Break-Out Session 1

Recognising ageing sites and ageing site risk factors

Group 2

Please save under a different name, e.g. "Break-out Session Group 2_Presentation"

1. Discuss typical signs of an ageing site, and how these can be identified

- **Equipment** (mechanical, electrical, maintenance back-logs)
- **Process control systems**, process software, instrumentation, alarm systems,
- **Infrastructure,** electrical,
- IT infrastructure, universal power supply (UPS)
- **Documentation** (update of P&I'Ds and other safety critical documentation)
- **Procedures**, (update of procedures, for older installations and equipment, etc.)
- **People** (competence), training content and structure
- **Change of ownership** (companies selling out plants that are expensive to maintain)
- **Interfaces of old and new elements**, new processes and old equipment, change in inputs and processes, etc.
- **Accidents and incidents,** alarm handling
- **Others**?

3. What skills does an inspector need (training and competency) to be able to review ageing plant issues?

- Equipment – most important topic to begin
- Corrosion
- Labelling
- Spills / leaks
- Electrical cables / trays damaged
- Cracking on fire coating
- Structural damage to plinths / supports
- Pipe supports damaged / missing / pipes hanging in air

3. What skills does an inspector need (training and competency) to be able to review ageing plant issues?

- Infrastructure
- Visible damage to foot paths / bunds etc
- Poor housekeeping signs on the site
- Overloading of electrical supplies / plant expansions over the years , still original electrical equipment
- Signs of overcrowding and too little space

3. What skills does an inspector need (training and competency) to be able to review ageing plant issues?

- Good Signs of a good aging management programme
- Good labelling / both chemical labelling & tag numbers
- Good housekeeping standards on the site
- Well painted and maintained

3. What skills does an inspector need (training and competency) to be able to review ageing plant issues?

- Inspection questions / tips
- Is there is a specific procedure for asset integrity management
- Did you use a Risk based approach to identify the critical equipment most at risk to aging
- Are there 2 lists of “critical” equipment – safety critical for major hazards and Critical for failure due to aging
- Need sometimes to take a “system approach” – use QRA to identify the critical processes & take wholistic examination of each element in the system.

2. Discuss factors that could make ageing occur at a faster pace than normal or undermine effective risk management of ageing

- **Change of process conditions without proper MOC**
- **Weather conditions, environmental conditions**
- **Temporary shutdown of the entire plant or units**
- **Dead legs caused by blinding of equipment taken out of use, but not removed and not maintained**
- **Lack of maintenance or postponed maintenance**
- **Lack of awareness regarding maintenance of equipment and pipes under ground / isolated**
- **Lack of personnel on site** (unmanned plants)
- **Loss of competence**
- **Shared or unclear responsibilities between multiple owners**
- **Change of ownership**
- **Cost-cutting**
- **Down-sizing**
- **Others?**

2. Discuss factors that could make ageing occur at a faster pace than normal or undermine effective risk management of ageing

Change of process conditions

Example ; made changes in the past
At the time poor management of change
No information / data available

Important to keep records of changes / equipment

Example , paper records only, archive systems
Trying to find the information you need

The weather / natural factors
Earthquake
Poor specification for exact conditions
Not neccessarily climate change

2. Discuss factors that could make ageing occur at a faster pace than normal or undermine effective risk management of ageing

Increased production demands and reducing maintenance oppertunities and scheduling

Change in process substances and material of construction no longer appropriate for new risks / hazards

Tips for inspectors

How do you manage your archive
How do you make sure you keep to your maintenance schedule
Is the maintenance schedule still appropriate
Do you have good product introduction procedures
Good management of change systems
Is equipment failing outside the maintenance windos – check maintenance records / failure data

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2. Discuss factors that could make ageing occur at a faster pace than normal or undermine effective risk management of ageing

QuTechestion 3
Skills for inspectors

Need specific knowledge / training on equipment / ped
Very difficult for 1 inspector to cover all disciplines mechanical / electrical etc
Needs to be able to see and assess the conditions they see
Be able to analyse the data and able to ask hard questions

Use of checklist would be a good aid to inspector
Technical experts to be available for backup

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