



September 2024

NUCLEAR WASTE CLEANUP

Adopting Leading
Practices Could
Strengthen DOE's
Engagement with
Stakeholders and
Governments

GAO Highlights

Highlights of [GAO-24-106014](#), a report to congressional requesters

Why GAO Did This Study

Numerous entities have an interest in, or may be affected by, EM's cleanup of nuclear waste generated by weapons production and energy research at 15 sites across the country. EM has recognized the importance of engaging with stakeholders and governments about its cleanup work. However, the secrecy around DOE's war-time operations and a history of contamination at the sites have affected this engagement. According to a 2022 report from the National Academies of Sciences, lingering mistrust of EM's work persists.

GAO was asked to review EM's engagement with stakeholders and governments. This report (1) identifies leading practices for engaging stakeholders and governments in the context of environmental cleanup, (2) examines EM engagement at selected sites, and factors that could help or hinder these sites from implementing leading practices, and (3) assesses the extent to which EM has guidance for engagement.

GAO reviewed reports and obtained expert input on leading practices. GAO analyzed EM policies and documents for conducting engagement and interviewed EM officials, stakeholders, and government officials at four EM sites selected based on cleanup cost and status.

What GAO Recommends

GAO is making three recommendations, including that EM develop a national framework and site-specific engagement plans that align with leading practices for engagement. DOE concurred with all three GAO recommendations.

View [GAO-24-106014](#). For more information, contact Nathan Anderson at (202) 512-3841 or andersonn@gao.gov.

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NUCLEAR WASTE CLEANUP

Adopting Leading Practices Could Strengthen DOE's Engagement with Stakeholders and Governments

What GAO Found

To help federal agencies facilitate meaningful engagement on environmental cleanup issues, GAO identified eight leading practices for how federal agencies should engage with stakeholders and governments (see fig.). The leading practices can apply to engagement with a wide range of stakeholders and governments, including community and national interest groups, members of the public, advisory boards, state and local governments, Tribal Nations, and other federal agencies.

Leading Stakeholder and Government Engagement Practices for Environmental Cleanup

	Demonstrate agency commitment
	Ensure agency resources and capacity
	Clearly define and communicate goals and expectations
	Systematically and iteratively identify and include relevant stakeholders and governments
	Minimize barriers to meaningful participation
	Design engagement to fit the goals and context
	Provide valid scientific information that addresses stakeholders' and governments' concerns
	Follow through on commitments to engagement

Source: GAO. | GAO-24-106014

Department of Energy (DOE) Office of Environmental Management (EM) officials engage with stakeholders and governments through various actions depending on the context and the culture of the site and community. GAO interviewed officials at four EM sites—Hanford, Moab, Portsmouth, and Savannah River—and found that various factors could help or hinder EM's implementation of leading practices for engagement. For example, EM leaders' investment in engagement may make stakeholders and governments feel valued while underscoring the importance of engagement to EM site staff. In contrast, turnover of EM leadership and staff may result in inconsistent engagement over time as well as the loss of long-standing relationships, which may undermine EM's ability to build and sustain trust with stakeholders and governments.

GAO found that EM has no overarching guidance outlining an approach for how its cleanup sites are to engage with stakeholders and governments. Instead, EM Headquarters delegates engagement to each cleanup site. GAO found that site engagement plans vary in scope or may be outdated. GAO also found that the culture of engagement differs from site to site and depends partly on the preferences and personalities of site leadership. Moreover, EM officials told GAO that trust and positive relationships could be lost when leadership turns over.

Independent organizations such as the International Atomic Energy Agency have noted the importance of having a framework for stakeholder engagement that establishes an agency's values, as well as developing site-specific engagement plans. By developing a national framework that defines EM's strategy for how to engage with stakeholders and governments across the EM complex, along with site-specific engagement plans aligned with leading practices, EM could better position itself to build and maintain trust with stakeholders and governments affected by its decisions.

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Abbreviations

DOE	Department of Energy
EM	Office of Environmental Management
EPA	Environmental Protection Agency
FACA	Federal Advisory Committee Act, as amended
National Academies	National Academies of Sciences, Engineering, and Medicine
SSAB	Site-specific advisory board

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September 9, 2024

Congressional Requesters

At the end of the Cold War, the Department of Energy (DOE) began a new mission to clean up sites across the country contaminated by decades of nuclear weapons research and production. As environmental cleanup efforts started, DOE acknowledged that it would need to earn the public's trust and foster informed participation with affected communities. The culture of secrecy that had characterized DOE's war-time operations and a history of contamination problems at its nuclear weapons sites had profoundly affected public attitudes and opinion, according to a 1996 DOE report.¹ The same report stated that DOE's credibility was among the lowest of any public institution.

