The JRC’s Major Accident Hazards Bureau (MAHB) focuses on **industrial accident prevention**.

We work with **DG-ENV and EU Member States** to implement the **EU Seveso Directive** for the control of major chemical accident hazards.

We work with **DG-ECHO, international bodies, and third countries** to support improvement in **chemical accident prevention and preparedness** as a contribution to chemical safety and CBRN-E security globally.

We specialise in:

- **accident analysis for lessons learned**, 
- **risk analysis**, and
- **exchange of good practice for risk management and risk governance**
The EU continues to have serious chemical accidents

The number of Seveso (high hazard chemical) establishments in the EU has increased by nearly 20% since the last decade

- **From ~9,500 in 2011 to over 12,000 Seveso sites in EU/EEA countries in 2016**

Serious chemical accidents also occur in other hazardous industries, such as transport (e.g., Viareggio, Italy, 2009)
EU policies we support

**The Seveso Directive**

CHAP. II. PREVENTION. (a) take action to improve the knowledge base on disaster risks and facilitate the sharing of knowledge, best practices and information, including among Member States that share common risks; (b) support and promote Member States' risk assessment and mapping activity through the sharing of good practices, and facilitate access to specific knowledge and expertise on issues of common interest; (e) promote and support the development and implementation of Member States' risk management activity through the sharing of good practices, and facilitate access to specific knowledge and expertise on issues of common interest ...

**EU Civil Protection Mechanism**

2.2.1 EU CBRN risk mitigation Centres of Excellence initiative. There is a need to prevent, to detect and to respond adequately uncontrolled chemical releases. Preventive measures include good land-use planning and enforcement so that chemical installations are not built close to places of high population density, the enforcement of high safety standards in chemical industries ...

**EU Instrument Contributing to Stability and Peace**

**Other key EU policy links**

Critical Infrastructure Protection (Energy)

EU Convention on the Transboundary Effects of Industrial Accidents

The EU Disaster Risk Management Knowledge Centre
Chemical safety and security go hand-in-hand

- Safety
- Security
JRC’s Major Accident Hazards Bureau – 30+ years scientific and technical support to chemical accident risk reduction

1982 Seveso Directive

1984 EU systems for accident reporting (MARS) / lessons learned

1984-1996 Studies to explore options to reinforce EU chemical accident risk governance

1996 Seveso II Directive

1994 - ~1998 ~8 Technical Working Groups on Seveso guidance

1994 - ~1998 Dedicated capacity building projects in 12 accession countries

2001 - 2005 New MS & CC involved in all technical workshops & several bilateral initiatives

2005 - ~1998 Technical Working Groups on Seveso guidance

2005 - 2005 Dedicated capacity building projects in 12 accession countries

2007 - UNEP partnership - capacity building in 3rd countries (Flexible Framework)

2009 - present Seveso inspections technical exchange workshops and products

2012 Seveso III Directive

2014 - Seveso Capacity Building in EU Neighbour Countries

A Historical Perspective
What we do

- Consequence modelling and risk assessment
- Member State accident (eMARS) and establishment (eSPIRS) reporting
- Capacity building
- Accident lessons learned and trend analysis
- Good practice advice for enforcement and risk management
What questions does MAHB help answer?

- **Local or national government:** I have a big gas storage plant near a large residential and commercial area. Is it safe enough? (JRC ADAM consequence assessment tool, Accident Scenarios Handbook)

- **Industry operator:** I have a fireworks production plant to keep safe. What strategies should I employ? (Good practice report for fireworks and explosive sites, Lessons learned bulletin)

- **Policymaker:** Where are accidents happening? What emerging risks should I worry about? (JRC eMARS accident reports and analyses, JRC Chemical Accident Risks Seminar)

- **Seveso inspector:** I am inspecting the plant’s safety management system. How do I know what to look for? (JRC Common inspection criteria)

- **Enlargement/Neighbourhood country:** How do I know where my risks are? Who should be involved in chemical accident risk management? Where do I start? (JRC training workshop)
Some examples
Several “major” accidents did not involve deaths but had heavy environmental costs or social disruptions

- Brisbane airport, Australia foam spill to environment
- Auckland airport, New Zealand pipeline leak
- Greeley (CO), USA, pipeline explosion
- St. Petersburg, Russia and Salamis Greece oil spills
- Paterna, Spain chemical plant fire – 3000 evacuated
- Arida, Japan chemical plant fire – 3000 evacuated
- Kalanivkya, Ukraine ammunition depot explosion – 30,000 evacuated

Source: MAHB analysis for OECD, 2017
Key contributions 2017

**Consequence and risk analysis**

- Training workshops - ADAM online risk assessment tool

**Technical tools, training for risk management**

- 4 inspection technical briefs and a Seveso inspectors’ workshop on LPG/LNG sites

**Analysis & exchange with the global community**

- OECD-JRC collaborations – lessons learnt from emergency response, accidents in the media

**Capacity building/ emerging risks**

- Training, Integration of EU Enlargement & ENPI into EU Seveso network

**Chemical accident scenarios handbook**

- Chemical Accident Risks Seminar
Thank you for your kind attention!

Please visit the MAHB Minerva website at https://minerva.jrc.ec.europa.eu

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