

The background of the slide features a repeating pattern of the official seal of the United States Department of Energy. Each seal is circular, with a blue outer ring containing the text 'DEPARTMENT OF ENERGY' at the top and 'UNITED STATES OF AMERICA' at the bottom. The inner circle is white and contains a shield with a yellow lightning bolt, a sun, a gear, and a tree. Above the shield is an eagle with its wings spread.

Environmental Management Advisory Board

July 30, 2024

Best Practices for Implementing EM's Groundwater Closure Strategy and Long-Term Monitoring Paradigm

Introduction

- Reviewed Network of National Laboratories for Environmental Management and Stewardship (NNLEMS-2024-00001), Closure Strategy Plan for DOE-EM Complex's Groundwater Plumes.
- May 2024 visit to Savannah River Site.
- Formed 3 sub-committees:
 - Groundwater strategy, ALTEMIS & Stakeholder and regulatory.
- Please ask questions during the presentation.

OVERARCHING RECOMMENDATIONS FOR NNLMS-2024-00001

- A:** Clearly define or eliminate “closure” terminology.
- B:** Issue formal strategy or plan of action.
- C:** Avoid project management strategy recommendations.
- D:** Revise goals with focus on protecting human health and the environment.
- E:** Use a Gantt chart construct to communicate DOE-EM ground water plume timelines.
- F:** Focus the Executive Summary on actions and recommendations.

Charge Question 1: “What are EMAB’s recommendations for ensuring that the products of late-stage technology development are incorporated by EM sites and their contractors into the groundwater strategy for site cleanup and closure, particularly for large, complex groundwater plumes?”

1A: Focus the strategy on science and technology and regulatory/stakeholder acceptance.

1B: Build on SRS and Hanford experience with groundwater science and technology.

1C: DOE should take the lead in sponsoring demonstration projects for late-stage technologies.

1D: DOE should develop a framework to move promising technologies to late stage.

Charge Question 1: Continued

- 1E:** DOE-EM Headquarters engage with EPA Headquarters to issue updated guidance to regulatory community.
- 1F:** DOE-EM develop a concept of operations for ALTEMIS as the project scales from demonstration to working model.
- 1G:** Develop business case analyses for ALTEMIS compared to existing methods of sample acquisition and analysis, and underground plume modeling.

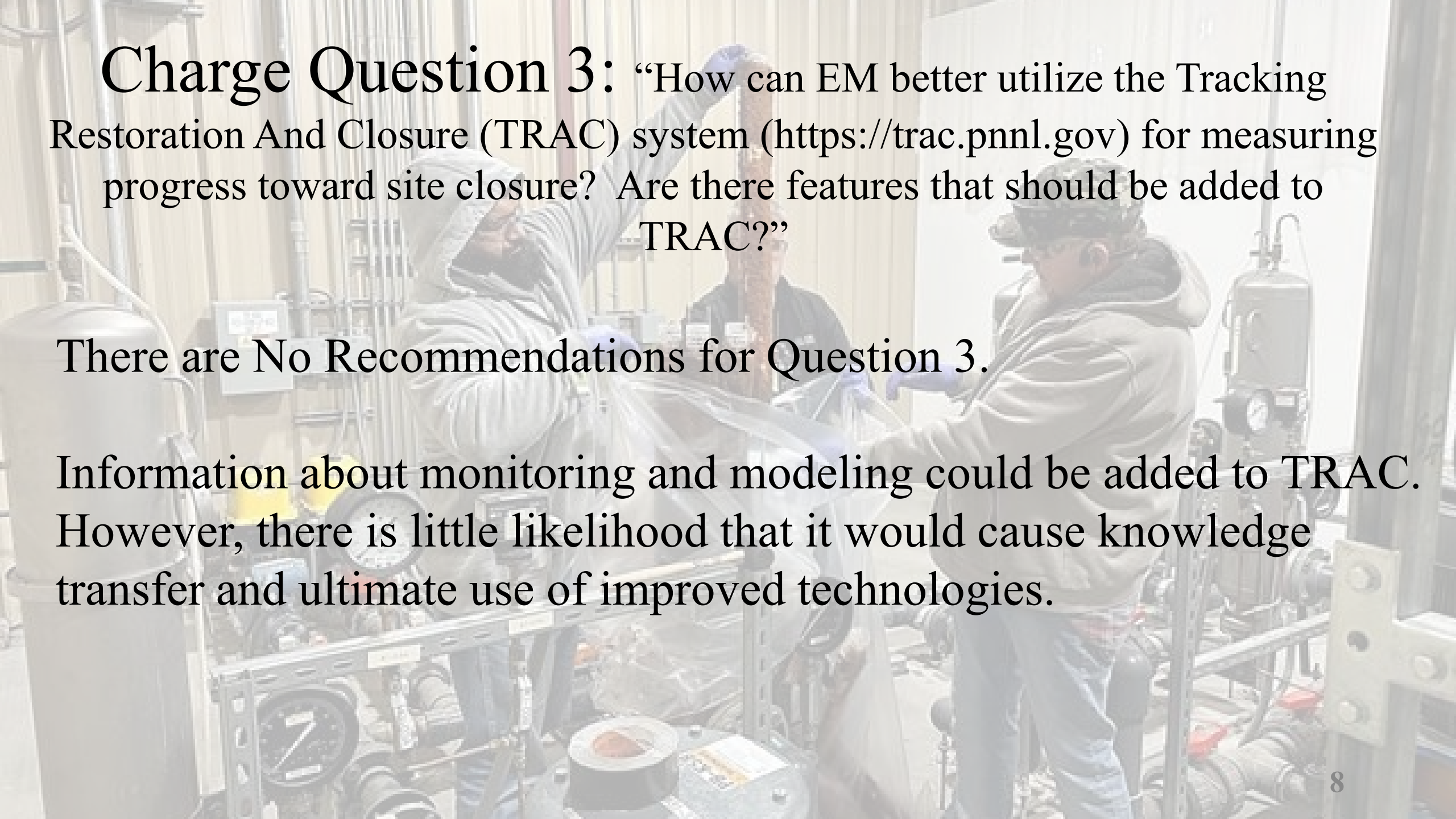
Charge Question 2: “What are recommended approaches for EM to financially incentivize EM site contractors (through new or amended contracts) to identify, demonstrate, scale, and deploy new technologies for remediating and monitoring EM’s most challenging and persistent groundwater plumes?”

