

Session 3 dealt with several aspects of the research reactor fuel cycle: the development and qualification of high-density LEU fuels as replacements for HEU fuels; utilization; interim spent fuel management; refurbishment; and ultimate decommissioning. Disappointment was expressed that no announcement has been made of the expected extension of the US Acceptance Program for foreign research reactor spent fuel. Utilization as the only good justification for the continued existence of any research reactor was questioned and argued to be insufficient without the approval of stakeholders. Semi-wet or semi-dry extended interim storage was demonstrated as a method, which through fuel encapsulation and return of the packages to the spent fuel pool, can control the corrosion of aluminium-clad spent fuel until such time as it can be returned to its country of origin or sent for ultimate disposition. Refurbishment was presented as a cost-effective method of life extension to enable continued utilization of an aged research reactor compared with the alternative of the construction of a new reactor. Problems of dealing with stakeholders, funding issues and waste management associated with the decommissioning of a low power research reactor were presented and discussed.

It was suggested that new research reactors would be required to investigate and develop the advanced fuel and core materials for many of the proposed innovative power reactor concepts, such as those under discussion in the INPRO and Generation IV programmes. Moreover the controversial assertion was made that some of these research reactors may have to be powered with HEU or plutonium fuels, to investigate the conditions that will prevail in fast reactors.