Since that time, the DOE's Office of Environmental Management (EM), which is responsible for cleaning up these contaminated sites, has invested more than \$215 billion and successfully completed cleanup operations at 92 of 107 sites. However, according to a 2022 report from the National Academies of Sciences, Engineering, and Medicine (National Academies), lingering mistrust of EM persists, in part because the agency can be relatively slow to involve the public and communicate risks to those who are interested in, and affected by, EM's cleanup operations.²

The most challenging and costly cleanup work in EM's portfolio remains, as we have previously reported, and is spread across 15 sites in 11 states.³ This cleanup work includes decontaminating and decommissioning contaminated buildings, addressing soil and groundwater contamination, and treating radioactive and hazardous waste. Numerous stakeholders—such as local communities and nonprofit organizations—and governments—such as state regulatory agencies and Tribal Nations—have an interest in, or may be affected by, the remaining

¹Department of Energy, *Closing the Circle on the Splitting of the Atom* (Washington, D.C.: January 1996).

²National Academies of Sciences, Engineering, and Medicine, *Leveraging Advances in Modern Science to Revitalize Low-Dose Radiation Research in the United States* (Washington, D.C.: The National Academies Press, 2022).

³GAO, *Department of Energy: Program-Wide Strategy and Better Reporting Needed to Address Growing Environmental Cleanup Liability*, [GAO-19-28](#) (Washington, D.C.: Jan. 29, 2019).

cleanup work at EM's sites.⁴ In a 2012 memorandum issued by the Office of Management and Budget and the Council on Environmental Quality, the federal government acknowledged the need for processes to directly engage affected interests and federal department and agency decision makers in collaborative problem solving and conflict resolution.⁵

In its *EM Strategic Vision 2024-2034*, the agency highlighted the importance of working collaboratively with stakeholders and governments to complete its remaining cleanup work.⁶ EM's website states that federal decision-making and cleanup activities are improved when stakeholders share their opinions about cleanup decisions. The website notes that public input helps agencies make decisions that are cost-effective, community-specific, and environmentally sound, which leads to faster, safer cleanups.⁷

You asked us to review issues related to EM's engagement of its stakeholders and governments. This report (1) identifies leading practices for engaging stakeholders and governments in the context of environmental cleanup; (2) examines the extent to which selected EM sites take action to engage with stakeholders and governments, and identifies factors that could help or hinder these sites from implementing the leading practices for engagement; and (3) assesses the extent to which EM has a framework that guides its overall approach for engaging stakeholders and governments in the context of environmental cleanup.

To identify leading practices for engaging stakeholders and governments, we reviewed our prior work on interagency collaboration.⁸ We also reviewed reports and studies from the National Academies, other government agencies, and academic journals on leading practices for

⁴In this report, we refer to those who have an interest in or may be affected by EM's cleanup work as "stakeholders and governments."

⁵Office of Management and Budget and Council on Environmental Quality, *Memorandum on Environmental Collaboration and Conflict Resolution* (September 2012).

⁶DOE, EM, *EM Strategic Vision: 2024-2034* (2024). Since 2020, EM has issued an annual "Strategic Vision" document that summarizes the progress it expects to make in the coming decade.

⁷DOE, EM, "EM Site-Specific Advisory Board," <https://www.energy.gov/em/em-site-specific-advisory-board>.

⁸GAO, *Government Performance Management: Leading Practices to Enhance Interagency Collaboration and Address Crosscutting Challenges*, [GAO-23-105520](https://www.gao.gov/products/GAO-23-105520) (Washington, D.C.: May 24, 2023).

stakeholder and government engagement in the context of environmental cleanup. We identified recurring leading practices that these sources described and compiled them into a draft list of leading practices. We identified four subject matter experts and obtained their feedback about the accuracy, completeness, and usefulness of the draft leading practices. We then revised the leading practices to respond to comments and suggestions from the experts' review. Appendix I provides more detail about how we developed leading practices.

To examine the actions selected EM sites take to engage with stakeholders and governments and identify factors that could help or hinder these sites from implementing the leading practices for engagement, we interviewed EM officials, stakeholders, and governments from a nongeneralizable sample of four EM sites: Hanford, Moab, Portsmouth, and Savannah River.⁹ We selected these sites to obtain a range of perspectives based on characteristics including varying geographic and budget size, expected cleanup date, and the presence of Tribal Nations and advisory bodies.

We developed and distributed a questionnaire to EM officials at each of the four sites as well as EM Headquarters and the EM Consolidated Business Center to obtain detailed information about EM's engagement of its stakeholders and governments since 2018. We interviewed EM officials at these sites to obtain additional details and clarity about their answers to the questionnaire. At each site, we also interviewed stakeholders and governments in a range of categories—including advisory bodies; educational institutions; nongovernmental organizations; and federal, tribal, state, and local governments—about their experiences with EM's engagement since 2018. We selected this time frame for our review of EM engagement actions to ensure that recollections about EM engagement activities and experiences would be most accurate and to ensure we included engagement activities before, during, and after the COVID-19 pandemic. We did not evaluate the extent to which EM sites followed leading practices for engaging stakeholders and governments about environmental cleanup. We also did not evaluate EM's compliance with legal or regulatory requirements; instead, our review examined

⁹When interviewing EM officials, government officials, and stakeholders at the Hanford Site, we included both the Office of River Protection and the Richland Office. For counting purposes, when we discuss interviewing EM officials, stakeholders, and governments, we counted Hanford as one site.

engagement practices and activities independent of those that are required.

