

Staff management, training and knowledge management

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Staff management/training and knowledge management are organisational issues that are particularly sensitive in long-term projects stretching over decades like the development and operation of a geological repository. The IAEA has already issued several publications that deal with this issue (IAEA, 2006, 2008). Organisational aspects were also discussed in the framework of a topical session organised by the Integration Group for the Safety Case (IGSC) at its annual meeting in 2009 and were regarded as a topic deserving future attention (NEA, 2009a). More recently, the Forum on Stakeholder Confidence (FSC) identified organisational, mission and behavioural features as attributes of confidence and trust (NEA, 2013). They also identified that aspects such as structural learning capacity, high levels of skill and competence in relevant areas, specific management plan, good operating records, transparency and consistency are associated with confidence building in a safety case. These aspects are considerably related to staff training/management and knowledge management.

The IGSC has initiated a proposal of study dedicated to staff training/management and knowledge management with the objective to highlight how these recent concerns and the requirements issued by the IAEA are concretely implemented in the national programmes. The goal of this study is to acknowledge the differences of views and needs for staff management and knowledge management at different stages of individual programmes and between implementer and regulator. As a starting point to this study, the JAEA and ONDRAF/NIRAS prepared a draft questionnaire in order to succinctly capture processes and tools that the national organisations have implemented to meet the requirements and address the issues set out in the field of staff and knowledge management.

For the purpose of this study, a questionnaire is now under development, which will be presented on the occasion of this symposium with guidance based on a test run organised to evaluate the efficiency of the questions posed, prior to its sending to sister organisations.

The draft questionnaire intends to cover the following four items related to staff and knowledge management:

- The first question addresses the resources dedicated to a development programme of geological disposal and their allocations among the different activities. These evolve over time, from one development stage to the next but also due to societal evolution. As an example, the NEA (2007) noted that the growing involvement of the stakeholders in the waste management programmes from the end of the

20th century produced a fundamental change in the cultural and structural aspects of the waste management organisations. Specific resources were indeed deployed to strengthen stakeholder dialogues as well as external and internal communications. An objective in this survey is to analyse more globally how the resources of a national programme have evolved since its inception towards its implementation and how specific processes (e.g. QA processes), competence (e.g. special experts, safety assessors, co-ordinators, etc.) or stages (e.g. generic, siting and operational phases) impacted the financial and human resources. Input from the respondents should allow identifying how the national organisations adapt to the increasing diversity and needs of the RD&D activities as a geological programme moves forward and also how they provide, maintain and plan tailored competence to fulfil these needs.

- The second topic touches on the traceability of the reporting: programmes, in particular its internal reporting and the accessibility to the information and related decisions. The issue focused on here reflects the discussion that arose at the 2009 topical session of the IGSC concerning the structuring of the information, for example, its transparency and categorisation as safety-critical or, at the opposite, not safety-relevant, or even obsolete.
- The third topic is related to the application of QA/KM measures. Implementation of comprehensive QA/KM over data/information/knowledge, computer codes and documents is highly challenging and very elaborate and complex process. A graded approach is necessary to maintain the focus on the project objectives. The questions for this third topic are directed toward how such approaches are implemented or reflected in the regulations.
- The introduction of the safety functions in geological disposal programmes emerged about a decade ago from the multi-barrier principle. Safety functions embody key aspects of long-term performance of the geological disposal system after closure, which can then be developed and translated into a hierarchical structure of technical and functional requirements (NEA, 2008). The bridge that safety functions provide between technical and scientific knowledge on the one hand, and between safety and feasibility objectives on the other, is a valuable strategic tool used by waste management organisations to steer and structure their R&D programmes (NEA, 2009b). The usefulness of a requirement management system has also been recognised by the NEA (2006) in the framework of a workshop on the design of engineered barrier systems (EBS). As the disposal programme moves forward, other dimensions, such as the operational safety, the feasibility, the costs and the environmental impacts, emerge and combine with long-term safety. The requirements and concerns expressed by the stakeholders representing different groups should also be accounted for and would, in some cases, conflict with technical requirements. The measures for this requirement management issue are, for examples, the practical tools developed by:
 - the national implementers to structure this diversity of requirements in a synoptic and hierarchical way;
 - the regulatory bodies to ensure the development of a structured and comprehensive set of regulations and guidances and to analyse whether the implementer's safety case meets the regulatory requirements.

The questionnaire and test run results will be further discussed at the symposium to explore the possibility of international co-operation in this area by e.g. sending the questionnaire to interested sister organisations.

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