

Global nuclear waste management: past, present, and future

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AECOM core values:

People.

The expertise, passion and thought leadership of our talented people around the world make our success possible. We respect and encourage our people's ideas, diversity and cultures.

Clients.

We are committed to our clients and to setting industry standards for service and delivery. We take ownership for solving our clients' problems and anticipating new opportunities.

Excellence.

We believe in delivering unequivocal excellence in everything that we do.

Integrity.

We must always maintain our commitment to acting ethically and with integrity — in all that we do, every day of the year.

Safety.

We are a company that puts safety first. We are all accountable for keeping ourselves and our colleagues safe, and for delivering work safely to our clients.

Innovation.

We differentiate our company by challenging ourselves to look for new and better ways to deliver our expertise through innovative solutions that enable each client to realize its vision.

\$19.1 B	Revenues
100,000	Employees
150	Countries
Top 150	Among Fortune 500
#1	Design firm in the world

Globally, the government agencies charged with nuclear waste management deserve kudos . . .



Canadian Nuclear
Laboratories

Laboratoires Nucléaires
Canadiens



...and
many more.

- Established / establishing nuclear waste management contracts that were/are fit for purpose
- Transitioned from M&O contracts to performance-based contracts
- Required contractors to shoulder more risk for known conditions
- Properly incentivized contractors to complete work on time and within budget and to achieve efficiencies

Old models vs. revised models . . .

Key Areas	Old Contracting Models	Revised Contracting Models
Contract Type	M&O	Performance-based
Risk	Government shoulders all risk	Substantial risk transferred to contractors
Incentivization	No incentives	Proper incentives
Baseline Costs	Up	Down
Pricing	Gold-plated	Aggressive
Fees	4-6%	0-14%

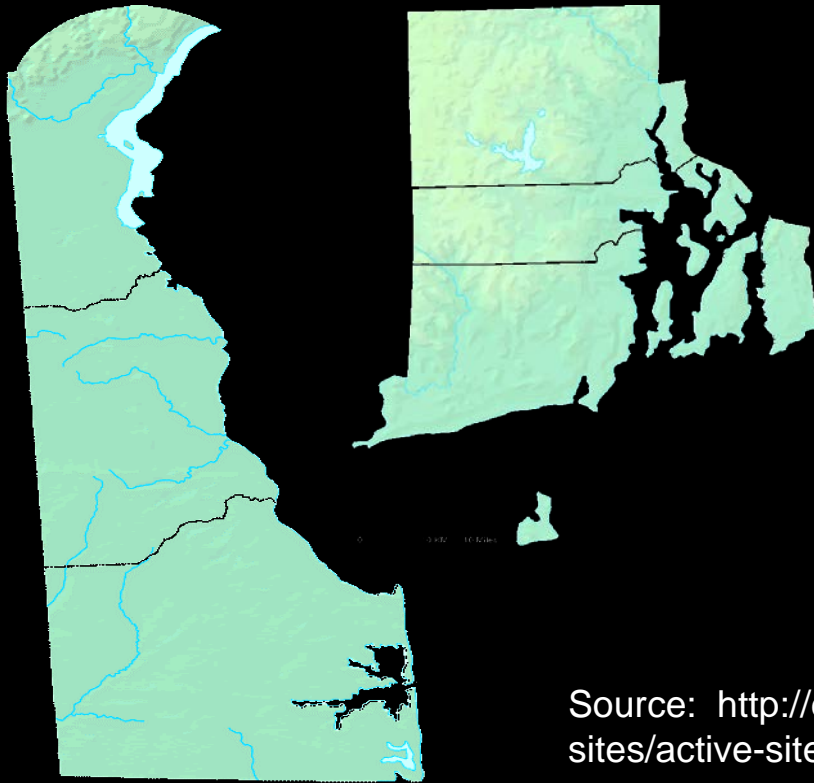
And nuclear waste management contractors deserve kudos . . .

