Chemical Safety Management and OPCW

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OPCW HQ, The Hague, Netherlands
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Topics

• Chemical safety management
• Observations on status of this area
• Areas where OPCW can contribute to the field
• Specific initiatives/projects/activities that OPCW could develop in view of the emerging opportunities
Chemical Safety Management

• The global handling, storing, processing, and transportation of hazardous chemicals (especially at industrial facilities) must be managed in a holistic public/private risk management framework using a systems oriented management approach.

• Focus is on the management of accidental risk from design failures and operating actions leading to unnecessary hazards.

• There is a strong business case for implementing major hazards safety management systems – the value is in preventing the loss of lives, preserving the integrity of operations and protecting the environment.
Chemical Security Management Objectives

• A system to ensure the security of the chemicals to protect workers, the public, and the environment from harm
• A management system for preventing or minimizing the consequences of intentional malicious releases of toxic, reactive, flammable, or explosive chemicals
• Security of chemicals to reduce the risks of exposure from misuse of chemicals (theft, diversion, abuse)
Chemical Safety and Security Management

**Convergence**

- Chemical Safety
- Chemical Security

**Commonality and Synergies**

- Common hazards
- Similar failure mechanisms (intent is different, accidental v. deliberate)
- Similar consequences
- Some similar strategies for prevention, detection, mitigation, response
Problem Statement

• Chemical safety requires continuous effort to achieve a high level of safety performance
• Current options (from regulations, to regional voluntary organizations and efforts, to various industry programs) alone do not reach as broadly as is necessary to produce the necessary support and change
• There remains a lack of global governmental/private leadership on chemical safety
• There needs to be an additional thrust, oversight, and support on this topic
Examples of Best Practices
NGO Activity & Guidelines

• American Institute of Chemical Engineers (AIChE) established Center for Chemical Process Safety (CCPS) 1985 ([www.aiche.org/ccps](http://www.aiche.org/ccps))
• Chemical Manufacturers Association’s (CMA) established Responsible Care ®(1988) Program [now known as American Chemistry Council (ACC)] – voluntary program for Process safety
• Other organizations developed conventions and guidance (ILO, C174 Prevention of Major Industrial Accidents Convention, 1993, OECD, etc.) ([www.oecd.org](http://www.oecd.org))
Article XI Implementation

OPCW Role in Chemical Safety

• OPCW has the capacity to bring together regulators, scientists and stakeholders.

• OPCW has an excellent track record in dealing effectively and globally with chemical issues and can put the same structure, organization, and resources to bear on this related problem.

• OPCW is well-positioned to tackle longer-term challenges like organizing through the existing structure a sustained effort to educate, exchange information, and provide guidance on new methods and approaches, and developing practical tools for use in decision-making on chemical safety.
Major Hazards Legislation and Guidance History

• A history of severe process industry accidents in the period from 1974 to 1989.
• This culminated in significant international governmental process safety and risk management regulations and private sector efforts to reduce catastrophic risks.
• The purpose of the regulations and directives issued by many Governments and Organizations:
  • to reduce the likelihood and intensity of major chemical safety impacts on workers, the public, and the environment
  • by mandating or recommending a management systems approach with a risk and performance basis.
Article XI Implementation Recommendations

• Promotion of Chemical Safety Management requires:
  1. Greater education, directed to those decision-makers responsible for chemical manufacturing and use as well as the persons actually handling and using the chemicals
  2. A compelling business case for implementing process safety management systems – preventing the loss of lives, preserving the integrity of operations, competitive advantage, and protecting the environment.
  3. Definition of effective and internationally accepted safety management best practices
  4. Access to simple, reliable methods and tools for the analysis and management of hazards
Share Best Practices

OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response

Guidance for Industry (including Management and Labour), Public Authorities, Communities and other Stakeholders
Monitor Performance

Figure 1

Fig.1 Number of incidents reported in MARS

Sources: “Status of the Major Accident Reporting System”
(MARS, Michalis, 10th and 11th meetings of the Committee of the Seveso Competent Authorities)
Share Lessons Learned

INVESTIGATION REPORT
Refinery Explosion and Fire
(15 Killed, 180 Injured)

Key Issues:
- Safety Culture
- Regulatory Oversight
- Process Safety Metrics
- Human Factors

