Across The Pond

A Quarterly Update on Joint UK NDA/US DOE Activities and Initiatives

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U.S. DEPARTMENT OF ENERGY

NDA Nuclear Decommissioning Authority

UK Expertise Sought to Help Address Hanford Challenges

At the Hanford site in southeastern Washington state, the U.S. Department of Energy, along with prime contractor Bechtel National Inc., is designing and building a major waste processing facility capable of both separating radioactive liquid waste and turning it into a stable, glass form suitable for permanent, safe disposal. The Waste Treatment & Immobilization Plant Project (WTP) covers about 65 acres on the Hanford Nuclear Reservation and will process and immobilize the majority of Hanford's 56 million gallons of radioactive and chemical waste, a byproduct of US defense plutonium production efforts during World War II and the Cold War era.

Initial design of WTP in the mid to late 1990's was completed by BNFL and was based partly on the technologies and experience in the major plants at Sellafield such as THORP. Since that time, the design has been refined and expanded. Some technical challenges still remain, but are being addressed by a number of participants including DOE contractors and the Department's National Laboratories. These challenges include erosion/corrosion, , the ability to identify and correct problems in non-accessible black cells, pulse jet mixing efficacy, and resolution of black cell concerns.

To help address these challenges, DOE and the WTP contractor are considering support from a number of UK organizations such as the UK National Nuclear Laboratory, Sellafield Ltd, NuVision Engineering and BHR Group. These entities have been instrumental in the design, construction, testing, demonstration and operation of similar facilities at Sellafield. There have been a number of discussions between the UK organizations and DOE/Bechtel and plans are currently underway to potentially formalize the relationships to ensure UK experience and lessons learned are brought to bear on the WTP technical challenges.

US DOE - Developed Decon Gel Finds Application at Sellafield

During the period 2009 to 2011, the US Dept. of Energy Technology Development Program invested more than $2.5M in the development, scale up and application of a novel decontamination medium known as "Decon Gel". The gel, which was originally developed by CBI Polymers in Honolulu, Hawaii for the U.S. Air Force to use on special mission aircraft designed for air sampling, was further developed for application at both DOE cleanup sites including Oak Ridge and West Valley. More recently, and with the encouragement of Andy Szilagyi (Director, Office of Deactivation and Decommissioning and Facility Engineering) at DOE HQ, the product has been used at the UK's Sellafield site to support decommissioning activities at various buildings. Work has included decontamination on multiple substrates such as tarmac and stainless steel and has demonstrated its ability to compete with other "standard" decontamination agents. It is hoped that Decon Gel will become more widely used across UK plants and will help support the UK NDA in its mission to achieve safe, cost effective cleanup of its estate.

UK Office of Nuclear Regulation visits DOE HQ and DOE Hanford

In early September, Ryan Maitland, a Principal Inspector from the UK Office of Nuclear Regulation visited both DOE Headquarters in Washington DC and the Hanford site to gain a better understanding of the respective regulatory frameworks in place within the context of increased transatlantic partnering in decommissioning and site closure contracts. Discussions emphasized the fact that there is much synergy between the agencies and lessons to be learned through closer collaboration and more frequent discussion and resulted in a consensus to potentially develop an Information Exchange Agreement between the organizations in the future. The visit confirmed that;

- Self regulation is an essential component of both cleanup programs. The reducing resource allocation to notionally lower hazard sites coupled with a continuing need to demonstrate regulatory confidence is an area of mutual interest.
- Both cleanup programs have similar projects involving waste recovery and conditioning techniques, care & maintenance and asset management. Exchange of knowledge about these efforts will serve to enhance regulatory intelligence, and the mutual ability to employ good practices against those observed elsewhere.
- Possible future joint collaboration will help both parties develop a clear and rational philosophy for regulating sites and facilities whose hazard profile is rapidly reducing.
- Safety culture is one of the most significant components of safe but timely hazard reduction across UK and US sites given that engineering rigor and defense-in-depth are often constrained by aging facilities that were not designed with decommissioning in mind.

Following his week-long visit, Maitland said "Undertaking further targeted collaboration will equip both the UK and the US programs with a more clear evaluation of regulatory effectiveness and proportionality in an industry and society that demands accelerated, but value-for-money, decommissioning".

