**MJV Workshop Break-Out Session Questions
Risk Management and Enforcement on Aging Seveso Sites
10-12 April 2019, Qawra, Malta**

**Session 2. Special Topics**

***Break-out groups will be assigned one of the following topics:***

***A. Ageing of physical assets
B. Ageing of instrumentation and other IT software and hardware
C. Ageing and organisational change***

***INSTRUCTIONS TO THE GROUP***

***1) In the first 5 minutes, groups should:***

* ***Choose a rapporteur (note-taker)***
* ***Decide on a strategy for the questions.***

***Recommendations***

* ***Look through the questions and decide together on a strategy.***
* ***Leave time to discuss the last question (Question 3 in Topic A, Question 4 in Topic B, and Question 2 in Topic C), or you can discuss this question as you go through each topic in the prior questions***
* ***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.***

***2) In the last 10 minutes at the end of the session, prepare your group presentation.***

***RAPPORTEURS/PRESENTERS –***

* ***You should have both NOTES and a PRESENTATION on the memory stick. Please take good notes!***
* ***Please label your sessions and presentations on the memory stick clearly (e.g., Group 1, Session 1)***
* ***Give your memory stick to the chair at the end of the session4)***

***You have 75 minutes. Watch your time and please stay on topic!***

**A. Ageing of physical assets**

*There will be two groups discussing this topic. One group will be requested to discuss Questions 1 and 3 and the other should discuss Questions 2 and 3. (Question 3 is mandatory for both groups.)*

**Questions to be considered**

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

1. **Provide your perspective on how to approach inspection of ageing of physical assets.**
* *What sort of physical assets, both equipment and infrastructure, do you regard to be most relevant for this discussion?*
* *What do you regard as the largest threat to the plant integrity regarding ageing of physical assets? Give specific examples whenever possible.*
* *What documentation would you request to see before a visit?*
* *What information/evidence will you look for during a visit?*
* *How do you expect this to be reflected in*
	+ *The safety management system?*
	+ *Consequences of the audit cycle?*
	+ *Incident analysis?*
	+ *Maintenance records?*
* *What techniques can be used to engage with the operator and achieve action by the operator?*
* *How can you achieve change within an organisation without enforcement action?*

**2. Ageing plant issues are integral with maintenance systems. So what do we look for in a maintenance system?**

* *What do we expect to see in a capital (equipment) replacement programme? How would a risk based approach affect this?*
* *What do we expect to see in terms of a maintenance and replacement programme for utilities (e.g., electricity, power) and for mitigation and response systems?*
* *How valid is a safety critical equipment approach in an ageing plant situation?*
* *Are there any specific maintenance issues when engaging contractors to work on ageing plant?*
1. **In what circumstances, would the following inspection approach be useful:**

**a. Use of standards to determine the level of ageing risk, e.g., gap analysis against a standard?**

*For what sort of equipment? What standards could be used?
What gaps are acceptable and what would require action?*

**b. Following a checklist (produced from this workshop)?**

*When would this be useful? List some suggestions of questions on the checklist*

**c. Asking open questions?**

*When would this be useful? List some questions that would be useful.*

**d. Other?**

**5-10 minutes before the session ends, summarize your discussion. Agree on 10 main points regarding inspection and risk management of ageing physical assets**

**B. Ageing of instrumentation and other software and hardware**

*There will be two groups discussing this topic. One group will be requested to discuss Questions 1, 2 and 4 and the other should discuss Questions 1, 3 and 4. (Questions 1 and 4 are mandatory for both groups.)*

**Background:**

*One of the points dealt within the safety management system (SMS) is operational control — 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;*

*Regarding ageing of industrial control systems (ICS) we have some challenges with monitoring and control of risks associated with ageing equipment. For example, we can have different problems such as compatibility of new software with old hardware/components, but also that our old software has security flaws that make our industrial control systems vulnerable to cyber threats. Furthermore, we may have different control systems in different parts of a process plant that to some extent need to be able to communicate with each other to maintain a high degree of process safety.*

