Savannah River National Laboratory™

OPERATED BY SAVANNAH RIVER NUCLEAR SOLUTIONS

We put science to work.™

UK and USA Partnering Across the Pond

Technology Sharing

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Savannah River National Laboratory
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Panel 110
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Savannah River NUCLEAR SOLUTIONS℠

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SRNL at a Glance

~ 832 Staff

~ $214M (FY15 projected)

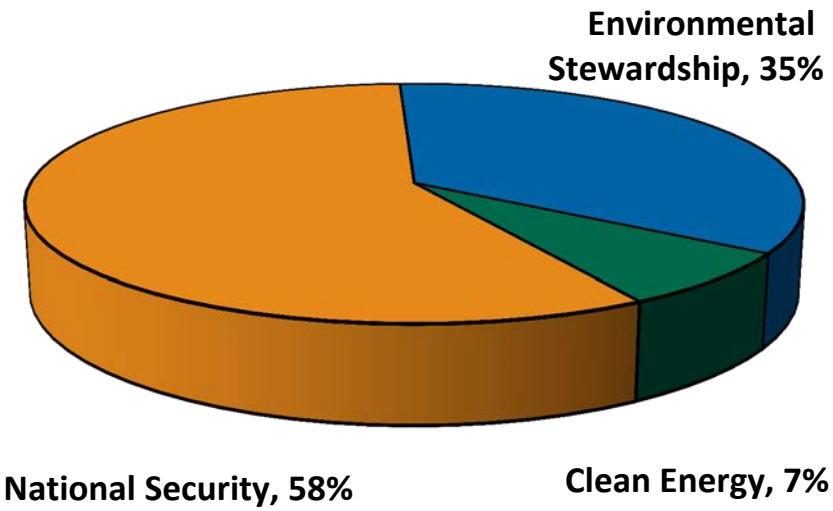
~ 300 Discrete Work Activities

Multi-Program Laboratory

> 65% of funding from non-SRS customers

Core Nuclear Capabilities

- Environmental Remediation and Risk Reduction
- Nuclear Materials Processing and Disposition
- Nuclear Detection, Characterization and Assessments
- Gas Processing, Storage and Transfer Systems



SRNL FY14 Execution

Safest National Laboratory

Technical Collaboration – A Strong History

- The UK shares similar waste cleanup and fuel cycle challenges with the USA
  - Both technical and programmatic with the USA

- There has been a long history of processing and waste management collaborations
  - Waste retrieval and characterization
  - Waste form development and disposal
  - Plutonium processing and disposition
  - Fuel processing

- Collaboration is the key to *INNOVATION*

(NDA and DOE/SRS Participants in Plutonium Management Information Exchange Workshop — UK, Oct. 2013)

Waste Forms – Example of Collaboration

- Technical collaborations have been strong in the area of waste forms
  - Completed several technical exchanges (site visits and sharing of technical reports and information)
    - *Glass chemistry*
    - *Thermal treatment technologies*
    - *Glass corrosion*
    - *Technology selection processes*
    - *Technology readiness assessments*
  - Sulfur solubility models for high level waste glasses
  - Fundamental understanding of nuclear waste glass corrosion
  - Student exchanges related to waste glass formulation, processing, and chemical durability topics

Advisory Roles

- DISTINCTIVE (Decommissioning, Immobilisation and STorage solutIons for NuClear wasTe InVEntories) is a consortium of 10 UK universities performing research to support nuclear waste cleanup activities in the UK
- SRNL and PNNL representatives are members of the International Advisory Group for DISTINCTIVE
  - Allows DOE unique access to research approaches, information and data regarding the projects
  - International Advisory Group can help set the direction of the research to address world-wide needs in these areas including needs in the US.

SRNL and NNL: Building off of Technical Strengths

- NNL visits to SRNL in 2012 and 2014
  - Learning each others capabilities
- Partnering on proposals to EM International Program
  - NNL waste retrieval technology (Cryograb)
  - Waste glass formulation
- DOE-SR/SRNL visit to UK (Sept. 2014)
  - SRNL and NNL agreed to pursue collaboration in key technical areas of mutual interest:
    - *Enterprise modeling - technical basis for cleanup*
    - *Robotics/autonomous devices for characterization and cleanup in difficult environments*
    - *Characterization and disposition approaches for "orphaned" nuclear materials*

Collaboration in the Future

- Networking
  - Sharing of ideas to promote innovation
  - New opportunities and knowledge transfer for the next generation of engineers and scientists
  - Potential exchange of personnel to foster this teaming
    - *SRNL has successfully hosted personnel from AWE in the past*
- Focus on areas of complementary capabilities
  - Build off of capabilities, don't compete
- Pursue next steps with NNL
  - Formalize partnership through joint non-disclosure agreement
  - Establish integrated technical teams to define the benefits and opportunities