Head of US Cleanup Program visits Sellafield and Dounreay

In late September, David Huizenga (Senior Policy Advisor for Environmental Management) and Dave Moody (Manager, Savannah River Site, SRS), visited the NDA and its contractors at Sellafield to identify expertise and experience which can support the DOE EM program. One of the primary focal points of discussion was how UK experience could be applied to help address the current mixing, erosion, corrosion, instrumentation and monitoring challenges at the Waste Treatment Plant (WTP) in Hanford. The "black cell" design concept and the use of Power Fluidic Pulse Jet Mixer technology on which WTP is based, has a lengthy and successful track record at Sellafield on a number of plants and so there is a wealth of experience and past performance available which can support DOE. (See related story)

The visitors then traveled to Dounreay in the north of Scotland, the NDA research reactor site with fuel production and processing facilities, where they were joined by Jay Rhoderick (Associate Deputy Assistant Secretary for Tank Waste and Nuclear Material), Gary DeLeon (Director for Nuclear Materials Disposition) and Chuck Messick (Office of Global Threat Reduction, NA-21). The team met with NDA officials and their contractors to discuss possible acceptance and disposition at SRS of nuclear materials stored at Dounreay in support of NNSA's Global Threat Reduction Initiative.

Some of the team also took the opportunity to tour the Oceanic Pintail, one of the purpose-built nuclear transport ships involved in GTRI transports, operated by International Nuclear Services (INS), a wholly owned subsidiary of the NDA.

At the conclusion of the visit, Mr. Huizenga said "I am pleased that we were able to engage NDA and its contractors so effectively on multiple topics and look forward to continued collaboration that will help us improve EM's program and successfully and safely complete EM's environmental cleanup".

Two of INS's nuclear transport ships moored at its terminal in Barrow, Cumbria

Successful US/UK Contracting Summit Hosted by UK NDA

In September, Jack Surash (Deputy Assistant Secretary for Acquisition & Project Management, EM) and Jim Owendoff (Senior Policy Advisor, EM) visited the UK NDA at its headquarters in Sellafield UK as well as its field location at Harwell to discuss contracting strategies, optimizing return on investment and partnering. The week-long visit included detailed tours of the Sellafield site and engaged Senior Level representation from NDA including John Clarke (CEO), Sean Balmer (Commercial Director), Adrian Simper (Strategy Director), Mark Steele (Head of Sellafield) and Mark Lesinski (COO). The visit, organized by Ron Gorham NDA Head of Supply Chain Optimization, was a great success with a number of key areas of collaboration identified for further work.

Front Row: Jim Owendoff (Snr. Policy Advisor DOE EM), John Clarke (CEO UKNDA), Jack Surash (Dep. Asst. Secretary for Acquisition and Project Management DOE EM)

Back row: Richard Mrowicki, (Head of Japanese MOX Program), Sean Balmer (Commercial Director, UK NDA)

West Valley and Hanford host NDA and Dounreay Site Restoration Ltd. Lessons Learned Exercise

In September, a group comprising Dounreay Site Restoration Ltd (DSRL) and UK NDA representatives spent a week in the US visiting their DOE and Contractor counterparts to develop an understanding of critical environmental, safety, regulatory and programmatic issues in the DOE and how they compare and contrast with those in the UK. The group, led by Dyan Foss, DSRL Deputy Director also included George Sinclair (DSRL Waste Project), John Sibbald (DSRL Reactors Project), Alan Scullion (DSRL Director of Assurance), others from DSRL and Steve Fisher, Environment and Waste Policy Manager at NDA. The group spent two days at the DOE West Valley site in Western New York where they discussed a number of topics including regulatory frameworks, establishment of cleanup criteria, long term stewardship and workforce transitioning. The group then headed 3000 miles west to the DOE Hanford site where they met with the representatives from DOE Richland Operations Office, CH2M Hill Plateau Remediation Company (CHPRC) and Washington Closure Hanford (WCH) to discuss options for maintaining progress on site management, safety, decommissioning, waste practices and environmental remediation while facilitating changes to drive improvements to programs.

Steve Fisher was extremely pleased and excited about the visit. "The issues we face in the US and UK cleanup programs are largely similar even though the scale of some of the challenges in the US is much larger than I had imagined" said Steve "Visits such as these are very useful to help us all appreciate how our respective cleanup programs can benefit by building on one another's strengths and experiences".

For further information please contact
Rosa Elmetti– US DOE, 1000 Independence Ave, SW, Washington DC, 20585. rosa.elmetti@em.doe.gov Tel: (202) 586 7652
John Mathieson– UK NDA, Curie Avenue, Harwell, Didcot, Oxon OX11 0RH. John.Mathieson@nda.gov.uk Tel: +44 (0) 1925 802886
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