Workshop on
" International Workshop on Application of Advanced Plant Information Systems for Nuclear Decommissioning and Life-cycle Management "

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Group Discussion Summary

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Staffing for decommissioning:

In-house personnel is important for supporting the decommissioning activities. The optimal mix of in-house and contracted personnel depends on the capabilities for decommissioning existing in-house. It is important to efficiently transfer knowledge from in-house staff to involved contractors.

Business case for application of digitalization:

In an ideal case, full scope digitalization is desired for the whole process. However, investing in full scope digitalization from the start may be difficult, for instance due to inadequate data indicating a clear positive business case. Hence, it is more feasible to start with smaller pilot projects that are easy (quick and cheap) to implement and entail low risks.

Based on the positive outcomes of such pilot projects value for money can be demonstrated for larger scope implementation. Pilot projects can also reveal the optimal level of effort (investment) for digitalization for a specific task. For instance efforts into detailed 3D CAD modelling and laser scanning (mainly for higher risk jobs and more contaminated areas) versus rougher scanning and modeling (for the whole facility and site) can be streamlined to achieve best value for money.

Requirements for digitalized material should be integrated into the tendering procedure. This will allow development of better and safer contracts.

Digitization is also foreseen to enable better re-use of material resulting from decommissioning, and make better tactical decisions about sentencing material and components.

Motivating decommissioning teams for adopting innovative digitally enhanced solutions:

Digitalization should be adopted by the whole organization involved in the decommissioning process.

Generational shift will enhance natural adoption of higher digitalization.

Application of digitalization has to be integrated into international training initiatives/programs for facilitating efficient adoption.

For people responsible for financial aspects (management), profit margin has to be demonstrated

for facilitating adoption of higher level of digitalization.

Proving efficiency (and cost-efficiency) of digitalization in decommissioning:

Success stories from earlier (e.g. pilot) applications should be demonstrated.

Allow end-users (e.g. field workers) experiment with the new concepts to realize benefits first-hand and provide feedback on usability and efficiency. Enable end-users to maintain (e.g. update) the new systems themselves. Ensure an iterative implementation of the new systems in close collaboration with the end-users, to ensure good alignment of the new solutions with actual needs of the users.

Demonstrate the benefits of the new concepts to the management level through showing the results of the pilot projects with the end-users.

Optimal level of detail for modelling decommissioning sites/facilities:

Learn from the construction industry.

Detail of the model(s) should be proportional with the risks entailed by component/environment when manipulating/working within (e.g. higher level of contamination requires higher details).

Use of the 3D model should be defined beforehand and the details (resolution) should be determined based on the requirements for the intended use. For instance high resolution photos, by default, contain high detail of the captured area, and may be a suitable alternative to 3D CAD models for some purposes.

At least a rough model of the whole facility/site should be prepared with details being added to it as/when needed.

Use of historical knowledge from the operation/design phase:

Knowledge on operational history of the facility/site is very important for informing the decommissioning process. Hence, considerable efforts should be dedicated for reviewing historical records and find information relevant for decommissioning.

Employees should be interviewed in time (before they retire or leave the organization for other reasons) in order to capture relevant information, for instance unrecorded information (e.g. contamination) affecting risks of planned decommissioning jobs.

Both historical record review and interviews can help reconstructing information that is hard or impossible to new surveys and measurements. A combination of historical information review and performing new surveys is the optimal strategy.

Good practices and bottlenecks in digitalization for decommissioning:

A flexible approach defining investment into acquiring input data (e.g. 3D modelling) for the new digitally enhanced concepts should be adopted. More investment into details should be dedicated as needed by the tasks at hand.

In order to avoid investing into modeling that will later become outdated and not used, it is

important to ensure that digital input (e.g. 3D models) will be regularly maintained. Enable the end-users to own and maintain the data throughout the process. This way the data can be updated on a regular basis through using the data in tasks that would be done anyway (with or without a using a digitalized process).