To assess the extent to which EM has a framework that guides its overall approach for engaging stakeholders and governments in the context of environmental cleanup, we analyzed DOE and EM orders and policies to identify requirements or guidance for conducting stakeholder and government engagement. We interviewed officials from EM Headquarters, including officials from its Office of Communications and Stakeholder Engagement, to understand roles and responsibilities for stakeholder and government engagement. Appendix I includes a description of our full scope and methodology.

We conducted this performance audit from August 2022 through September 2024 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

EM's History and Mission

EM was created to complete the cleanup of environmental contamination at sites that were involved in nuclear research and weapons production, some of which dates back to the Manhattan Project in the 1940s. The Secretary of Energy established EM in November 1989, following an announcement that environmental cleanup and compliance had become a higher priority for DOE than nuclear materials and weapons production.¹⁰ The Cold War was coming to an end, and reports from the news media, DOE, and others were starting to reveal the vast range of environmental contamination that had been generated by decades of nuclear weapons production and nuclear energy research. This contamination included millions of gallons of liquid radioactive waste, millions of cubic meters of solid radioactive waste, thousands of tons of spent nuclear fuel and special nuclear material, and huge quantities of contaminated soil and water.

¹⁰The Superfund Amendments and Reauthorization Act of 1986 subjected all federal agencies, including DOE, to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, which governs cleanup of releases of hazardous substances.

As we and others have reported, DOE's lack of attention to managing the waste from nuclear weapons production and research activities strained relationships with states and local communities.¹¹ In a 1990 report introducing EM to the public, DOE noted that the nation had entered a new era in which the public was demanding environmental cleanup, understandable information, and participation in decision-making. The report stated that the demands for public involvement were in direct conflict with the department's culture at that time, which had roots in a half-century of classifying, compartmentalizing, and strict need-to-know dissemination of information. According to the report, the Secretary envisioned that the new agency's cleanup activities would be subject not only to applicable laws and regulations, but also to the invited participation of affected parties.¹²

By cleaning up 92 of the 107 contaminated sites over the past 35 years, EM has made considerable progress toward its cleanup mission. However, its remaining 15 sites are those that have the most extensive cleanup and present the greatest challenges, according to the EM Program Plan 2022.¹³ The 2022 Plan said that the agency is "approaching a crossroads" in its cleanup work, as EM shifts from mitigating imminent risks at its remaining cleanup sites to having the opportunity to rethink strategies formed years ago and consider new approaches. According to the plan, community and tribal input is to be an important consideration as the agency seeks ways to clean up its remaining sites efficiently and cost-effectively.

EM's Organizational Structure

EM is composed of Headquarters and cleanup sites (collectively referred to as the EM complex), which work together to advance EM's mission. Within EM Headquarters, the Office of Communications and Stakeholder Engagement has primary responsibility for stakeholder and government engagement. According to EM officials, the office was elevated in 2024 to

¹¹See, for example, GAO, *Managing the Environmental Cleanup of DOE's Nuclear Weapons Complex*, T-RCED-91-27 (Washington, D.C.: Apr. 11, 1991) and National Academies, *Improving the Environment: An Evaluation of the DOE's Environmental Management Program* (Washington, D.C.: The National Academies Press, 1995).

¹²DOE, Office of Environmental Restoration and Waste Management, *Environmental Restoration and Waste Management (EM) Program: An Introduction*, DOE/EM—0005P (December 1990).

¹³DOE, EM, *EM Program Plan 2022* (2022). According to this plan, its purpose is to describe the scope of EM's remaining cleanup work, strategies for completing it, and key opportunities to complete work earlier and reduce risk.

have direct access to EM leadership.¹⁴ This office has three sub-offices, including two that engage with external groups:¹⁵

- The Office of Intergovernmental and Stakeholder Programs, which oversees EM's formalized interactions with intergovernmental groups, Tribal Nations, affected entities, communities, and other stakeholders. The office also administers the EM Federal Advisory Committee Act (FACA) Boards, including facilitating interactions between EM Headquarters, EM sites, and EM site-specific FACA boards.¹⁶
- The Office of External Affairs, which develops policies and strategies for messaging across EM Headquarters and sites, and develops mission strategies, policy, and guidance for oversight and implementation of congressional and media relations.

