

Needs and opportunities for international research for advancing management of decommissioning

1 What are the biggest challenges for managing the transition from operation to decommissioning?

- How to keep the right (best) people – need to be quick in thinking of retaining these
- Mindset of the staff who leave – risk of unemployment in the area
- May not have the funds to invest in retraining, may have to let staff go
- Keeping people engaged and motivated, and keeping focus through a possibly long shutdown period
- Technical: Waste management, waste removed and not separated or segregated, with a mindset of being somebody else's problem..
- Going from repetitive work during operations to varied work during decommissioning – need to change mindset
- Making staff aware of new safety issues
- Managing transition from a line hierarchy to a project hierarchy
- Retain collective memory
- Timeline can change, challenging for the staff
- Post operational clean-out
- Inventorisation and characterization can be started during transition, also resolving decontamination
- Keeping operational data
- Do not forget offsite work; communication with community, retired staff

2 What are the best practices for managing the transition from operation to decommissioning?

- Can be useful if both management and regulator indicate that decommissioning should be discussed early, during operation
- Have HR plans in place even before announcement of shut-down
- Need to bring in external help with decommissioning experience for refining your plans

- Good to have both internal and external communication plans
- US: Public advisory committees set up by plant, running on their own
- Good practice can be to hire new people without “old bad habits” to avoid a degraded safety culture, may be easier to instill a new culture – might have more respect for radiological risk
- Establishment of public information centre for decommissioning
- Decommissioning archive
- Timely conversion of human resource policy
- Close contact with regulator beneficial, as regulations will change
- Clearly defined organizational structure for the project
- Clearly defined new goals to help staff to get a new direction in their mindset, e.g. number of dismantled building etc

3 What is the motivation for using a safety case approach? Are there any suitable alternatives?

- To avoid underestimation of industrial risk this can be useful
- Document and track how work will be done safely
- To prove to regulator and any other external stakeholders that the work will be done safely
- Makes it possible to get a license
- Allows you to identify issues in advance to prevent cost and delays
- Alternative: Agile approach “making up as you go along”.

4 What would make the development of a decommissioning safety case easier for you? E.G. Support from the regulator, templates?

- Collaboration with other companies that have done similar work
- Guidance from regulator or organizations like IAEA
- Willingness and freedom to use novel layouts for the safety case
- Software for managing the logic of arguments
- Availability at the regulator for face to face meetings
- Incorporation of multi-media into the safety case
- HAZOP workshops are very useful, conducted together with plant

staff, improves safety culture and pride. Good form for getting staff comments on board.

5 Is there a need for innovative training/education methods for improving safety culture? Can you recommend such training/education methods?

- Top-down management: Safety culture should come from the top
- Using 3D simulations as a tool for changing safety culture
- Have a lot of dialog with the staff, listening and learning
- Training effort should be dependent on the target work group
- Traditional methods not always good enough
- Safety culture, use computerized training (e-learning), can be personalized on pc or mobile phone. Flexible solution without significant added workload
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6 What are some not technology related specific challenges (differences) between politically motivated, economically motivated, and accident initiated decommissioning?

- Political shutdown:
 - Staff leaving..
 - Acceptance
 - Operators can be left in a problematic economical situation
- Economical:
 - Staffing
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- Accident:
 - Time is critical, people are afraid
 - Prioritized, but challenge is management of budget
 - Communication between different players – regulations change