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# WEBINAR TWG2 AND MAHB-JRC

## THE ROLE OF AUTHORITIES IN PROMOTING LESSONS LEARNED

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### HOW TO USE AND ENCOURAGE LESSONS LEARNING IN SITES/INDUSTRIES: EXPERIENCE AS A SEVESO INSPECTOR

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# SEVESO DIRECTIVE: REQUIREMENTS TO ENCOURAGE LESSONS LEARNING

- The Seveso Directive **explicitly promotes the use of lessons learned**. Through its various requirements (SR, SMS, accident investigation and reporting...) the Directive gives opportunities for the authorities to intervene with operators regarding investigation, reporting, consultation and application of lessons learned
- Lessons to be learned are **not only from accidents, but from all the activities related to the prevention and protection of accidents** (maintenance activities, internal/external audits, internal meeting, external inspections) and **monitored through the safety performance indicators**, as well as the regulatory evolution and the improvement of technical knowledge and BAT
- The **inspections play a crucial role in supporting companies to learn**, especially for small-size companies
- 3 specific Seveso requirements appeared **particularly effective to encourage lessons learning during inspections**:
  1. SMS monitoring performance
  2. Risk analysis/SR and accident analysis
  3. Operational control/maintenance

# D.LGS. 105/15 (SEVESO DECREE) REQUIREMENTS: FOCAL POINTS TO ENCOURAGE LESSONS LEARNING

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## 1. SMS monitoring performance

- adoption/implementation of procedures for the ongoing assessment of compliance with the objectives set by the operator's MAPP and SMS, and the mechanisms for investigation and taking corrective action in case of non-compliance. **The procedures shall cover the operator's system for reporting major accidents or 'near misses', particularly those involving failure of protective measures, and their investigation and follow-up on the basis of lessons learnt.** The procedures could also include performance indicators such as safety performance indicators (SPIs) ...
- monitoring performance must be carried out, on an ongoing basis, through checks on the current operation of the plants, and **based at least on:**
  - **assessment of accidents, near misses and malfunctions occurring in the plant or similar plants and any consequent corrective actions...**
  - **evaluation of operational experience, own or in similar situations...**

# SMS: CYCLIC DYNAMIC SYSTEM

Only if the system is **dynamic** it can be effective and efficient. The manager must be guided in guaranteeing this dynamism of the SMS



Cyclic dynamic SMS helps the **learning cycle of lessons**, coming from accidents, audits, training meeting, maintenance, safety indicators



# SMS INSPECTION: RECOMMENDATIONS AND PRESCRIPTIONS TO ENCOURAGE LESSONS LEARNING

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## Recurring prescriptions (on SMS monitoring performance)

- To integrate into the **SMS implementation/improvement plan** the **corrective actions resulting from accidents analysis**, maintenance activities, internal and external audits, internal meeting, external inspections and the SMS review
- To **review the SMS implementation/improvement plan in order to logically link it to the MAPP** and to contain the emerging corrective actions
- For the general **safety indicators** (with unfixed threshold), to highlight the trend of the last 5-6 years to understand the SMS improvement; for specific indicators (with fixed threshold), to reconsider those which values appear unchanged for years, to reformulate them or upgrade the threshold
- To reformulate performance indicators aimed at **monitoring the specific safety issues from major accidents**, and integrate some 'precursor' and 'result' indicators (referring to the check-list) more suitable for the type of activity carried out . The aim must be **to show SMS improvement**

# D.LGS. 105/15, AS SEVESO DIRECTIVE REQUIREMENTS: FOCAL POINTS TO ENCOURAGE LESSONS LEARNING

## 2. Risk analysis/SR and accidents analysis

- risk analysis/SR review – the operator shall review and where necessary **update the SR following a major accident at its establishment**, and at any other time at the initiative of the operator or at the request of the CA, where justified by **new facts or by new technological knowledge about safety matters, including knowledge arising from analysis of accidents or...‘near misses’, and by developments in knowledge concerning the assessment of hazards...**
- accidents analysis: **causes should have been identified and the safety measures should have been implemented according to the established priorities.** Information exchange on accidents occurred with similar activities both in Italy and abroad. **Information and actions resulting from the analysis (accidents, near misses, anomalies, etc.) must be communicated at different company levels**