In addition, the Office of Regulatory Compliance—within EM Headquarters—is responsible for interactions with external regulatory agencies, such as the Environmental Protection Agency (EPA). This office develops policy on regulatory compliance and supports EM's cleanup sites in complying with environmental statutes and regulations.

EM's remaining 15 cleanup sites also have responsibility for stakeholder and government engagement. Sites that are larger in size and scope, such as the Hanford and Savannah River Sites, have federal staff who oversee communicating and interacting with stakeholders and

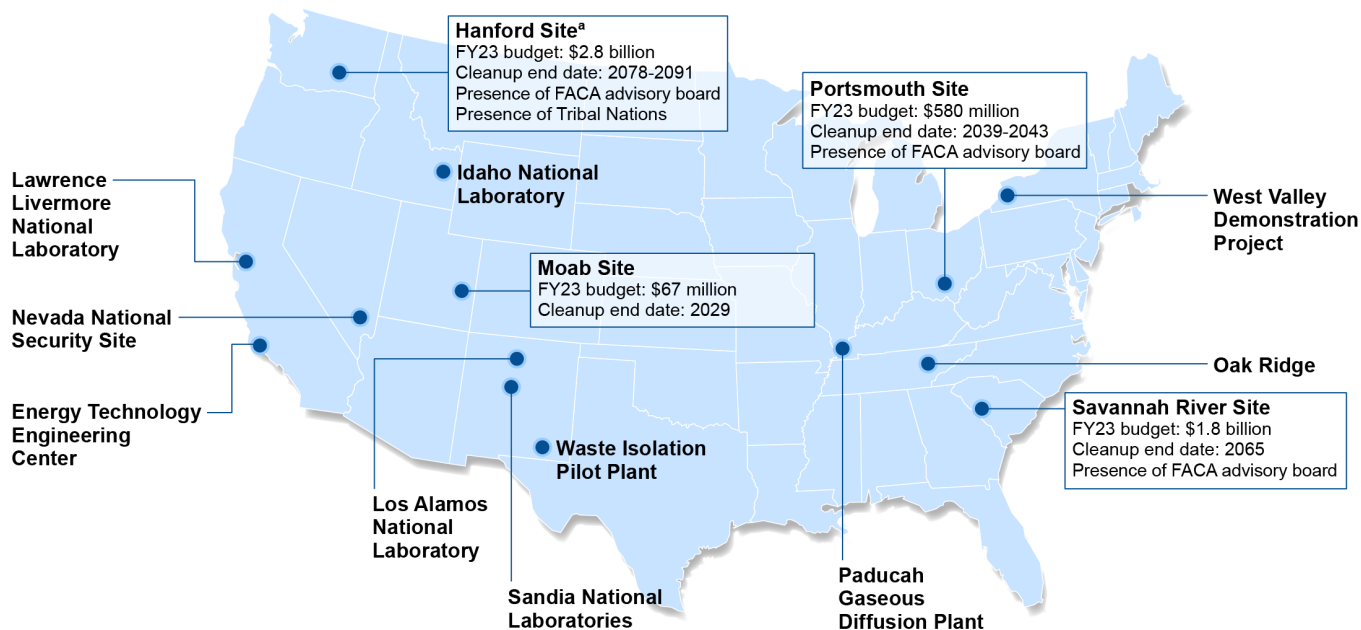
¹⁴The organizational structure for EM's stakeholder and government engagement functions has changed twice since 2022. As of December 2022, the Office of Intergovernmental and Stakeholder Programs and the Office of External Affairs reported to different Associate Principal Deputy Assistant Secretaries. In 2023, EM changed the organizational location of these offices, and both offices began reporting to the Principal Deputy Assistant Secretary. In April 2024, EM combined both offices under a new Office of Communications and Stakeholder Engagement. According to EM officials, this reorganization elevates communications and stakeholder engagement to have direct access to EM leadership, reflecting the importance of such work within EM and helping to ensure that EM continues to strengthen engagement with stakeholders and governments.

¹⁵The Office of Communications Services is the third sub-office within the Office of Communications and Stakeholder Engagement. It is responsible for internal communications, such as email messages to EM employees.

¹⁶The Federal Advisory Committee Act, as amended, governs the establishment, operation, administration, and termination of advisory committees (boards) within the executive branch of the federal government. 5 U.S.C. §§ 1001-1014. Advisory boards include any committee, board, commission, council, conference, panel, task force, or other similar group established or utilized by an agency official for the purpose of obtaining advice or recommendations on issues or policies within the scope of agency responsibilities. 41 C.F.R. § 102-3.25.

governments. Smaller sites, such as the Moab Site, receive staffing and technical assistance with stakeholder and government engagement activities from the EM Consolidated Business Center.¹⁷ This assistance includes administering advisory bodies that are not subject to FACA.¹⁸ Figure 1 shows the location of EM’s 15 active cleanup sites, as well as information on the four sites where we conducted interviews.

