Session 7 Technological innovations for spent fuel storage

In this short session, presentations described progress in the use of burn-up credit to optimise spent fuel storage arrangements while taking due account of the need to avoid criticality. In addition, some examples were given of technological innovations relevant to spent fuel storage.

The use of burn-up credit criticality safety analysis to allow improvement in the arrangement of stored spent fuel assemblies is well established and a report was presented on advances in the subject which had been reported at a special workshop in Spain in 2009. It was concluded that there has been a significant improvement in the spent fuel assay data now available leading to more reliable assessments. Measurement studies in Belgium to improve assessment reliability were described as well as an application of the burn-up credit approach for RBMK reactors in Ukraine.

Proven solutions to problems are not always the best and a paper was presented describing a formalised approach being used in France to encourage and structure innovative ideas within an organisation. Various methods are used to generate ideas, from discussions with customers to brainstorming. The ideas are then screened and the best ones are selected for application. Examples of ideas which have come from this process are: a method for optimising spent fuel baskets, improving containment of casks, mitigation of hydrogen risks, neutron shielding, thermal and structural management and novel dry storage systems.