2A: DOE-EM assess its innovation/process improvement system with respect to performance and desired outcomes, and make changes holistically.

2B: Specific technology activities may be a way to incentivize technology development with a limited scope & time period that fits logically within the contractor’s larger scope & contract period of performance.

Charge Question 2: Continued

- 2C:** Frank conversation with contractors during development of incentives can help to ensure the qualitative incentives for new technology applications receive attention desired from the contractors.
- 2D:** Avoid developing additional individual incentives for ground water remediation and monitoring due to the lack of equity in employee incentive programs between contractor and DOE, and potentially between different sites.



Charge Question 3: “How can EM better utilize the Tracking Restoration And Closure (TRAC) system (<https://trac.pnnl.gov>) for measuring progress toward site closure? Are there features that should be added to TRAC?”

There are No Recommendations for Question 3.

Information about monitoring and modeling could be added to TRAC. However, there is little likelihood that it would cause knowledge transfer and ultimate use of improved technologies.

Charge Question 4: “How should EM socialize the principles of its groundwater closure strategy and LTM approaches with sites, site contractors, regulators, Tribes, local communities, and stakeholders?”

4A: EM needs to ensure that the end-state at each site is known, has the support of the regulatory agency/agencies, Congress, Tribal leaders and stakeholders including organized and at-large groups specific to each site. The groundwater closure strategy, in turn, must support that end-state vision.

4B: The site-specific groundwater closure strategy must define in clear, unambiguous terms what interests are being protected (e.g., downstream water supplies, aquatics species, etc.) and how the groundwater closure strategy will protect those interests.

Charge Question 4: Continued

4C: Each DOE field manager should develop a written plan for engaging tribal leaders, state elected officials, local elected officials and other engaged stakeholders on the groundwater closure strategy. This plan can/should be tied into existing engagement plans, should written plans exist at a given site. Additionally, each manager should periodically secure an independent review of the stakeholder and regulatory engagement plan, including the groundwater closure strategy elements contained therein, and adjust it as necessary.

4D: Consistent with recommendation 4C, the groundwater closure strategy should distinguish between informing and engaging. Often the two are conflated. The former is communications; the latter is geared to securing support for DOE's policy goals, though the latter necessitates effective communications. Without such stakeholder support, EM might not have regulatory concurrence for the remedy.

Charge Question 4: Continued

- 4E:** EM should evaluate on a case-by-case basis the need for funds for local communities near sites with complex groundwater plumes to hire a technical advisor.
- 4F:** To increase stakeholder, Tribal, and regulator confidence in and acceptance of the groundwater closure strategy, DOE-EM should:
1. Explain the broader and more collaborative approach to solving technology challenges. The ALTEMIS structure with participation of three national laboratories provides demonstration of this.
 2. Strengthen the alignment with the DOE-LM to ensure messages, goals, and initiatives are consistent or at least compatible.



QUESTIONS?