Figure 1: Department of Energy (DOE) Office of Environmental Management’s (EM) Active Cleanup Sites, Including Details About the Four Sites Where We Conducted Interviews



Sources: GAO analysis of Department of Energy (DOE) Office of Environmental Management (EM) information and Map Resources (map). | GAO-24-106014

Note: Fiscal Year (FY) 2023 budget numbers are sites’ enacted budgets. The Federal Advisory Committee Act (FACA), as amended, governs the establishment, operation, administration, and termination of advisory committees (boards) within the executive branch of the federal government. Eight of EM’s 15 active cleanup sites have FACA advisory boards.

^aThe Hanford Site is considered two EM sites: The Office of River Protection and the Richland Operations Office.

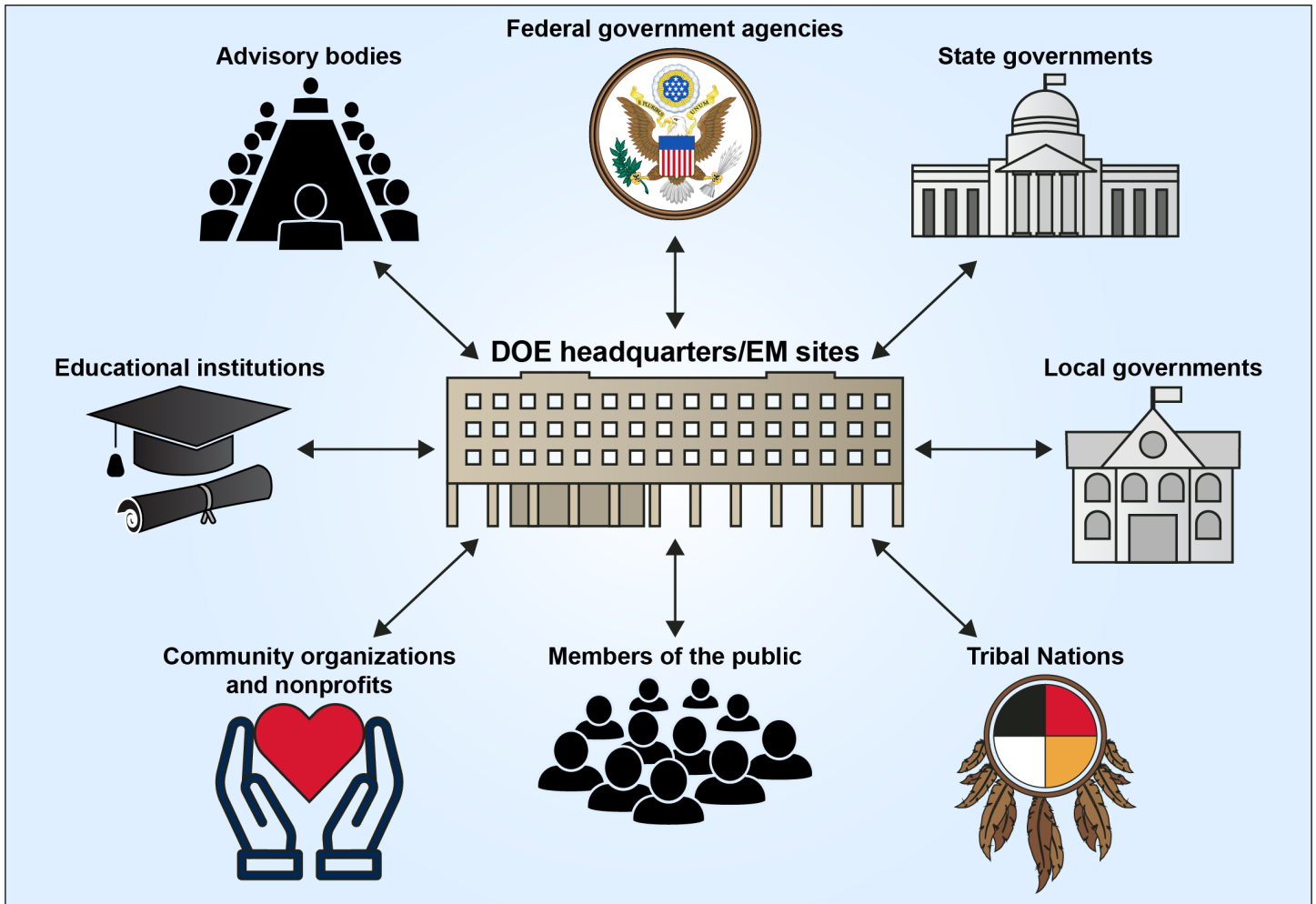
¹⁷The EM Consolidated Business Center was established in 2004 to provide infrastructure and support to EM’s sites. It is located in Cincinnati, Ohio and aids in areas such as information technology, legal services, and public affairs.

