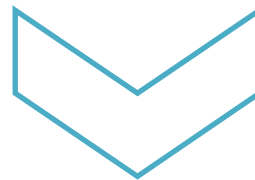
Minimizing the risk of accidental pollution

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Development of action plans in emergency situations

Convention on the Transboundary Effects of Industrial Accidents

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- Development of measures to reduce the occurrence probability of accidents
- Localization and settlement of accident impacts

## Reduction of occurrence probability of accidents

Implementation of Industrial Safety Requirements

Supervision and coordination of actions by the state (State Supervisory Bodies)

Rostekhnadzor

Creation of common technical and organizational requirements

- Legislative acts
- Regulations
- Technical documentation

## Localization and settlement of accident impacts

Implementation of requirements of protection of population and territory from emergencies

Creation of common technical and organizational requirements

- Legislative acts
- Regulations
- Technical documentation

Supervision and coordination of actions by the state

Russian  
Emergencies  
Ministry

## Lifecycle stages of an industrial facility

Design / construction / maintenance / renovation ... / conservation / liquidation

## Reduction of occurrence probability of accidents



### Implementation of Industrial Safety Requirements

**Federal Law № 116 “On industrial safety of hazardous production facilities”** lays down :

- a set of organizational and technical requirements to be met by the owner of hazardous production facilities, strict compliance of which at all stages of its "life cycle" (design, construction, operation, reconstruction, conservation, liquidation) should ensure a reduction in the probability of an accident
- mechanisms and some methods of enforcement of industrial safety at the enterprises;
- measures of liability on the owner of the hazardous production facilities for non-compliance with industrial safety

## Localization and settlement of accident impacts



### Implementation of requirements of protection of population and territory from emergencies

**Federal Law № 68 “On protection of population and territories from natural and man-made emergency situations”** defines a set of requirements:

- in preventing the emergence and development of emergency situations that may happen, including, as a result of an accident
- in reducing the size of damage and losses due to emergency situations
- in liquidating the emergency situations

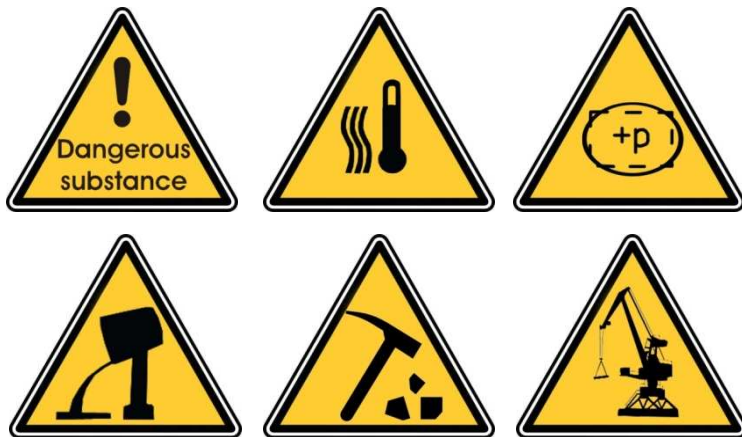
## Reduction of occurrence probability of accidents



### Implementation of Industrial Safety Requirements

**Industrial Safety** – state of protection of the vital interests of the individual and the society from accidents at hazardous industrial facilities and the consequences of these accidents

#### Hazardous facilities:



## Localization and settlement of accident impacts



### Implementation of requirements of protection of population and territory from emergencies

**Emergency Situation** – the situation established at a certain area due to accident, which may or has caused human casualties, damage to human health and the environment, economic loss, breach of life conditions.

**Elimination of emergency situation** – process of saving lives and preserving human health, reducing the size of the environmental damage and material loss, localization of emergency areas and termination of the hazards.

Implementation of  
Industrial Safety Requirements

Implementation of requirements of  
protection of population  
and territory from emergencies



**Predicting the development of  
emergency situations**

**Industrial Safety Declaration**



**Creation of emergency  
response plans**

**Emergency Response Plan**

**The plan for the prevention and liquidation of  
spillage of oil and oil products**



## Emergency Response Plan

### Calculation and estimation

- identification of hazards
- determining the scenarios of possible accidents and risk factors;
- assessment of the impact of adverse events
- calculation of the necessary forces and inventory
- management of organization, communications and alarm systems, etc.



### Operations to be done

- Priority actions / localization /  
*for spillage of oil and oil products:*
  - On land - 6 hours
  - On the water – 4 hours
- Action plan to mitigate the consequences of emergency



Enhancement of skills and confirmation of readiness



## Objective of Declaration –

- comprehensive assessment of the risk of an accident and related threats;
- analysis of the adequacy of measures taken to prevent accidents;
- ensuring of readiness of the organization to operate hazardous production facilities in accordance with the requirements of industrial safety, as well as for the localization and liquidation of consequences of accidents at hazardous production facilities;
- activities to reduce the scale of the accident and the extent of damage caused in an accident at hazardous production facilities.

## Declaration includes the following activities:

- identification of hazards;
- determining the scenarios of possible accidents;
- assessment of the impact of adverse events (including assessment of the magnitude of negative impacts on the environment);
- determining the occurrence frequency of initiative and all adverse events;
- calculating the potential (territorial) risk fields
- quantification of risk indicators (identifying the relationship of the magnitude of impacts to the frequency of their occurrences)
- development of recommendations for risk reduction.

