



Update on US DOE / UK NDA Bilateral Activities

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**Waste Management Symposium
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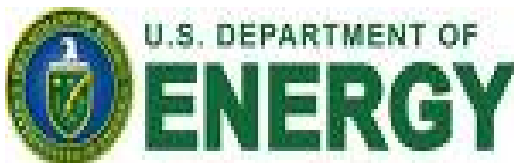
Focal Points to Date

- **Because of the similarities in the programs, there are numerous possibilities for collaboration**
- **Early focus was on a relatively small number of topic areas which offer the greatest potential benefit to both parties**
 - **Spent fuel management**
 - Aging facilities management
 - Non standard fuels disposition
 - Fuel drying technologies and dry storage
 - **Plutonium management**
 - **D&D approaches and technologies**
 - Decontamination technologies e.g. Decon Gel
 - α -plant decommissioning
 - In situ decommissioning
 - Sodium Passivation



Focal Points to Date

- **Waste Management and Stabilization**
 - Thermal Treatment Technologies
 - Glass chemistry/formulation
 - Tank corrosion and structural integrity
 - Ion exchange resin disposal
 - Sludge retrieval
- **Other**
 - Supply chain management
 - Contracting/Partnering approaches
 - Site security approaches and technologies



Recent and Current Topic Areas

- Plutonium Management
 - 3 workshops held (Sept 2010, April 2011, Oct 2013)
 - DOE, NDA, SRNL, LANL, NNL, Sellafield Ltd, Univ of Manchester
 - Joint programs on SCC of canisters ongoing and additional scope being formulated
 - US experimental data shared to support UK model development
 - Non intrusive monitoring emerging as new area
 - Personnel exchanges in discussion
 - UK participation in US MIS meetings



Recent and Current Topic Areas

- Waste Treatment Plant
 - “Best of British” team assembled
 - Supporting BNI and DOE in areas including PJM performance, erosion/corrosion, black cell operation and maintenance, inspection technologies
 - Participated in Executive Review Board of HLW design
 - New areas emerging
 - Control system, ventilation design, large scale testing



Recent and Current Topic Areas

- Alpha contaminated plant D&D
 - Exchanges of experiences and lessons learned on Rocky Flats and buildings at Sellafield
 - UK supported DOE SR in development of risk reduction implementation plan for B 235-F based on their experiences at Sellafield
 - New areas emerging
 - Waste characterization of structures
 - Decontamination of structures (esp brickwork)
 - Remote size reduction
 - Hot working practices



Recent and Current Topic Areas

- Orphan/Problematic Waste Treatment and Disposition
 - NDA report on applicability of treatment technology to orphan waste streams shared with DOE
 - DOE commissioned similar report for their streams
 - Comparing and contrasting to identify overlaps and complementarities
 - NDA developing a National Program and has solicited DOE input to the direction of that program
 - Mobile plant feasibility and applicability
 - Sealed source management and its applicability to orphan wastes
 - Mercury treatment and disposal
 - Use of polymeric encapsulants
 - Disposition of strippable coatings and decontamination agents
 - Development of a UK WIMS database
 - Continuous dialogue between key players in DOE and NDA



Recent and Current Topic Areas

- Transition to Operations
 - Multiple new plants being brought onstream in next 3-10 years in UK, US and Canada
 - IWTU, SWPF, WTP, SPRS, SPP-1, Evap D, FPS
 - Limited recent experience across the organizations
 - Concern over a number of transition issues
 - Quality control
 - Resources
 - Roles and responsibilities
 - ORR protocols
 - O&M strategies
 - Records management
 - Startup and Commissioning Meeting April 29-May 1
 - Share current approaches and issues and develop subgroups



Recent and Current Topic Areas

- Remote Systems for D&D
 - Review current and planned remote systems
 - Cross reference these with needs in DOE and NDA
 - Identify overlaps and gaps and therein where additional funding should be directed
 - Developing “Robot Challenge” and “COTS integration”
- DISTINCTIVE R&D
 - \$13M over 4 years in AGCR, Plutonium oxides, Legacy Ponds and Silos, Infrastructure Management
 - DOE participating in task definition and development and regular update meetings



Recent and Current Topic Areas

- Asbestos Abatement
 - NDA has been supporting DOE in its efforts to disposition transite panels in the most cost-effective and safe manner
- Cementation of SPRU wastes
 - DOE consulted with NDA on their lessons learned with grouting of large volumes of PUREX-like wastes to identify operational issues
 - NDA was able to confirm that DOE approach was fit-for-purpose



Recent and Current Topic Areas

- Site Security
 - Physical and technological approaches and issues
 - Visit to OR and SRS planned October 2013
 - Cancelled due to Government shutdown
- Benchmarking
 - Reciprocal visits and discussions between NDA and DOE SR
 - Project cost and schedule



Miscellaneous Activities

- Senior level exchange visits
 - DOE to Sellafield
 - DOE Management presented at UK Decommissioning Conference
 - NDA to DOE sites (SR, RL, HQ)
- DOE - funded projects on UK technologies
 - Arvia : Organics destruction
 - FORTIS : 3D Sonar for Sludge Mapping
 - NNL : Cryograb for Waste Retrieval
 - NNL : Misting

Observations

- **It is a time-consuming, labor intensive process**
 - **2-3 years to make any significant progress**
 - **Takes time for each side to really understand the similarities and differences between their respective programs**
- **Topic areas start very general, then become a little more specific and then very specific**
 - **Each level takes a similar amount of time and effort to develop and to build the relationships as they involve ‘new’ participants**



Observations

- **Greatest success is achieved when there is a clear “driving force” on both sides**
- **Need a dedicated, committed protagonist on both sides**
- **Generally, participation is an “in addition to” assignment**
- **Commercial sensitivities and lack of available funding can impede progress**



Summary of Results

- **Excellent progress continues**
- **Joint R&D activities are underway and are expanding through initiatives such as the **DISTINCTIVE** program**
- **Leveraged funded programs have been developed and have demonstrated tangible, financial benefits to both parties**
- **Numerous information exchange activities have been completed or are underway in multiple topic areas**
- **Strong “Communities of Practice” forming across the board at all levels**
 - **DOE, NDA**
 - **Prime contractors – Sellafield Ltd, BNI,**
 - **National Labs – NNL, INL, SRNL, PNNL**
 - **Universities – Sheffield, Manchester, Leeds**

