**MJV Workshop on using Safety Performance Indicators (SPIs) in Enforcement and Risk Management of Major Hazard Sites  
10-12 April 2018, Hernstein, Austria**

**Session 2. The Role of SPIs in Safety Performance**

***Here the participants should discuss ways in which SPIs might or might not be effective and if so, how. Participants are asked to look at SPIs in the context of safety critical elements of a site. This session is divided into two parts each of 75 minutes.***

***Instructions:***

***Each group is assigned one of the following categories of safety critical elements.***

**CRITICAL SAFETY AREAS**

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| 1. ***PLANT INTEGRITY*** 2. Primary containment, e.g., vessels, piping, pumps etc. 3. Safety systems, emergency shutdown,overpressure, etc. 4. Site layout |
| 1. ***PEOPLE***  * Ownership culture and attitude * Resources, e.g., technical authorities, managers * Competence of managers and operators * Management of 3rd parties, e.g., contractors, customers and suppliers working on site * Communication to staff on hazards, incident lessons learned, procedures, changes * Communication to the public |
| 1. ***PROCESSES***  * SMS – adequacy, use * Maintenance/mechanical integrity * Control of the site; access people etc. * Interfaces; ships, road/rail tankers * Management of change * Emergency response planning * Auditing, accident/incident investigation, feedback loops, performance measurement |

***In the first half of Session 2, discuss the questions given in Part 2A in the following pages. In the second half, discuss the questions given in Part 2B in the following pages.***

***Please look at all the questions together and decide the group’s strategy for the session. The group should aim to discuss all questions in each session.***

* ***Rapporteurs/Presenters – Please label your sessions and presentations on the memory stick clearly (e.g., Group 1, Session 1)***

***Therefore, your main tasks are:***

***1) The group should choose a rapporteur at the beginning of the session. Rapporteurs should take good notes on a pc and these should be provided to the Chair at the end of the session.***

***Please spend no more than 5 minutes on choosing questions and selecting a rapporteur.***

***2) Discuss the questions and try to provide concrete answers to each. Specific details such as inspection methods, inspection questions, strengths and weaknesses, best and worst case criteria, using real cases from inspections, are all good ways to make your experience useful for other inspectors.***

***3) The group should use the last 10 minutes to structure the plenary presentation and decide who will give the presentation.***

***IMPORTANT***

***You have 75 minutes for both parts 2A and 2B.***

***You should probably leave 5-10 minutes at the end of each session to prepare the presentation for that half of the session. If you wait to do both all at once at the end of Session 2B, you may not have enough time.***

***Watch your time and please stay on topic!***

**Questions for Session 2A – The Role of SPIs in Safety Performanc**

*Each question also has subquestions that are offered as options to help stimulate a concrete discussion.*

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| ***PLANT INTEGRITY***   * Primary containment (vessels, piping, pumps etc) * Safety systems, emergency shutdown, overpressure, etc. * Site layout  1. **When inspecting a Seveso site, how often do you find that operators use SPIs to evaluate safety performance of plant integrity?**  |  |  | | --- | --- | | **Frequency** | **Number of inspectors in your group** | | Always |  | | Nearly always |  | | Sometimes |  | | Almost never |  | | Never |  |   *In your answer, also list the reason why different sites establish SPI programmes these SPIs (e. g., improving the plant integrity by finding gaps, showing the community that plant integrity is perfect; minimising the costs for maintenance ...).*  *Discuss and list the types of industries in which these SPIs might be more critical. (You may use the attached list as a good but you may also suggest other industries.)*  *Indicate if there are some sites that you think should have such SPI measures but do not. Give examples to support your answers.*   1. **What kind of SPIs should be used for each of the specific plant integrity categories below?** *(You may also indicate other categories as you wish.)*  * Primary containment (vessels, piping, pumps, etc.) * Safety systems, emergency shutdown, overpressure, etc. * Site layout   *What measures have you seen sites use for these categories?*  *Do you think most sites (that have SPI programmes) have effective measures for plant integrity?*  *If there are some measures used that you think are not appropriate, please indicate which and explain.* |

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| ***PEOPLE (QUESTION 2A)***   * Ownership culture and attitude * Resources, e.g., technical authorities, managers * Competence of managers and operators * Management of 3rd parties, e.g., contractors, customers and suppliers working on site * Communication to staff on hazards, incident lessons learned, procedures, changes * Communication to the public  1. **When inspecting a Seveso site, how often do you find that operators use SPIs to evaluate safety performance of people?**  |  |  | | --- | --- | | **Frequency** | **Number of inspectors in your group** | | Always |  | | Nearly always |  | | Sometimes |  | | Almost never |  | | Never |  |  1. **What kind of SPIs should be used for each of the specific “people” categories below?** *(You may also indicate other categories as you wish.)*  * Ownership culture and attitude * Resources, e.g., technical authorities, managers * Competence of managers and operators * Management of 3rd parties,e.g., contractors, customers and suppliers working on site * Communication to staff on hazards, incident lessons learned, procedures, changes * Communication to the public   *What measures have you seen sites use for these categories?*  *Do you think most sites (that have SPI programmes) have effective measures for people performance?*  *If there are some measures used that you think are not appropriate, please indicate which and explain.*   1. **What are “pros” and “cons” of using SPIS for improving the managers and operators competences?**   *Do you think these are effective and/or necessary performance measures?*  *Do you think that SPIs for evaluating the quality of communication to staff on hazards, incident lessons learnt, procedures, and changes is useful?* |
| ***MANAGEMENT PROCEDURES (QUESTION 2A)***   * SMS – adequacy, use * Maintenance/mechanical integrity * Control of the site, e.g., access people etc. * Interfaces, e.g., ships, road/rail tankers * Management of change * Emergency response planning * Auditing, accident/incident investigation, feedback loops, performance measurement  1. **When inspecting a Seveso site, how often do you find that operators use SPIs to evaluate safety performance of management procedures?**  |  |  | | --- | --- | | **Frequency** | **Number of inspectors in your group** | | Always |  | | Nearly always |  | | Sometimes |  | | Almost never |  | | Never |  |  1. **What kind of SPIs should be used for each of the specific “management procedure” categories below?** *(You may also indicate other categories as you wish.)*  * SMS – adequacy, use * Maintenance/mechanical integrity * Control of the site, e.g., access people etc. * Interfaces, e.g., ships, road/rail tankers * Management of change * Emergency response planning * Auditing, accident/incident investigation, feedback loops, performance measurement |

