Break-Out Session 1

Recognising ageing sites and ageing site risk factors

Group 3

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

- **Equipment** (mechanical, electrical, maintenance back-logs)
- Take a piece of equipment that is very visible and look at maintenance records. Then take an object that is more hidden and look at maintenance records. Then compare the maintenance records of both. Are they being maintained well? Is the less obvious one maintained as well as the more obvious one?
- For emergency response, you can also check if they have reserve supplies and if equipment is in functional condition. Can ask for a test of equipment?
- Walk around and ask questions about the maintenance history and management plan of that equipment.
- There is a replacement strategy of the plant
- **Process control systems**, process software, instrumentation, alarm systems,
- Look at the logs. Recognition of risk assessment
- **People** (competence), training content and structure
  - Clear succession plan exists (good) or does not exist (bad). Hits small companies and large companies in different ways. The loss is the same but the way it happens may be different.

- **Infrastructure,** electrical, IT infrastructure, universal power supply (UPS)
- NZ has had failure of the power supply due to ageing but approach is not uniform
- **Documentation** (update of P&I'Ds and other safety critical documentation) and **procedures**, (update of procedures, for older installations and equipment, etc.)
  - P*IDs not updated. Procedures have not been reviewed for several years. The paperwork can be a very good indicator. The checklists for maintenance don't math the equipment. Contact person and telephone numbers are not updated.
  - Structure of how they record incidence and mechanical failures. Can they identify ageing precursors?

- **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.
- Problem can be if the contractor is not up to date
- **Accidents and incidents,** alarm handling
- Large number of incidents (near misses) being reported. Look at the incident register. Can ask before you go to a site.
- **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 without proper MOC**
- Higher volumes, temperatures can cause premature ageing
- **Temporary shutdown of the entire plant or units**
- What do they prioritise for the shut down, do you use management of change, how did ageing fit into the shutdown. What are they checking during shutdown? You can check the planning for the shutdown, who are the contractors you will use? Contractors can also help with identifying aging issues.
- **Lack of awareness regarding maintenance of equipment and pipes under ground / isolated**
- **Lack of personnel on site** (unmanned plants)
- Make sure that they have a good maintenance strategy, how often do they do manual checks? What do the records show about their strategy to control ageing equipment?

- Shared or unclear responsibilities between multiple owners
- Lines of communication can degrade especially if there is product passed between plants, communication of limitations, constraints on process between different parts of the site under different ownership
- Change of ownership
- Look at budgets. How does the budget look of new owners for maintenance, etc.
- NonEU of requirements
- Cost-cutting
- Down-sizing
- Others?

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

How does the inspector train

-Training on the job

-Need to have good communication between inspectors as inspectors change

-Make sure you read the report from the last inspection

-Follow up on what they told you to do