

State-of-the-art Recognition and Need Analysis

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1. RISK ANALYSIS

- Risk analysis were not found to have enough knowledge by the respondents and open questions not answered adequately.
- It must be very important the level of knowledge related to chemical risk analysis because of potential risks.
- Committee on Improving Risk Analysis Approaches Used by the U.S. EPA, National Research Council, Science and Decisions: Advancing Risk Assessment, (2009), ISBN: 978-0-309-38814-6.

2. RISK ASSESSMENT

- Respondents who had been very little knowledge on storage and handling facilities of chemicals; furthermore, it had little knowledge on handling of emergency plans.
- It has been important to know especially how to assess risks about hazardous chemicals also it has a profound likely effect on success in terms of intervention to chemical accidents.
- Committee on Improving Risk Analysis Approaches Used by the U.S. EPA, National Research Council, Science and Decisions: Advancing Risk Assessment, (2009), ISBN: 978-0-309-38814-6.

3. RISK MANAGEMENT

- By respondents were not given to correct answer to the questions regarding to Major Accident Prevention Policy (MAPP), and safety report.
- Risk policies, and risk culture regarding to major chemical accidents are of great concern for the risk management.
- Committee on Improving Risk Analysis Approaches Used by the U.S. EPA, National Research Council, Science and Decisions: Advancing Risk Assessment, (2009), ISBN: 978-0-309-38814-6.

4. PREVENTION

- Most of the participants have given to correct answer to the questions, but in questions regarding chemical leak or spill and chemical emergency were determined inadequately of respondents.
- Areas where chemical substances are kept should be clearly marked, properly supervised, and regularly inspected for leakage or damage.
- OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response, Guidance for Industry (including Management and Labour), Public Authorities, Communities, and other Stakeholders, Second Edition, (2003), OECD Environment, Health and Safety Publications Series on Chemical Accidents No. 10.

5. RESPONSE

- The response is not very well known by the respondents.
- Chemical accidents present special circumstances that has required to coordination of the various departments such as health departments, search and rescue teams, public safety departments.
- Tom LaTourrette, Lynn E. Davis, David R. Howell, Preethi R. Sama, David J. Dausey, Public Health Preparedness and Response to Chemical and Radiological Incidents Functions, Practices, and Areas for Future Work, (2009), Technical Report, RAND Health publications.

6. SAFETY RULES

- Safety rules related to general rules in case of an emergency were known very well by the respondents.
- Safety rules should be known by all from the corresponding field in the workplace.
- General Chemical Safety Guidelines at <http://blink.ucsd.edu/safety/research-lab/chemical/general/index.html>

7. REGULATIONS

- Some of the questions regarding to REACH, SEVESO, SDS, ADR, and CLP regulations were not answered correctly.
- These regulations play important role in classification, handling, transportation, storage, and emergency act facilities related to chemical substances.
- Act and regulations <http://www.hsa.ie/eng/Legislation/Acts/>

8. CHEMICAL ACCIDENTS

- The respondents who were calculated in this topic with 13% of the low success rate.
- Learning lessons from chemical accidents is important for our future that we hope not to repeat the past in terms of chemical accidents.
- Chemical accident prevention, preparedness and response at <http://www.oecd.org/chemicalsafety/chemical-accidents/>

9. HEALTH

- The participants have adequately information on the matter.
- There are adverse effects on human health of toxicity of chemicals in case of an explosion or fire.
- Due to possible risks of transporting, dealing or storing of chemical substances is important mainly topics for human health.
- Committee on Toxicity Testing and Assessment of Environmental Agents, National Research Council, Toxicity Testing in the 21st Century: A Vision and a Strategy, (2007), DOI: 10.17226/11970.

10. ENVIRONMENTAL

- The participants are not sufficiently knowledge about this matter.
- There are side effects in terms of environmental of chemical polluting; furthermore, it can be seen extensively as nonborder with effects of this polluting.

11. CLASSIFICATION

- According to result of classification must be raised level of participants knowledge on MSDS (Material Safety Data Sheet).
- Classification, Labeling and Packing of Substances and Mixtures (CLP) is cited in SEVESO III directives.

12. PRECAUTION

- Respondents knowledge on taking precaution towards gas leakage, solid chemicals emission routes to the environment and what precautions should be taken into action in case of a chemical accident.
- W. Wohlleben and F. Vahrenholt, Precautions against accidents in chemical facilities, Journal of Hazardous Materials 5(1-2), 1981.

13. IMPLEMENTATION

- There is no enough knowledge of the respondents on the transportation of hazardous chemicals on roads (ADR), on rail (RIS), bysea (IMDG) or by air (IATA).
- Implementation of SEVESO Directives and other regulations should be expanded in facilities containing and used with chemical substances.