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missioning”

The 17th YCLF meeting on 25th November 2011 focussed on 'Nuclear Decommissioning'. The meeting was held in the Thoresby Room at the Leeds City Museum.

The Chair for the meeting was Dr Jamie Cutting of Chemtest who opened by noting the sheer scale of the current programme for decommissioning works at nuclear plants with an estimated budget of circa. £46 billion, scheduled to continue well into the next century.

Dr James Wilson of Quintessa began the meeting with an interesting comparison between assessing the risks to human health arising from radiological and chemical contaminated land. James began by explaining where radiological contaminated land sits within the current UK regulatory framework and noted no site had yet been classified as Part 2A based on radiological contamination – although the first may be just around the corner. The presentation then addressed the key similarities and differences between assessing risks from radiotoxic and chemotoxic substances and concluded that modelling the cumulative effects from radioactive substances probably has less uncertainties associated with it than the combinatorial effects from multiple chemotoxic substances acting through multiple pathways.

David Hall of Golders then gave an excellent presentation about the hydrogeological aspects of risk assessments at nuclear decommissioning sites. David outlined the very stringent requirements for health and safety and the difficulty with exploratory drilling due to the heavily developed nature of such sites. He explained the paramount importance of understanding the source of contamination and how nuclear fuel, fission products and activation products can be fingerprinted by their radioisotope composition. This aspect of hydrogeological risk assessment was neatly illustrated by considering the radioactive decay sequence for U-232 arising from reprocessed fuel. David closed by reiterating the importance of good conceptual site models, without which, even the most sophisticated predictive groundwater models will be no good.

After coffee, Wesley Wray from Boart Longyear gave a very useful discussion on the application of Rota-Sonic drilling methods and their use on nuclear and category red contaminated sites. Wesley began by explaining the principles behind the technology and describing the different types of rigs available. The quality of core recovery was well demonstrated through some great examples before moving on to a couple of interesting case studies. The stringent health and safety requirements at nuclear sites were again discussed (with an interesting request for a procedural risk assessment) highlighting some instances where this had led to innovative approaches. Wesley closed by dispelling some of the common myths surrounding the Rota-Sonic technique.

Our final presentation was from Dr Frank Wigley of URS Scott Wilson. Frank opened by describing some of the projects URS Scott Wilson had been involved with at Sellafield such as the Highly Active Liquid Effluent Facility (HALEF), describing some of the engineering challenges they faced, not least relating to waste minimisation. Frank then lead the audience through some examples of Site License Compliance and how they related to the phased approach of design and build at nuclear licensed sites. He concluded by presenting further examples of geo-environmental inputs into civil engineering projects that URS Scott Wilson had been involved with at the Sellafield site including the pile fuel cladding silo and B29 local sludge treatment plant.

YCLF steering group member Prof. Phil Morgan gave an introduction to the ADVOCATE project (Advancing Sustainable In Situ Remediation for Contaminated Land and Groundwater) outlining the objectives, work packages and programme. For further information please see www.theadvocateproject.eu or contact s.f.thornton@sheffield.ac.uk.

The refreshments for the meeting were sponsored by ERS Remediation.

Presentations will be made available to YCLF members through the YCLF website.

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Notes for editors:-

1. Further information on the presentations given at the technical meeting can be provided on request.
2. YCLF is grant supported by CO2Sense.