# SMS INSPECTION: RECOMMENDATIONS AND PRESCRIPTIONS TO ENCOURAGE LESSONS LEARNING

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## Recurring prescriptions (on Risk analysis/SR and accidents analysis)

- to **review the risk analysis/SR considering:**
  - **the complete updating of the current plant situation**, in particular for the critical equipments/systems/instrumentations involved
  - accident scenarios related to all the dangerous substances managed in the plant
  - risk analysis method which is tested, updated and certified, adequate for the type of plant
- to **expand the information exchange of accidents** and near misses with similar plants on national and international territory, also through:
  - Associations/committees/groups which the operator is member of
  - **online databases** that can be consulted for lessons learned from accidents in all personnel levels and in similar industries
  - different sources of information on lessons learned from accidents to identify potential improvements and troubleshoot risks associated with specific substances, processes and equipment (main sources: investigation reports and analyses directly available online, databases of reports and information on chemical accidents)

# D.LGS. 105/15, AS SEVESO DIRECTIVE REQUIREMENTS: FOCAL POINTS TO ENCOURAGE LESSONS LEARNING

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## 3. Operational control/maintenance

- adoption and implementation of procedures and instructions for safe operation, including maintenance of plant, processes and equipment, and for alarm management and temporary stoppages; taking into account available information on **best practices for monitoring and control**, with a view to reducing the risk of system failure; management and control of the risks associated with ageing equipment installed in the establishment and corrosion; inventory of the establishment's equipment, strategy and methodology for monitoring and control of the condition of the equipment; **appropriate follow-up actions** and any necessary countermeasures...



# SMS INSPECTION: RECOMMENDATIONS AND PRESCRIPTIONS TO ENCOURAGE LESSONS LEARNING

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## Recurring prescriptions (on operational control/maintenance)

- to review the **maintenance and control activities** carried out on critical systems to:
  - consider more specific criteria for the maintenance activity (e.g. considering **predictive as well as preventive maintenance**, not only ordinary one)
  - **improve staff knowledge of technical standards** (and revisions) used for the maintenance and control of critical equipment
  - take into account, before writing the maintenance plan (for the definition of type/ frequency of the controls):
    - the **technical documentation** (technical manual, project sheet, indications from the supplier..) of critical equipment to control
    - available information on **best practices for monitoring and control**

## ENCOURAGE LESSONS LEARNING: COMPANY AND INSPECTOR COMMITMENTS

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- COMPANY: a multidimensional strategy needs: a company has to create an atmosphere where **active lessons learning is clearly encouraged**; it has to continually work on **reducing barriers to reporting and using lessons learned**; finally, it has to **take every opportunity to reinforce the value of lessons learned** and convince employees and contractors that they are relevant to their work
- INSPECTOR: key challenges: **the interaction with operators at different points of the learning cycle**, in order to obtain lessons learned transferred into implementation among operators; **sharing of lessons learned**, having sufficient time and resources, the identification and application of relevant lessons learned at site level, and obtaining sufficient good quality information

# ENCOURAGE LESSONS LEARNING: THE IMPORTANCE OF COMPANY-INSPECTOR INTERACTION

**Good dialogue and interactive interviews** between inspector and company seem to be very important to encourage lessons learning:

- asking operators how they broadcast and apply their own lessons learned
- checking dissemination of information within the company, for example, by interviewing maintenance personnel
- verifying with multinationals that they are drawing experience from incidents from other branches or from sites in the company
- checking that relevant incidents occurred at the operator or elsewhere are covered by the scenarios and risks presented in the safety report
- identifying relevant lessons learned and check if they are reflected in the safety management systems
- Verifying if the operator has consulted its industry sources for lessons learned relevant to site operations and substances used