



U.S. DEPARTMENT OF
ENERGY

Waste Management Symposia 2014

Panel Session #092: UK/USA Partnering Across the Pond



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March 5, 2014

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Strong History of National Service and Success

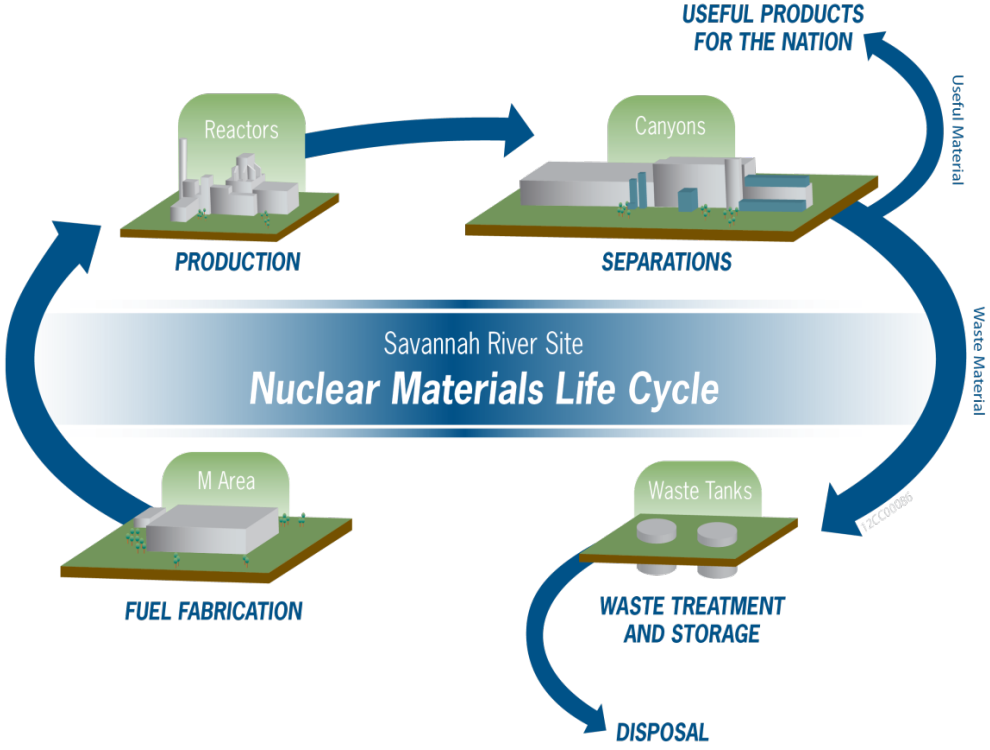


Produce and recover nuclear materials



Production Years

- Five reactors
- Two chemical separations plants
- Heavy water extraction plant
- Nuclear fuel and target fabrication facility
- Waste management facilities
- Laboratory/Analytical facilities
- Produced 36 metric tons of plutonium from 1953-1988
- End of Cold War meant a whole different philosophy and approach to the nuclear arsenal



SRS Skilled Workforce and Budget

Total Site Workforce = 10,175 *(December 2013)*

DOE: Savannah River Operations Office

NNSA: Savannah River Field Office

Office of Site Engineering and Construction Management

U.S. Forest Service

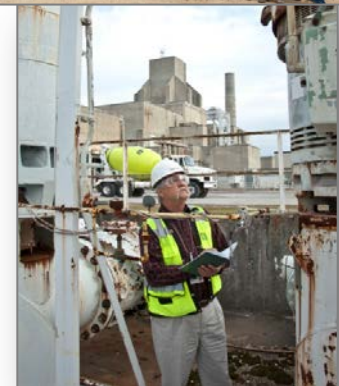
U.S. Nuclear Regulatory Commission

U.S. Army Corps of Engineers

Contractors:

- **Savannah River Nuclear Solutions**
 - Management & Operations
 - Savannah River National Laboratory (EM National Laboratory)
- **Savannah River Remediation:** Liquid Waste Operations
- **Parsons:** Salt Waste Processing Facility construction and operations
- **Ameresco:** Biomass Cogeneration Plant
- **Wackenhut:** Security
- **Shaw AREVA:** Mixed Oxide Fuel Fabrication Facility construction and operations
- **University of Georgia:** Savannah River Ecology Laboratory