BP
Texas City, TX
March 23, 2005

REPORT NO: 205/004-TX
March 2017
Article XI Implementation
Recommendations

• **Recommendation** 1 – to continue seminars on a regular basis for awareness and education and exchange of information and best practices
  – Seminars oriented towards Member States to determine sensitize to the needs and to develop specific plans within their regions or countries and to discuss how to oversee and promote chemical safety management
  – Seminars oriented towards industry within the Member States or regions to promote real impacts on actual chemical safety practices at the user level
  – A training plan will then need to be developed to define the scope, types of training, approach, curriculum, training schedule, logistical information, responsibilities, and estimated resources necessary to meet the training objectives.
  – Involvement of industry, universities
OPCW Article XI Seminars to Date

– Chemical Weapons Convention and Chemical Process Safety Management, Japan, 11th and 12th November, 2009, involving 19 delegates from the Asia Group

– Promoting Chemical- Safety Management, Germany 16th to 20th November, 2009, involving 10 delegates from the Africa Group. (Executive Council, EC-59/DG.13)


– Workshop of Chemical Weapons Convention & Chemical Safety Management, Mumbai, India, 18-19 April 2011

– Workshop of Chemical Weapons Convention & Chemical Safety Management, Vadodara, India, 18-19 April 2011

– Workshop of Chemical Weapons Convention & Chemical Safety Management for African Member States, Johannesburg, SA, 11 to 13 May 2011
Article XI Implementation Recommendations

• **Recommendation 2** – to develop guidance on how to encourage all stakeholders to adopt best practices in chemical safety management
  – Public/private level
  – Particularly within the user community – the ‘business case for chemical safety management’ must be explained
  – Metrics and measurement
  – Leadership training and guidance
Article XI Implementation
Recommendations

• **Recommendation** 3 – to develop guidance on sources of and technical applications of best practices in chemical safety management
  – References available
  – “Model” program(s)
  – *Safety in the Use of Chemicals at Work (ILO, Geneva, 1993).*
Article XI Implementation
Recommendations

• **Recommendation 4** – to provide access to tools or sources of technical applications for simple, reliable methods and tools for the analysis and management of hazards
  – World Bank Hazards Analysis software (1985)
Conclusions

• Chemical Safety Management has become an internationally accepted safety management practice and yet there is much work to be done
• OPCW has an obligation and an opportunity to encourage the safe and secure use of chemicals
• OPCW is in a unique position in the world to promote chemical safety
• A specific plan for how to achieve Article XI with a focus on needs of the Member States seems appropriate
Questions?

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ECONOMIC AND TECHNOLOGICAL DEVELOPMENT

1. The provisions of this Convention shall be implemented in a manner which avoids hampering the economic or technological development of States Parties, and international cooperation in the field of chemical activities for purposes not prohibited under this Convention including the international exchange of scientific and technical information and chemicals and equipment for the production, processing or use of chemicals for purposes not prohibited under this Convention.
Article XI CWC

ECONOMIC AND TECHNOLOGICAL DEVELOPMENT

2. Subject to the provisions of this Convention and without prejudice to the principles and applicable rules of international law, the States Parties shall:

(a) Have the right, individually or collectively, to conduct research with, to develop, produce, acquire, retain, transfer, and use chemicals;

(b) Undertake to facilitate, and have the right to participate in, the fullest possible exchange of chemicals, equipment and scientific and technical information relating to the development and application of chemistry for purposes not prohibited under this Convention; (c) Not maintain among themselves any restrictions, including those in any international agreements,
ECONOMIC AND TECHNOLOGICAL DEVELOPMENT

(c) Not maintain among themselves any restrictions, including those in any international agreements, incompatible with the obligations undertaken under this Convention, which would restrict or impede trade and the development and promotion of scientific and technological knowledge in the field of chemistry for industrial, agricultural, research, medical, pharmaceutical or other peaceful purposes;

(d) Not use this Convention as grounds for applying any measures other than those provided for, or permitted, under this Convention nor use any other international agreement for pursuing an objective inconsistent with this Convention;

(e) Undertake to review their existing national regulations in the field of trade in chemicals in order to render them consistent with the object and purpose of this Convention.