**Questions for Session 2B – The Role of SPIs in Safety Performance**

*Each question also has subquestions that are offered as options to help stimulate a concrete discussion.*

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| ***PLANT INTEGRITY (2B)***   * Primary containment (vessels, piping, pumps etc.) * Safety systems, emergency shutdown, overpressure, etc. * Site layout  1. **How can you tell when the performance measures are appropriate for monitoring performance of plant equipment and infrastructure?**   *Give some examples of measures that may not be appropriate or sufficient.*  *How can gaps in measurement (what is not, but should be, measured) be identified?*  *How do you know when the measures are not adequate to monitoring performance of plant integrity?*   1. ***How can you tell when the SPI systems for plant integrity are having an impact on process safety performance?***   *Have you seen a positive link between use of SPI’s and plant integrity?*  *How often have you seen SPI’s for plant integrity driving a site’s safety improvement plans and actions?*  *How long after they are implemented do you think SPI’s for plant integrity show successful results?*   1. **How do sites manage follow-up of SPI results for people and check that they are accurate and relevant?**   *Which level of management is most interested in SPIs for people?*  *What are some good and bad practices you have observed for:*   * + *Following up on SPI results?*   + *Communication of SPI results to management and staff?*   + *Re-evaluating the effectiveness of SPIs for people?* |

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| ***PEOPLE (2B)***   * Ownership culture and attitude * Resources, e.g., technical authorities, managers * Competence of managers and operators * Management of 3rd parties, e.g., contractors, customers/suppliers working on site * Communication to staff on hazards, incident lessons learned, procedures, changes * Communication to the public  1. **In your opinion/experience, are the SPIs useful as input for assessing how sites manage and support people in reinforcing site safety?**   *Discuss whether it is appropriate to have site measures for monitoring*   * *Safety performance of people?* * *The measures taken to reinforce safety performance of people?* * *Safety culture?*   *What are the most important measures?*  *How can gaps in measurement (what is not, but should be, measured) be identified?*  *Or alternatively, how do you know when the measures are not adequate to monitoring performance of people?*  *What are examples of good (or bad) information that can results from tracking SPIs for people?*   1. ***How can you tell when the SPI system for people is having an impact on process safety performance?***   *Have you seen a positive link between use of SPI’s and people performance?*  *How often have you seen SPI’s for plant integrity driving a site’s safety improvement plans and actions?*  *How long after they are implemented do you think SPI’s for people show successful results?*  *Please give any examples of specific cases that may be relevant.*   1. **How do sites manage follow-up of SPI results for people and check that they are accurate and relevant?**   *Which level of management is most interested in SPIs for people?*  *What are some good and bad practices you have observed for:*   * + *Following up on SPI results?*   + *Communication of SPI results to management and staff?*   + *Re-evaluating the effectiveness of SPIs for people?* |  |

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| ***MANAGEMENT PROCEDURES (QUESTION 2B)***   * SMS – adequacy, use * Maintenance/mechanical integrity * Control of the site, e.g., access people etc. * Interfaces, e.g., ships, road/rail tankers * Management of change * Emergency response planning * Auditing, accident/incident investigation, feedback loops, performance measurement  1. **In your opinion/experience, are the SPIs useful as input for management assessment of the MAPP and the effectiveness and suitability of the safety management system?**   *Can SPIs for management procedures trigger improvement in safety performance?*  *Are some elements more important to measure than others (if so, which and why)?*  *Do you think that SPIs for evaluating the quality of communication to staff on hazards, incident lessons learnt, procedures, and changes is useful?*  *Are some elements more difficult to measure? If so, which? Should sites still try to measure them, and if so, what measures could you suggest? Should there be more research and experimentation here?*  *What are the “pros” and “cons” of using SPIS for improving management procedures?*  *Please give any examples of specific cases that may be relevant.*   1. ***How can you tell when the SPI system for management procedures are having an impact on process safety performance?***   *Have you seen a positive link between use of SPI’s and performance of management of procedures?*  *How often have you seen SPI’s for plant integrity driving a site’s safety improvement?*  *How can you tell when the performance measures are appropriate for monitoring performance of management procedures***?**  *How long after they are implemented do you think SPI’s for management procedures show successful results?*   1. **Which level of management is most interested in SPIs for management procedures? In your answer, please discuss the reasons.**   *Which level of management is most interested in SPIs for people?*  *What are some good and bad practices you have observed for:*   * + *Following up on SPI results?*   + *Communication of SPI results to management and staff?*   + *Re-evaluating the effectiveness of SPIs for people?* |