

## **Annex of potential inspection questions, verification items, and other advice when inspecting Safety Performance Monitoring**

### **A. Questions that inspectors can pose addressing Safety Performance Monitoring:**

#### **A1 General questions**

1. Does the organization have a policy document relating to Safety Performance Monitoring?
2. Does the policy refer to the key risk control systems for prevention of major accidents?
3. How does the company monitor its safety performance? Have the figures changed? If so, why?
4. Are procedures in place to monitor, record and disseminate the Safety Performance data?
5. Are there also procedures in place to make corrective actions in case of non-compliance?
6. Is the composition of the team working with Safety Performance Monitoring documented and adequate to the task?
7. Are persons with operational expertise involved?
8. Does the company use checklists and if so, are they appropriate? How often are they reviewed?
9. Has the company ensured that the quantity of data is not overwhelming?
10. How is the SPM, the internal audit and the review process of the plant SMS integrated in the existing system of evaluation of the company performance, e.g. the annual review?

#### **A2 Monitoring the progress of planned activities**

11. How are feed-back on how different plans (for e.g. maintenance and training, see 11 1nd 12 below and also above for more examples) are being met, reported to the senior management?
12. Is training up-to date and appropriate?
13. Are maintenance tasks on schedule or are they lagging behind?
14. How is the data presented, also compared to other information the top management receives
15. How do managers respond to the data? How is it fed into the decision making process?
16. How is this then communicated back down the management chain?
17. Does the policy aim to link process safety performance with the remuneration/reward of senior managers?

### **A3 Reactive Monitoring – learning from accidents**

18. Are aspects of a learning organisation part of the performance monitoring, audit and review processes?
19. Are incidents and near-miss reporting procedures and processes in place to make use of the opportunity to learn?
20. What is the quality and systematic approach to following-up on accidents and near misses and analyse the causes, and are these procedures documented?
21. Are there regular meetings to follow-up on incidents?
22. Does a positive failure culture exist (is failure an opportunity for improvement or punishment)?
23. Do processes for collecting and assessing improvement proposals by staff exist?

*Shall these questions be removed?:*

24. *Is the lack of accidents and near-misses over a period of time appropriate?*
25. *How does the company follow up on recommendations from the competent authority, from internal audits and others?*

B. Topics that inspectors could lift for discussion to address the quality of Safety Performance Indicators, if the company formally maintains such a feed-back system [MJV Fulda].

1. Ask the operator to give some examples of their Safety Performance Indicators
2. Inspectors should question why the companies have chosen particular topics for indicators and how the management has determined that they are important. The company should use indicators based on its own operations and experience.
3. Inspection of the SMS should be based on more than just the output from the indicators. See section A above.
4. Is the company reporting on competency and training in their indicators. (There are several examples of measurements of training, in guidance on Safety Performance Indicators, published by industry and governments).
5. Are the right criteria being used? E.g. when collecting data on near misses a high collection rate should e.g. make the operator proud, at least in the early stage of the program.
6. The quality of the analysis of feedback is important. To evaluate analytical quality, inspectors can inquire about the analytical process, e.g., who performs the analysis, the methods used, and how feedback is selected for analysis (for example, if a dataset is large or certain data are generated continuously). They may also ask to see an example of a report summarising results of an analysis and the associated recommendations for follow-up and decision for action.
7. Has the company reflected over possible negative side effects of monitoring the specific SPIs that have been chosen?
8. Does the policy aim to link process safety performance with the remuneration/reward of senior managers?

## References:

Assessment of Safety Management of Major Hazard Sites, Short Report from MJV Fulda Germany 2010

Another inspection guide for inspection of the use of Safety Performance Indicators is:

*Assessment of Safety Management System in Relation to Key Risk Control Systems – 1. Process Safety Performance Indicators; Ireland; September 2013*

A number of publications exist which provide guidance on developing safety indicators:

HSE (UK) Developing process safety indicators: A step-by-step guide for chemical and major hazard industries (2006) <http://www.hse.gov.uk/pubns/books/hsg254.htm>

HSE (UK) Key Process Safety Performance Indicators: A short guide for Directors and CEOs (2008) [www.hse.gov.uk/leadership/keyindicators.pdf](http://www.hse.gov.uk/leadership/keyindicators.pdf)

RIVM (The Netherlands): A literature review on safety performance indicators supporting the control of major hazards (2012) [http://www.rivm.nl/en/Documents\\_and\\_publications/Scientific/Reports/2012/juli/A\\_literature\\_review\\_on\\_safety\\_performance\\_indicators\\_supporting\\_the\\_control\\_of\\_major\\_hazards](http://www.rivm.nl/en/Documents_and_publications/Scientific/Reports/2012/juli/A_literature_review_on_safety_performance_indicators_supporting_the_control_of_major_hazards)

RIVM (The Netherlands): Safety performance indicators for the safety management of Seveso companies (2012 - in Dutch) [http://www.gevaarlijkelading.nl/sites/default/files/default/veiligheidsindicatoren\\_brzo.pdf](http://www.gevaarlijkelading.nl/sites/default/files/default/veiligheidsindicatoren_brzo.pdf)

CEFIC (EU). Guidance on Process Safety Performance Indicators (2011) <http://www.cefic.org/Policy-Centre/Environment--health/Seveso/Documents/>

The Energy Institute. Research report: Human factors performance indicators for the energy and related process industries (2010). <http://www.energyinst.org/technical/human-and-organisational-factors/human-factors-performance-indicators>

OECD Guidance on Developing Safety Performance Indicators (2nd Ed., 2008) [http://www.oecd-ilibrary.org/environment/oecd-guidance-on-safety-performance-indicators\\_9789264019119-en](http://www.oecd-ilibrary.org/environment/oecd-guidance-on-safety-performance-indicators_9789264019119-en)