¹⁸According to DOE officials, these advisory bodies are not subject to FACA because the purpose of a FACA advisory board is to provide EM with recommendations for its cleanup and the cleanup at these sites is complete or almost complete. In addition, the advisory body for the Moab Site was established by a local government and not DOE, so it is not subject to FACA.

Types of Stakeholders and Governments That EM Engages

A range of individuals, groups, and government agencies—whom we collectively refer to as “stakeholders and governments”—have an interest in, or may be affected by, EM’s cleanup work (see fig. 2). Stakeholders and governments may be affected by EM’s cleanup in different ways or may have more than one type of interest in the cleanup efforts. These could include proximity (e.g., they live or work near a cleanup site and could face health risks from air, soil, or water pollution), economic (e.g., they stand to gain or lose financially as a result of EM’s activities), use (e.g., they could gain or lose access to valuable cultural or other resources as a result of EM’s activities), and statutory or regulatory (e.g., they have responsibility for overseeing land use, environmental cleanup, protection of fish and wildlife, or other public goods).

Figure 2: Examples of Categories of Stakeholders and Governments that the Department of Energy (DOE) Office of Environmental Management (EM) Engages



Source: GAO analysis and icons. | GAO-24-106014

Note: Engagement refers broadly to interactions between EM and its stakeholders and governments, ranging from one-way communication of information between EM and its stakeholders and governments to two-way coordination or collaboration to reach agreement on a decision. EM engages with other categories of stakeholders and governments, such as worker’s unions, the media, special interest organizations, DOE National Laboratories, and international organizations, etc.

In this report, we distinguish between “stakeholders” and “governments” to reflect the unique roles and authorities that governments (including other federal government agencies and sovereign governments, such as Tribal Nations and states) have in EM’s cleanup work. For example, other federal agencies, including EPA and the Nuclear Regulatory Commission, and state agencies have regulatory and other oversight authority over

aspects of EM's cleanup work. Tribal Nations have a government-to-government relationship with the federal government and may have treaty rights affected by EM's cleanup work. EM engages with different types of stakeholders and governments, including:¹⁹

Federal government agencies, including those with regulatory and other oversight authority over aspects of EM's cleanup work, such as EPA and the Nuclear Regulatory Commission, and those that collaborate or are involved in cleanup more generally, such as the Department of the Interior.²⁰

Tribal Nations, which are federally recognized tribes.²¹ State recognized tribes and other indigenous groups may be stakeholders.

State government agencies, such as governor's offices and state departments of environment and health.

Local government agencies, including offices and agencies at the city, county, and regional levels.

Members of the public, including groups, families, and individuals; this may include those employed by a site, those affected by a site's contamination, and U. S. taxpayers.

Community organizations and nonprofits, such as those representing environmental and economic development interests.

Educational institutions, including schools that may face risks from contamination at EM's sites, as well as colleges and universities that EM partners with on science and technology projects, and employee recruitment efforts.

¹⁹In this report, we use "engagement" to refer broadly to interactions between EM and its stakeholders and governments. Engagement may range from one-way communication of information between EM and its stakeholders and governments to two-way coordination or collaboration to reach agreement on a decision. EM engages with other categories of stakeholders and governments, such as worker's unions, the media, special interest organizations, DOE National Laboratories, and international organizations, etc.

²⁰For example, the Moab Site has collaborated with the Department of the Interior on revegetation projects.

²¹As of July 2024, there are 574 federally recognized tribes. 89 Fed. Reg. 944 (Jan. 8, 2024).

Advisory bodies,²² including eight site-specific advisory boards (SSABs) that are subject to FACA,²³ as well as advisory bodies organized by state and local governments that are not subject to FACA.²⁴

Laws, Regulations, and Legal Agreements Governing Engagement

The federal laws and regulations governing EM's cleanup activities include requirements for community and public engagement.²⁵ For example, regulations implementing the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, require EM to prepare a formal community relations plan.²⁶ This plan should specify the community relations activities that the agency expects to undertake while cleaning up the site. Regulations implementing the Resource Conservation and Recovery Act of 1976, as amended, for example, require public notice and public comment before approval of a plan to remediate hazardous waste.²⁷

FACA, as amended, was designed to assure that the Congress and public are kept informed about the purpose, membership, and activities of

²²In this report, we use the term “advisory boards” to refer to site-specific advisory boards subject to FACA, and we use the generic term “advisory body” and “advisory bodies” to refer collectively to any or all advisory bodies, including both those subject to FACA and those that are organized by state and local governments and not subject to FACA.

