

SESSION TITLE: Fuel Materials and Reprocessing

<p>Strengths</p> <ul style="list-style-type: none"> • Capability to manufacture prototypic fuels • Involvement in Halden irradiation programmes • Ability to manufacture Pu/Th bearing fuels • Good pedigree in Post irradiation analysis • Good process engineering resource base • Strength in reparation (aqueous) Chemistry (actinides etc.) • Access arrangements in place to NNL facilities for universities • Able to attract research students • Good links with EU/international programmes 	<p>Weaknesses</p> <ul style="list-style-type: none"> • UK industry not committed to long term research in spent/advanced fuel • Do not have nuclear strategy in UK (Gen IV/open-closed fuel cycle) • NDA strategy for AGR spent fuel unclear • Not involved in Gen IV international forum • Missing an adequate programme on spent fuel storage • Do not have commissioned facilities for active fuel R&D • Aging expertise base in technical area • No UK test reactor or current funded route to international MTR • Proliferation risk for current reprocessing
<p>Opportunities</p> <ul style="list-style-type: none"> • Gen IV fuels - accident tolerant fuels for Gen III/II • Improve understanding on fuel/fission product volatility • Commission 'Phase 3' which is specifically design for advanced fuel R&D with university access (inc. NNUF) • Novel/new techniques can now be used for fuel research, modelling and validation • Design of proliferation resistant fuels • Position UK to support decision of future closed versus open cycle • Develop pyro capability and other areas (difficult fuels) to broaden UK capability • Engage process engineering capability • Export opportunity (China/EU for advanced fuels) • Public engagement 	<p>Threats</p> <ul style="list-style-type: none"> • Closure of THORP • Collapse of residual expertise (next 5-10 years) • No funding for advanced fuel research (no national programme) • Lock of MTR • No focus on UK future needs – no strategy for roadmap • Students available but lack of facilities for fuels R&d • No training focus/training centres • Growth of world demand will put pressure on U resources • Public perception • No EPSRC panel to review energy related proposals