



**Savannah River
National Laboratory™**

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We put science to work.™

Innovation for EM Mission Success

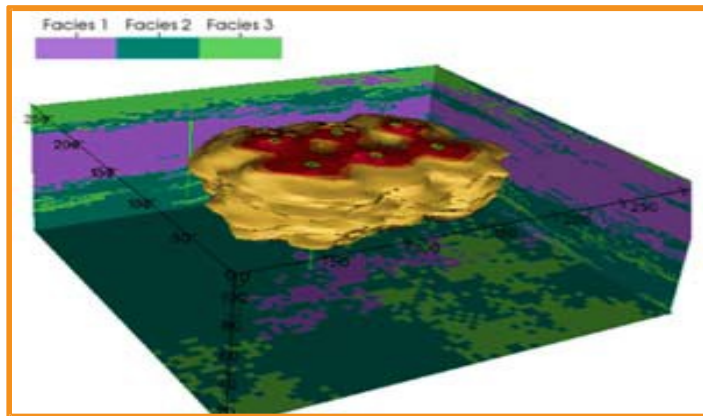
Dr. Terry Michalske
Laboratory Director

*U.S. DOE Cleanup Workshop
September 29, 2015*



Innovation is Important to EM Success

Billions Saved and Years Off Baseline Schedule



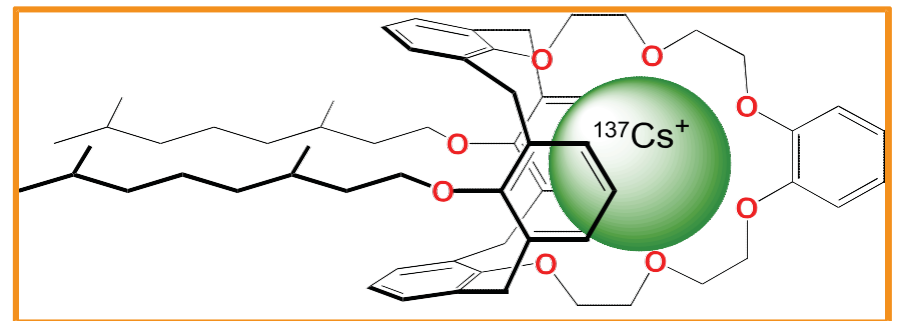
High Level Waste and Legacy Materials

Challenges

- 80+ million gallons liquid radioactive waste stored in degrading underground tanks
- Large waste processing facilities take decades to design and build
- Many construction projects have multi-year delays and substantial cost overruns

Desired Outcomes

- Reduce capital and life-cycle costs
- Decrease plant footprint
- Reduce chemical and criticality risks
- Increase flexibility for process upgrades/changes



Remediation of Soil, Groundwater, and Contaminated Facilities

Challenges

- Cleanup needed of approximately 100 Cold War legacy groundwater plumes and over 1000 contaminated facilities
- Limits on disposal records, difficulties in analysis, problems with modeling
- Facility deterioration limits worker access

Desired Outcomes

- Reduce worker exposure
- Minimize secondary waste streams
- Improve operating efficiencies
- Reduce long-term operating costs



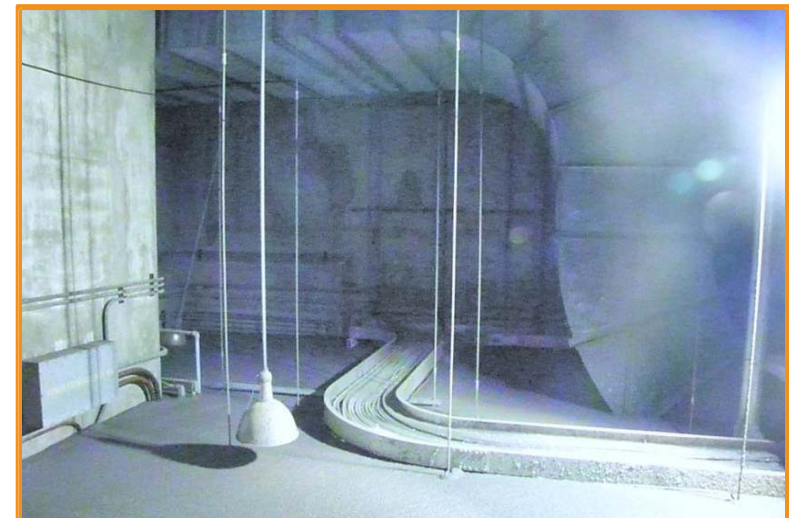
Assessment of Long-term Effectiveness

Challenges

- Hundreds of individual remedies across Complex
- Extensive characterization and monitoring required to assess remedy effectiveness
- Decades-long monitoring and assessment required
- Thousands of wells and hundreds of locations require assessment and monitoring

Desired Outcomes

- Reduce worker exposure
- Reduce need for sampling, sample transport, and assessment
- Improve remedy evaluation and selection
- Increase stakeholder confidence



EM Can Leverage Wide Range of Demonstrated Technologies

