International Meeting on Deep Borehole Disposal of High-Level Radioactive Waste

3rd Circular - March 2016

The University of Sheffield, UK.

An international meeting on deep borehole disposal (DBD) of high-level radioactive waste will be hosted by the DBD Research Group at The University of Sheffield, UK. This meeting comes at a time when significant interest in DBD concepts is being shown by international organisations involved in high-level radioactive waste disposal.

The objective is to provide a forum for discussions on all aspects of DBD and is aimed at representatives from industry, governmental bodies and policy makers, academic institutions, and non-governmental organisations. The meeting will seek to reach conclusions on concept applicability, and formulate guidelines and recommendations concerning the use of DBD in disposing of specific radioactive waste streams.

This meeting is intended to facilitate discussion of technical, scientific, regulatory and social aspects of DBD, and will consist of keynote presentations, technical talks and extensive discussion. These will be based around four main themes:

• Current status of DBD – including technical aspects of the concepts under development.
• R&D activities and challenges – considerations associated with siting, waste package deployment and recovery, near-field barriers, borehole sealing, and all engineering aspects.
• Foreseeable progression of DBD – likely developments of the concept in the medium term.
• Future possibilities and applications of DBD – potential use of the concept at all scales, including centralised and dispersed disposal of a wide range of waste types.
Location
The historic city of Sheffield is synonymous with the industrial revolution, and during the 19th century gained an international reputation for steel production and cutlery manufacture. Sheffield is located in the valley of the River Don and its four tributaries, and a third of the city lies within the Peak District National Park. The city has a long sporting heritage and is home to the world’s oldest football club (Sheffield FC). Sheffield is less than 1.5 hours from the international airports of Manchester, Leeds Bradford and East Midlands, and is easily reached by train from Manchester and London.

Meeting Venue
The Mercure Sheffield St Paul’s Hotel and Spa is a modern 4-star hotel in the centre of Sheffield, and has a contemporary restaurant and bar, a spa, gym and indoor pool. The hotel is close to the Lyceum and Crucible theatres, the multi-award winning Winter Garden, the Millennium Gallery, various other museums and a range of shopping facilities.

Accommodation
Limited accommodation has been reserved at the venue at a cost of approximately £115 per person per night bed and breakfast. Accommodation cost is not included in the meeting registration fee, and delegates will need to book rooms directly with the hotel. Hotel room booking should be done by telephone or by e-mail. In either case the code “130616UNI” should be quoted along with the meeting title, date and the full name of the person booking. Rooms booked after April 4th will be subject to a different rate, so it is advisable that rooms are booked as soon as possible.

Hotel contact details: Mercure Sheffield St Paul’s Hotel and Spa, 119 Norfolk Street, Sheffield, S1 2JE, UK. Tel: 00 44 114 278 2000. E-mail: h6628@accor.com. Website: http://www.accorhotels.com/ and search for GB, and then Mercure Sheffield St Paul’s Hotel and Spa. The code quoted above will not work when booking via the website.

Meeting Topics
The meeting is intended to generate significant discussions about various topics associated with deep borehole disposal (DBD) of radioactive waste and will be focused around the following themes:
• Current status of DBD.
• R&D activities and challenges.
• Foreseeable progression of DBD.
• Future possibilities and applications of DBD.

Papers
This International Meeting will consist of keynote, invited and submitted presentations as listed on the preliminary programme below, which is now complete.

Key Dates
• First announcement – 21st May 2015.
• Second circular – 15th December 2015.
• Third circular – 3rd March 2016.
• Expressions of interest to present – Opened 15th December 2016, closed end January 2016.
• Start of registration – 4th January 2016.
• Notifications of acceptance to present – End of February 2016.
• Meeting dates – 13th to 15th June 2016.

Registration
All participants are required to register and pay by credit card. Meeting registration is conducted on-line via the web address below, and will be open from 4th January 2016. Registration cost is £250. After 1st April 2016 registration will increase to £300.

Meeting Information and Registration
Go to http://onlineshop.shef.ac.uk, then select Faculty of Engineering, then Materials Science and Engineering, then choose the meeting.

Meeting Organisers
Dr Karl Travis
Dr Nick Collier
Prof. Fergus Gibb

Contact Details
Dr Nick Collier, Department of Materials Science & Engineering, The University of Sheffield, Sir Robert Hadfield Building, Mappin St, Sheffield S1 3JD, UK.
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Preliminary Programme

Welcome and Purpose of Meeting
Karl Travis

Opening Address
Neil Hyatt – Head of Department, Materials Science and Engineering, The University of Sheffield.

Overall Keynote Presentation
An international perspective on deep borehole disposal of radioactive waste – Andrew Orrell.

Session 1 - DBD Concept and Current Status - Session Chair – Fergus Gibb.
• Keynote Item: An introduction to DBD and a review of concept status – Patrick Brady.
• Current status of the US Deep Borehole Field Test – Geoff Freeze – Invited talk.
• Site selection guidelines – Ernest Hardin – Invited talk.

Session 2 - Technical and Political Challenges - Session Chair – Neil Chapman.
• Keynote Item: Addressing technical challenges of Deep Borehole Disposal – Mary-Lou Zoback.
• Site characterisation for the Deep Borehole Field Test – Patrick Brady – Invited talk.
• Engineering challenges of deep large diameter borehole construction – John Beswick – Invited talk.
• Waste package handling and deployment – Ernest Hardin.
• Sealing deep borehole disposals of radioactive waste – Fergus Gibb.
• Techniques for sealing waste containers within deep boreholes – Nick Collier.
• Behaviour of cement in deep boreholes – Neil Milestone.

Session 3 – Candidate Wastes for DBD - Session Chair – Mary-Lou Zoback.
• Keynote Item: The potential use of DBD for spent fuel – Timothy Gunter.
• Potential use of DBD for commercial spent fuel – Michael Apted – Invited talk.
• DBD of plutonium – Frank von Hippel – Invited talk.
• Hanford Cs/Sr capsule overview – Laura Price.
• A design for DBD of the Hanford Cs/Sr capsules – Karl Travis.
• A safety case for DBD of Cs/Sr – Geoff Freeze.
• Spent fuel and vitrified waste as candidates for DBD – Kevin Hesketh – Invited talk.

Session 4 – DBD in National and Trans-national Programmes - Session Chair – Andrew Orrell.
• Keynote Item: The potential place of DBD in different types of national waste management programmes – Neil Chapman.
• Conceptual ideas on multi-barrier systems for repositories in deep wells – a German view on deep well repositories – Frank Schilling – Invited talk.
• Consideration of DBD in the UK – John Roberts – Invited talk.
• History and current situation regarding DBD in Sweden – Johan Swahn – Invited talk.
• Collisional orogeny in the Scandinavian Caledonides (COSC): Scientific investigations of the mountain belt by surface geophysics and core drilling to 2.5 km in central Sweden – Christopher Juhlin.
• Research status on Deep Borehole Disposal of high-level radioactive waste in Korea – Jongoul Lee.
• Scenario and strategy development options for spent nuclear fuel management in UAE – Philip Beeley.
• Further thought and comments – Andrew Orrell.

Session 5 – Summary and Meeting Outcome - Session Chair – Frank Schilling.
• Panel Discussion.
• Production of concluding statement on concept applicability.
• Formulation of guidelines and recommendations concerning the use of DBD in disposing of specific radioactive waste streams.