

Draft v1 April 2008: Subject to Modification

| Tuesday September 2 nd | | |
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| 0730 - 1600 | <p>Field Visit to Yucca Mountain</p> <p>A guided visit to the proposed repository site and local features relevant to its evaluation, led by DOE staff</p> | |
| Wednesday September 3 rd | | |
| 0830 – 0900 | <p>Introduction to the training course</p> <p>Objectives; how the week will work (structure of course) Participants introduce themselves.</p> | Neil Chapman ITC |
| 0900 – 0930 | <p>Welcome and overview of current status of US program</p> <p>Intended principally as orientation for non-US participants</p> | Russ Dyer Chief Scientist DOE/OCRWM |
| 0930 – 1030 | <p>The nuclear fuel cycle and radioactive waste</p> <p>The nuclear fuel cycle; the origins of spent fuel and high-level waste; reprocessing and the wastes it produces; amounts of SF/HLW existing worldwide; how they are conditioned for disposal; advanced fuel cycles and their implications for repository design; other wastes (LL-ILW, DU, Pu, DRSs) requiring geologic disposal; what other countries are doing with their HLW/SF</p> | Charles McCombie McCombie Consulting |
| 1030 – 1045 | Break | |
| 1045 – 1145 | <p>Chemical, thermal and hazard characteristics of HLW/SF</p> <p>Radiation hazards to people; radionuclides in waste; chemical form; radiological and toxic hazard potential with time; waste form characteristics with respect to disposal (half-lives, thermal impacts, radiation impacts); stability of fuel cladding; impacts of pre-disposal storage.</p> | Mick Apted Monitor Scientific |
| 1145 – 1300 | Lunch | |
| 1300 – 1430 | <p>Facilitated Discussion: The International Fuel Cycle</p> <p>Current international fuel cycle developments, international fuel cycle security and the implications of advanced fuel cycles and GNEP for waste disposal in the USA and other countries</p> | Tom Isaacs LLNL |
| 1430 – 1445 | Break | |
| 1445 – 1600 | <p>The concept of geologic disposal & geological environments being evaluated worldwide</p> <p>What geologic disposal means (generic concepts), its technical and non-technical objectives and why it has been selected.</p> <p>Range of geologic environments being considered worldwide, the hydrogeologic, structural and geochemical properties that make them suitable and which need to be understood; the tectonic and natural evolution issues associated with the formations and the types of environment in which they can occur.</p> | Neil Chapman ITC |
| 1600 – 1630 | Round-up discussion of Day 1 | Tutors |
| 1630 | Adjourn | |

| Thursday September 4 th | | |
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| 0830 – 0930 | <p><i>Design concepts for repositories and underground stores</i></p> <p>Basic safety concept of the multibarrier EBS - NBS system; different ways that this can be implemented for HLW and SF; how a safety concept integrates different geologic environment with different repository designs; why designs and safety concepts vary from country to country (different ways of achieving safety); examples of designs, why they were selected and how they have changed with development; how storage can be fitted into design concepts.</p> | Mick Apted Monitor Scientific |
| 0930 – 1030 | <p><i>Safety standards and regulations</i></p> <p>Basic international ethical and radiological principles underlying regulatory standards (IAEA, ICRP, etc); concepts of dose and risk; other components of regulations - e.g. non-human impacts, requirements for contents of safety assessment, treatment of timescales, uncertainty, etc; how standards and principles are applied in different countries; the manner in which regulators and implementers interact; future developments internationally</p> | Charles McCombie McCombie Consulting |
| 1030 – 1045 | <i>Break</i> | |
| 1045 – 1145 | <p><i>Showing it is safe: presenting the evidence</i></p> <p>The use of safety assessment results and multiple lines of evidence to present a set of reasoned arguments on long-term safety for the regulator and other audiences (geological stability, natural geochemical fluxes and concentrations, natural analogs, natural radiation background, etc)</p> | Neil Chapman ITC |
| 1145 – 1300 | <i>Lunch</i> | |
| 1300 – 1345 | <p><i>The Yucca Mountain project: a historical perspective</i></p> <p>Discussion of the history of the YMP and the US approach to nuclear waste disposal; drivers for waste policy and the current legal and regulatory situation; technical insights from performance assessment; regulatory and policy issues. Comparisons with the licensing of the WIPP repository.</p> | Lake Barrett Consultant |
| 1345 – 1445 | <p>PANEL DISCUSSION</p> <p>Lessons learned from licensing WIPP and from Yucca Mt History: the licensing process in the USA and in other national repository programs: the future at Yucca Mountain</p> | Lake Barrett Charles McCombie Mick Apted |
| 1445 – 1500 | <i>Break</i> | |
| 1500 – 1600 | <p><i>Selecting a repository site</i></p> <p>International guidelines on site suitability; national experience in selecting sites; political and technical constraints; stepwise narrowing down to an acceptable site; current status of national siting programs worldwide; contentious issues in siting</p> | Neil Chapman ITC |
| 1600 | <i>Adjourn</i> | |

| Friday September 5 th | | |
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| 0830 – 0915 | <p><i>Repository site characterization in different geologic environments</i></p> <p>Stages in characterising a site during the selection process; deployment of various field techniques - appropriate strategies for regional and site scale characterisation; advanced geosciences techniques; managing data & QA; data synthesis and interpretation of site properties; evolution into descriptive models; approaches for different geologic environments and different repository concepts.</p> | Neil Chapman ITC |
| 0915 – 1015 | <p><i>Repository total system performance assessment</i></p> <p>Development and application of probabilistic modeling in assessing the performance of a geologic repository over thousands of years. Discussion will focus on scenario development, treatment of uncertainties and model abstraction. Results of other national program safety assessments.(putting YMP analyses in context). Some key issues internationally in developing and presenting TSPAs</p> | Abe Van Luik, OCRWM/ORD |
| 1015 – 1030 | <i>Break</i> | |
| 1030 – 1200 | <p><i>Interactive Case Study</i></p> <p><i>Risk assessment for radioactively contaminated sites: Los Alamos Case Study</i></p> <p>How safety and risk assessment techniques are applied to make decisions on managing operating nuclear sites today: the RACER project at LANL</p> | Helen Grogan Risk Assessment Corporation |
| 1200 – 1330 | <i>Lunch</i> | |
| 1330 – 1430 | <p><i>International case studies on societal issues</i></p> <p>The Forum on Stakeholder Confidence (FSC) facilitates sharing of experience in addressing the societal dimension of radioactive waste management, explores means of ensuring an effective dialogue with the public with a view to strengthen confidence in decision-making processes among players at national, regional and especially at local levels. A broader, more realistic view of decision making is taking shape.</p> | Paula Alford Independent Consultant |
| 1430 – 1445 | <i>Break</i> | |
| 1445 – 1600 | <p>PANEL DISCUSSION</p> <p>The future of geologic disposal: key areas of future international development and change – obstacles and challenges</p> | Charles McCombie Neil Chapman Paula Alford Abe van Luik |
| 1600 | <i>Close of Course</i> | |