Risk Management Standards  
FERMA / Federation of European Associations of Risk Managers /



## FERMA Risk Management Standards

Strategic aims of Company

Risk Analysis

- Identification
- Description
- Measurement

## Declaration Development

- scope, structure, location, etc.
- analysis of technological processes, properties of hazardous substances, calculation of their amount and treatment schemes
- manufactured products
- staff and its location, etc.

- identification of hazards
- definition of possible accident scenarios
- impact assessment
- determination of the frequency of unwanted events, etc.

## FERMA Risk Management Standards

qualitative / quantitative  
risk assessment

requires

evaluation criteria developed  
by the organization

**! Compliance with legislation  
is required**

## Declaration Development

Obligatory  
quantitative risk assessment

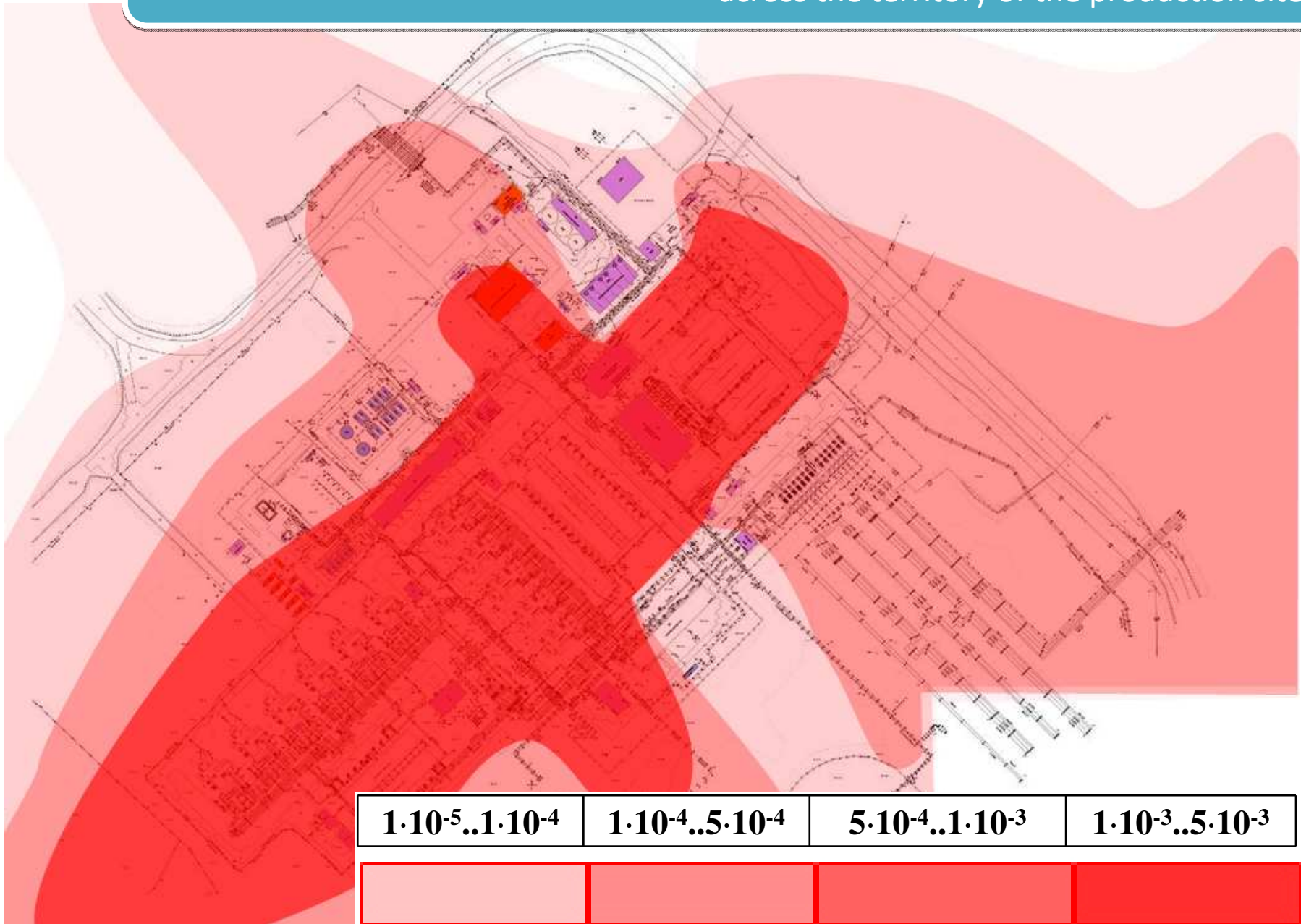
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Calculation of quantitative values for:

- potential (spatial) risk
- individual risk
- collective risk
- social risk (F / N - curve)



Example of calculation of the distribution of potential (territorial) risk across the territory of the production site



## FERMA Risk Management Standards

- Risk report
- Threats and opportunities

Risk management activities

Repeated risk report

Monitoring



## Declaration Development

- Conclusions and recommendations
- Preparation of declaration
- Presentation to authorities

Risk reduction activities

Declaration is updated on:

- changes in the enterprise, causing changes in risk and damage
- changes in requirements for industrial Safety