- Many successfully transitioned from M&O work to cleanup work
- Making massive strides in cleaning up / managing nuclear waste

<p>3M ABS Consulting, Inc. Advanced Technologies and Laboratories Int'l AECOM Alliance for Sustainable Energy, LLC (NREL) American DND, Inc. AnovaWorks, PLLC ARES Corporation AREVA Federal Services LLC Aspen Resources Limited, Inc. Babcock & Wilcox Technical Services Group Bechtel Group, Inc. Bechtel Waste Treatment Plant Booz Allen Hamilton Boston Government Services, LLC Burns & McDonnell Engineering CB&I Federal Services Centerra Group, LLC CH2M Hill, Inc. CH2MHILL B&W West Valley, LLC CH2MHILL Plateau Remediation Company Colleague Consulting LLC</p>	<p>Consolidated Nuclear Security, LLC Container Products Corporation Dade Moeller & Associates DevonWay Enercon Federal Services EnergySolutions, LLC ESI International Fluor B&W Portsmouth LLC Fluor Federal Petroleum Operations Fluor Federal Services Greenberry Fabrication Honeywell FM&T, LLC HukariAscendent Humphreys & Associates, Inc. I.C.E. Service Group, Inc. Jacobs Engineering Group Kurion, Inc. L&L Associates, Inc. LATA Environmental Services of Kentucky Lockheed Martin Corporation Los Alamos Technical Associates, Inc. McCarthy Building Companies, Inc.</p>	<p>MCR Federal, LLC Merrick & Company MHF Services Mission Support Alliance, LLC National Security Technologies Navarro Research and Engineering, Inc. Navarro-Interra, LLC Neptune and Company, Inc. New World Environmental, Inc. Newport News Shipbuilding n-Link Corporation North Wind Group Northrop Grumman Information Systems Nuclear Waste Partnership LLC Oak Ridge Associated Universities PacTec, Inc. Parsons Brinckerhoff Parsons Corporation Perma-Fix Environmental Services Portage, Inc. Pro2Serve Project Time & Cost, LLC Savannah River Nuclear Solutions Savannah River Remediation LLC Schneider Electric</p>	<p>Securiguard, Inc. Spectra Tech, Inc. Strategic Management Solutions, LLC Strategic Packaging Systems, LLC Tecolote Research, Inc. TerranearPMC, LLC The Whitestone Group, Inc. Triple Canopy Inc. UT-Battelle Visionary Solutions, LLC Washington Closure Hanford Washington River Protection Solutions Waste Control Specialists LLC Wastren Advantage, Inc. Wastren-EnergX Mission Support, LLC</p> <p>Plus many, many more.</p>
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Together, we have achieved what many once thought was impossible . . .

In the US . . .



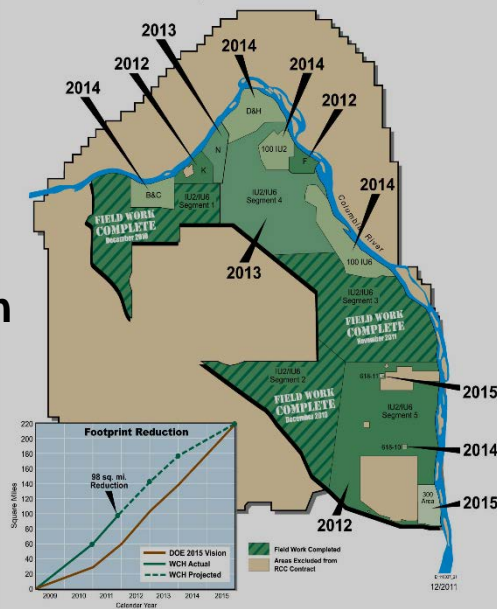
- The total area of DOE-EM sites cleaned up since 1989 equals **the size of Delaware and Rhode Island combined**
- **90%** reduction in square miles
- **84%** reduction in number of sites
- **69%** reduction in states with DOE-EM cleanup sites

Source: <http://energy.gov/em/cleanup-sites/active-sites-additional-information>

Recent successes in the US . . .