²³In 1994, DOE established the EM SSAB, which is made up of eight local site chapters at EM sites that operate under the EM SSAB's charter and provide EM with advice and recommendations concerning issues affecting the EM program. In this report, we refer to the eight local site chapters as SSABs. The purpose of EM's SSABs is to provide site-specific advice and recommendations from the communities' perspectives and to involve stakeholders more directly in cleanup decisions, according to EM's website: DOE, EM, “EM Site-Specific Advisory Board,” <https://www.energy.gov/em/em-site-specific-advisory-board>. The eight SSABs are: Hanford Advisory Board, Idaho Cleanup Project Citizens Advisory Board, Northern New Mexico Citizens' Advisory Board, Nevada SSAB, Oak Ridge SSAB, Savannah River Site Citizens Advisory Board, Portsmouth SSAB, and Paducah Citizens Advisory Board.

²⁴According to DOE officials, these advisory bodies are not subject to FACA because the purpose of a FACA advisory board is to provide EM with recommendations for its cleanup, and the cleanup at these sites is complete or almost complete. The Moab Site has an advisory body—the Moab Tailings Project Steering Committee—that was established by a local government and not DOE, so it is not subject to FACA.

²⁵We did not evaluate EM's compliance with these requirements; instead, our review examined engagement practices and activities independent of those that are required.

²⁶40 C.F.R. § 300.430(c)(2)(ii). This requirement only applies to remedial activities undertaken pursuant to Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, section 104, section 106 and 122 consent orders or decrees, or section 106 administrative orders.

²⁷40 C.F.R. § 270.145.

advisory boards, among other things. Eight of EM's 15 sites have SSABs subject to FACA, and seven do not.²⁸ The law and its implementing regulations require federal agencies to file charters before advisory boards can meet or take action. In addition, the law and its implementing regulations require that membership be "fairly balanced in terms of the points of view represented and the functions to be performed."²⁹

FACA, as amended, does not specify how agencies are to appoint members to advisory boards and gives agencies sole discretion regarding membership terms so each agency can establish its own policies and procedures. DOE has established policies and procedures for advisory boards generally and for the EM SSAB specifically.³⁰ EM has filed and renewed a charter for the SSAB, and some local SSABs have their own operating procedures.

In addition, DOE entered into a memorandum of understanding with EPA and the Washington State Department of Ecology governing Hanford's FACA advisory board. The agreement establishes the number of board members and specifies that certain members are to be representatives of local government, Tribes, Hanford workers, and other interests.

Potential Benefits and Pitfalls of Stakeholder and Government Engagement

A 2008 National Academies study on public participation in environmental decision-making concluded it is vital that government agency leaders and managers learn how to engage the public well if the benefits of engagement are to be realized.³¹ It reported that government agencies should engage the public not only because laws and regulations require it, but because substantial evidence shows that good public participation helps agencies make better decisions that are more likely to be implemented effectively. In addition, the report noted that involving all

²⁸According to DOE officials, EM sites may not have an advisory board subject to FACA because the cleanup mission is complete or the local community's lack of interest.

²⁹5 U.S.C. § 1004(b)(2); 41 C.F.R. § 102-3.30(c).

³⁰DOE Office of Management, DOE Manual 515.1-1, *Advisory Committee Management Program* (Oct. 22, 2007); DOE, *EM Site-Specific Advisory Board Policies Desk Reference* (April 2023).

³¹National Academies of Sciences, Engineering, and Medicine, *Public Participation in Environmental Assessment and Decision-Making* (Washington, D.C.: The National Academies Press, 2008). The study defines "public participation" broadly, to include "any of a variety of mechanisms and processes used to involve and draw on members of the public or their representatives in the activities of public or private-sector organizations that are engaged in informing or making environmental assessments or decisions."









necessary people from the outset, such as in scoping or defining the environmental problems to be addressed, can help avoid disruptive conflicts and substantial delays later in the cleanup process. Public participation—when done well—improves the quality and legitimacy of environmental decisions and can enhance trust and understanding among parties. The study also concluded that public participation—when done poorly—may not provide such benefits and, in some cases, may be counterproductive. For example, according to the study, a poorly designed public participation process can decrease, rather than increase, the quality and legitimacy of an environmental decision and the public’s trust of government.

GAO Identified Eight Leading Practices for Engaging Stakeholders and Governments in Environmental Cleanup

Leading Practices

We identified a set of eight leading practices for how federal agencies should engage with their stakeholders and governments on environmental cleanup issues, decisions, and actions. These practices are based on key concepts from our review of literature on stakeholder and government engagement and our consultation with subject matter experts in this field. We also identified key considerations for implementing each of the practices (see fig. 3). While we have defined and organized the practices individually, they are interrelated and reinforce each other; they are iterative and are not sequenced in any particular order.