FY 2014 SRS Cleanup Budget FY14 = \$1.2B



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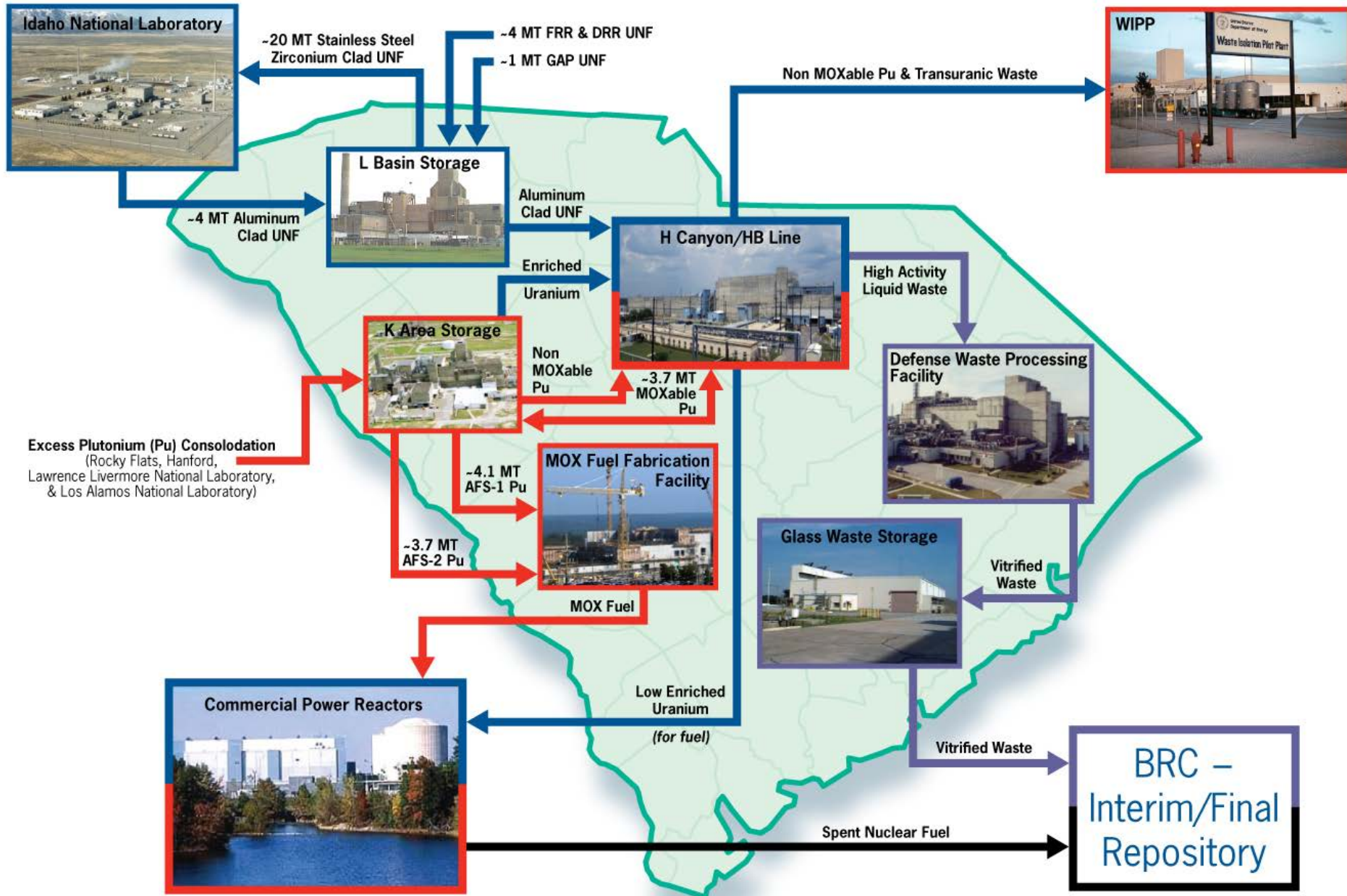
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Vital Missions of SRS

- Support **environmental stewardship** priorities to safely and efficiently clean up the environmental legacy, reduce risk and protect public health and the environment
- Support **national security** missions with key role in meeting nonproliferations objections
- Support **clean energy** goals to provide clean, reliable energy sources, reduce greenhouse gases, and enhance national security