**River
Corridor
Closure
Project:
nearing
completion**

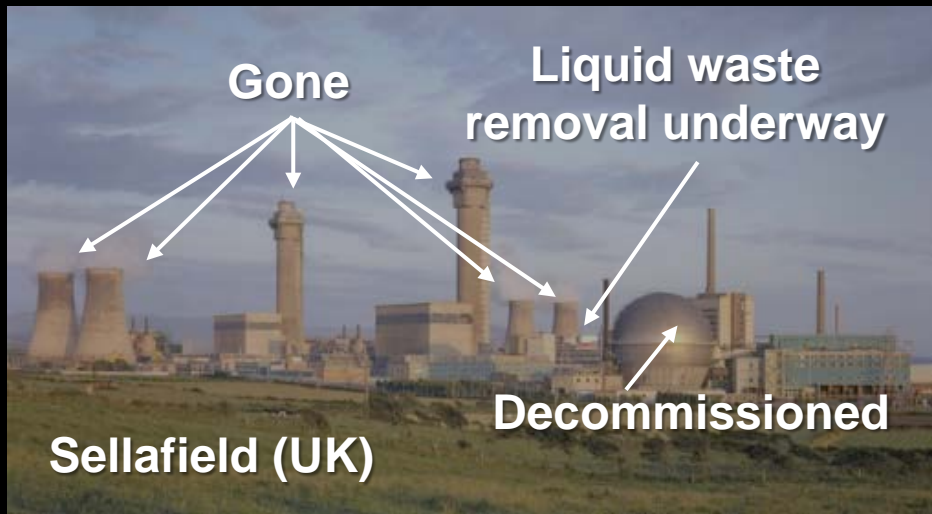


DWPF:

- Making glass
- 3,955 canisters produced
- 6 HLW tanks closed



Successes in other countries . . .



Question: How many of you in this room have been involved in one or more of this efforts?



A show of hands, please.

**We have accomplished much,
but there is still much to do . . .**

. . . and now for the reality check . . .

The easy work is all done.

What remains is the most difficult.



Globally:

- Tens of millions of gallons of liquid waste to eliminate
- Hundreds of liquid waste tanks to close
- Tens of thousands of cubic meters of HLW to package/disposition
- Work with some of the most hazardous substances known to man
- Highest risk / unknown risk
- First-of-its-kind construction, technology, work processes
- Open deep-underground repositories
- Reopen WIPP

To accomplish this difficult work, we need to focus on . . .

Focus Area	Action
Safety & Ethics	<ul style="list-style-type: none"> • Maintain our commitment to put safety first and to act ethically and with integrity
Contracts	<ul style="list-style-type: none"> • Ensure contract structure is right for this new phase (difficult work) • Balance risk / reward, ensuring adequate competition
Project Management	<ul style="list-style-type: none"> • Continue to strengthen project management to deliver projects safely, on schedule, within budget, and with high quality
Innovation	<ul style="list-style-type: none"> • Develop new technologies and processes to deal with the difficult waste forms such as liquid waste • Focus on achieving economies of scale
Quality Assurance	<ul style="list-style-type: none"> • Apply the same rigor of conduct of operations to QA
Supply Chain	<ul style="list-style-type: none"> • Partner with subcontractors to make the supply chain more agile
Regulators	<ul style="list-style-type: none"> • Bring regulators to the table to help establish priorities in this era of flat funding
Stakeholders	<ul style="list-style-type: none"> • Effectively manage and meet stakeholder expectations

Together we can achieve our end-state visions . . .



A call to action . . .

- We all need to step up to get this done
- I know these words are hollow if I don't walk the talk
- I have chartered 9 teams of my best-and-brightest employees to work on solutions for the challenges presented here
- Also, we are partnering with many of your organizations to tackle the difficult work ahead
- *“Our purpose - to positively impact lives, transform communities and make the world a better place.”*
 - Mike Burke, CEO and Chairman of the Board, AECOM

Thank You