*However, when it comes to the procurement requirements regarding “soft” parameters as support quality, support access, and system compatibility we may have a real challenge regarding price. Sometimes we are faced with automation/software companies that want to come into a market and lowers the price so you get an offer you cannot refuse, regardless it fulfils parameters as support quality, support access and system compatibility.*

*If price is the only parameter you are risking getting stuck with a patchwork of parts that have varying degrees of compatibility.*

**Questions to be considered**

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

1. **How often has each inspector in the group inspected ageing of IT systems?**

|  |  |  |
| --- | --- | --- |
| **Country** | **Frequency****1 - Very often2 – Sometimes3 - Never** | **Comments** |
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1. **Provide your perspective on how to inspect ageing of instrumentation and other IT software and hardware**
* *What sort of systems do you regard to be most relevant for this discussion?*
* *What do you regard as the largest threat to the plant integrity regarding ageing of instrumentation and other IT software and hardware?*
* *What documentation would you request to see before a visit?*
* *What information/evidence will you look for during a visit?*
* *How do you expect this to be reflected in*
	+ *The safety management system?*
	+ *Consequences of the audit cycle?*
	+ *Incident analysis?*
	+ *Maintenance records?*

 *Which requirements can authorities set on the companies with a view of reducing the risk of system failure?*

* *What techniques can be used to engage with the operator and achieve action by the operator?*
* *How can you achieve change within an organisation without enforcement action?*
1. **What requirements and strategies can authorities expect on sites to reduce the risk of IT system failure?**
* *What kind of programmatic elements would you expect fora proactive approach to reduce risk from ageing of IT sites? From accidents? From cyber attacks?*
* *How can a site deal with the procurement challenges to reduce the risk of getting stuck with a patchwork of parts that have varying degrees of compatibility, creating a safety and security risk?*
* *How can authorities get a better picture of the challenges the companies are facing with the industrial control systems?*
* *How far can inspectors go in examining security concerns with ageing IT systems, especially in view of the interconnections across the entire industrial information and control systems?*
* *What training and competency should inspectors have to address ageing of IT systems?*
* *What could your organisation do to raise awareness of these issues?*
1. **In what circumstances, would the following inspection approach be useful:**

**a. Use of standards to determine the level of ageing risk, e.g., gap analysis against a standard?**

*For what sort of equipment? What standards could be used?
What gaps are acceptable and what would require action?*

**b. Following a checklist (produced from this workshop)?**

*When would this be useful? List some suggestions of questions on the checklist*

**c. Asking open questions?**

*When would this be useful? List some questions that would be useful.*

**d. Other?**

**5-10 minutes before the session ends, summarize your discussion. Agree on 10 main points regarding inspection and risk management of IT systems**

**C. Ageing and organisational change (people, procedures, management)**

*The group is expected to address both questions 1 and 2.*

**Questions to be considered**

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

1. **Provide your perspective on how to inspect ageing management in light or organisational change.**
* *What sort of organizational elements do you regard to be most relevant for this discussion?*
* *What types of ageing are covered under this topic?*
* *Consider elements of organizational change discussed in Session 1 (change of operator, downsizing, etc.). What kinds of influences on ageing do you foresee that they could each have?*
* *What documentation would you request to see before a visit?*
* *What information/evidence will you look for during a visit?*
* *How do you expect this to be reflected in*
	+ *The safety management system?*
	+ *Consequences of the audit cycle?*
	+ *Incident analysis?*
	+ *Maintenance records?*

 *Which requirements can authorities set on the companies with a view of reducing the risk of system failure?*

* *What techniques can be used to engage with the operator and achieve action by the operator?*
* *How can you achieve change within an organisation without enforcement action?*
1. **In what circumstances, would the following inspection approach be useful:**

**a. Use of standards to determine the level of ageing risk, e.g., gap analysis against a standard?**

*For what sort of equipment? What standards could be used?
What gaps are acceptable and what would require action?*

**b. Following a checklist (produced from this workshop)?**

*When would this be useful? List some suggestions of questions on the checklist*

**c. Asking open questions?**

*When would this be useful? List some questions that would be useful.*

**d. Other?**

**5-10 minutes before the session ends, summarize your discussion. Agree on 10 main points regarding inspection and risk management of ageing aspects associated with organisational change**