SRS: An Integrated Nuclear Materials Site



Liquid Waste Risk Reduction Progress

Waste Disposition

- Defense Waste Processing Facility (DWPF) canister production total to date: 3,773
- Increasing salt waste treatment capacity with enhanced ARP/MCU throughput (3-4Mgal/year processing rate)
- High-Level Waste Integration between Savannah River and other DOE sites agencies



Tank Closure Program

- Six tanks closed – next targeted for 2015
- Outstanding collaborations and integration with regulators

Salt Waste Processing Facility

- Physical construction more than 70% complete
- Will treat majority of stored tank waste (salt)



SRS Nuclear Knowledge at Work for the Nation

Clean Energy Systems

- Completed 1st year operations of Biomass Cogeneration Facility
 - Reducing greenhouse gas emissions by more than 100,000 tons a year
 - Cutting energy costs with steam from renewable energy sources



Savannah River National Laboratory

- SRNL technical expertise, innovative technologies and applications deployed throughout the world
 - Nuclear Fuels Cycle Research & Development
 - Space Exploration
 - Hydrogen Production & Storage
 - Radiochemical Processing
 - Environmental Risk Reduction
 - Tritium Technology
 - National Security Threat Reduction
 - 10 U.S. patents in 2013

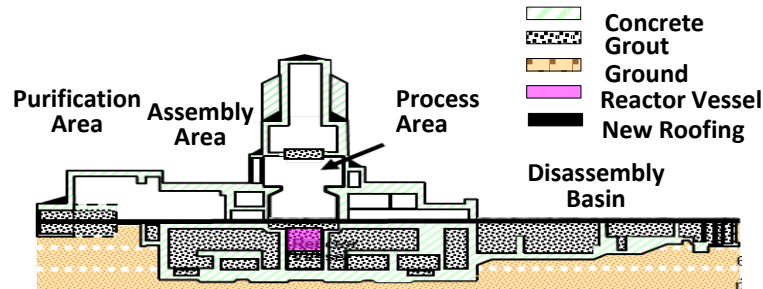
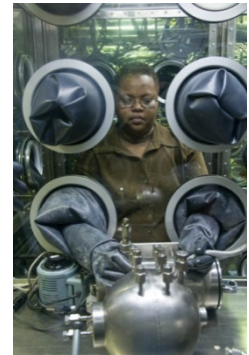


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DOE & NDA Sellafield: Partnering Paying Off

- **Personnel exchanges** (Individual and Corporate benefits)
- **Information exchange** on technical issues/challenges and sharing **lessons learned** on **best practices** and
 - Waste characterization
 - Nuclear materials receipts/disposition
 - Remote Operations (mock-ups)
 - Cleanup progress: In-Situ Decommissioning, Innovative Groundwater Cleanup, Area Completion Strategy



P Reactor after ISD
In-Situ Decommissioning

DOE & NDA Sellafield: Partnering Paying Off, contd

Information Exchange / Best Practices: SRS Contracts Management

– Contractor Performance Evaluation (Annual Reporting Periods)

- Contract Performance Areas
- Available Fee
- Performance Based Management and Oversight
- Performance Based Incentives
 - Provisional Payment of Incentive Fee
 - Conditional Payment of Fee, Profit, and Other Incentives
- Developing Mission Based Incentives
 - Fee Modeling
- Multiple Contract Types



DOE & NDA Sellafield: Partnering Paying Off, contd

Information Exchange / Best Practices: (DOE Direct) Regulatory Interface

SRS Regulators

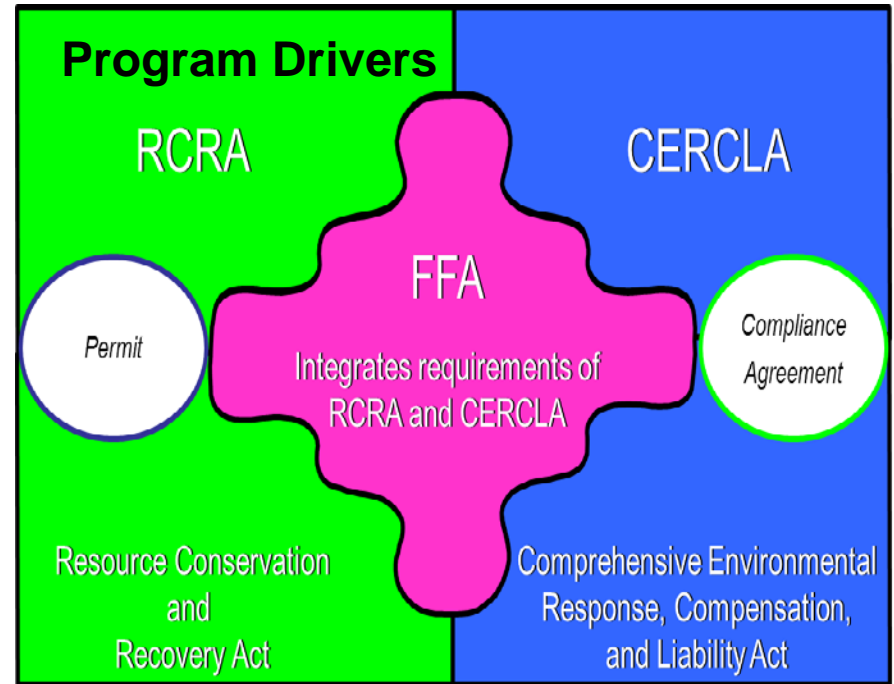
- South Carolina Department of Health & Environmental Control
- Environmental Protection Agency, Region IV

Results of Successful Collaborations

- Area Completion Strategy
- Tank Closure Program

Benefits and Lessons Learned

- Communicate early and often
- Strong relationship with regulators critical to mission success
- Continued deployment of effective, cost-effective technologies is a must
- Stakeholder involvement improves cleanup decisions

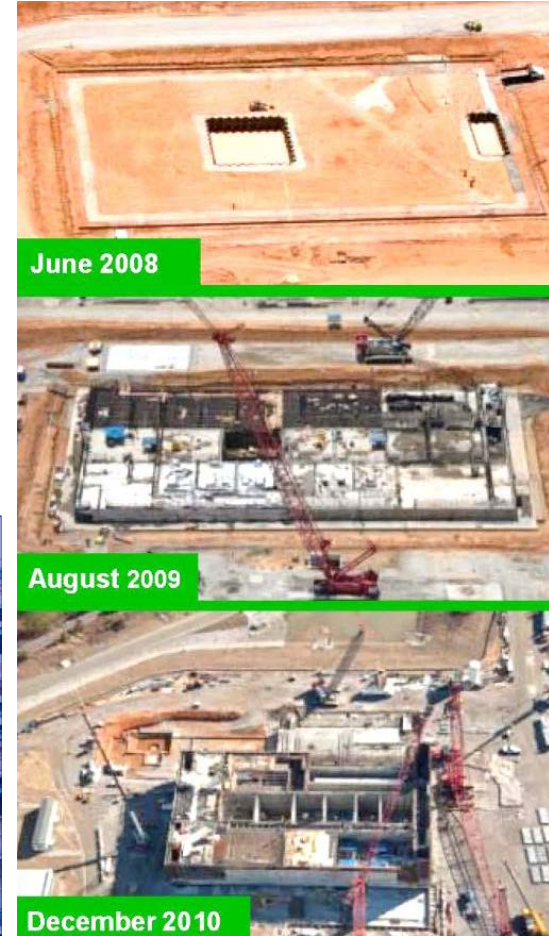


DOE & NDA Sellafield: Partnering Paying Off, contd

Information Exchange / Best Practices: Major Construction Project Deliverables

SRS Salt Waste Processing Facility

- New seismic design instituted
- NQA -1 Vendors – Large ASME Vessels
- Pilot testing/process demonstration capability
- Skilled Craft
- Relations with Regulators



DOE & NDA Sellafield: Teaming for Continued Progress

- Develop formal partnership between Savannah River National Laboratory and the National Nuclear Laboratory
 - Share one-of-a-kind R&D and technologies
 - Grouting formulations for future cleanup/decommissioning efforts
- Build on staff exchange program
- Continue to share ideas on doing business better and smarter
- Continue joint industry/government collaborations to advance joint projects and accomplish cleanup and risk reduction goals