Figure 3: Leading Practices for Engaging Stakeholders and Governments Regarding Environmental Cleanup

Leading Engagement Practices	Key Considerations for Implementing Each Practice
 <p>Demonstrate agency commitment</p>	<ul style="list-style-type: none"> • Has agency leadership communicated a commitment to engagement? • Has the agency promoted a culture of engagement?
 <p>Ensure agency resources and capacity</p>	<ul style="list-style-type: none"> • Has the agency assessed and identified budgetary resources needed to support engagement? • Has the agency ensured that it has adequate workforce capacity to support engagement? • Has the agency established the structures, procedures, and tools needed to conduct engagement?
 <p>Clearly define and communicate goals and expectations</p>	<ul style="list-style-type: none"> • Has the agency defined the goals that it is trying to achieve by engaging stakeholders and governments? • Has the agency specified stakeholders' and governments' level of potential influence? • Has the agency defined constraints and limitations to the engagement process and to the final decision?
 <p>Systematically and iteratively identify and include relevant stakeholders and governments</p>	<ul style="list-style-type: none"> • Has the agency used a systematic and iterative approach to identify the full scope of potential stakeholders and governments? • Is the agency's inclusion of stakeholders and governments consistent with its goals for engagement?
 <p>Minimize barriers to meaningful participation</p>	<ul style="list-style-type: none"> • Has the agency designed the engagement process to ensure equitable access and participation? • Has the agency made information accessible and understandable?
 <p>Design engagement to fit the goals and context</p>	<ul style="list-style-type: none"> • Has the agency used engagement methods, tools, and formats that are appropriate given the goals and context? • Has the agency timed engagement appropriately given the goals and context? • Has the agency monitored and made needed adjustments to its engagement design?
 <p>Provide valid scientific information that addresses stakeholders' and governments' concerns</p>	<ul style="list-style-type: none"> • Has the agency produced scientific information that addresses stakeholders' and governments' values and concerns? • Has the agency integrated local knowledge into its analyses? • Has the agency provided accurate and credible scientific information?
 <p>Follow through on commitments to engagement</p>	<ul style="list-style-type: none"> • Has the agency followed through to provide agreed-upon opportunities for engagement? • Has the agency communicated changes and unexpected events? • Has the agency demonstrated how it used engagement results?

Source: GAO analysis and icons. | GAO-24-106014

Note: While we have defined and organized the practices individually, they are interrelated and reinforce each other; they are iterative and are not sequenced in any particular order.

Appendix II provides a full description of the leading practices, along with their corresponding key considerations for implementation. Summaries of each leading practice are as follows:

Demonstrate agency commitment. An agency should demonstrate a commitment to engaging stakeholders and governments in environmental cleanup decisions and actions and should promote a culture that supports doing so. Demonstrating this commitment helps reinforce to agency staff that engagement is critical to achieving the agency’s cleanup mission and helps build confidence from those participating that the process is worth their time.

Ensure agency resources and capacity. An agency needs sufficient financial, human, and knowledge resources dedicated to stakeholder and government engagement if engagement is to be successful. Sufficient resources and capacity help ensure that an agency can plan and carry out meaningful engagement. Committing resources also helps demonstrate to stakeholders and governments that engagement is a priority.

Clearly define and communicate goals and expectations. An agency should clearly define its goals for engaging stakeholders and governments. Clear goals lay a foundation for identifying stakeholders and governments and appropriate methods for engaging them, and they serve as standards against which an agency can measure success. Communicating these goals, along with the scope and degree of influence that stakeholders and governments can expect in an environmental decision or action, provides transparency and a shared understanding of what the process may accomplish.

Systematically and iteratively identify and include relevant stakeholders and governments. An agency should identify the full scope of potential stakeholders and governments and include participants from that scope using defined criteria. A systematic, iterative approach to identifying and including stakeholders and governments helps ensure that all important groups can participate. Conversely, identifying and including stakeholders and governments on an ad-hoc basis risks excluding important groups, which may then bias outcomes and jeopardize the legitimacy and durability of environmental cleanup decisions and actions.

Minimize barriers to meaningful participation. An agency should structure the engagement process so that stakeholders and governments—particularly those who have not been included in past efforts—can participate and have the information necessary to do so in a meaningful way. By diagnosing barriers to access and participation and taking steps to minimize them, an agency can better ensure an equitable, inclusive process.

Design engagement to fit the goals and context. An agency should design engagement—including how and at what points the agency

interacts with stakeholders and governments—to be responsive to the established goals and to the context. There is no single best design for engagement; many different methods, tools, and formats for structuring interactions with stakeholders and governments can work well under different circumstances. In lieu of a one-size-fits-all approach, success depends on tailoring the engagement design to fit the situation and on a willingness to learn and adapt as the process evolves.

Provide valid scientific information that addresses stakeholders’ and governments’ concerns. An agency should treat stakeholders’ and governments’ values, concerns, and local contextual knowledge as essential information that should inform scientific facts and analysis. Agency experts and stakeholders and governments bring different, yet important, types of knowledge about any environmental cleanup issue or decision. Specifically, experts bring scientific and technical expertise and judgements, while stakeholders and governments bring detailed understandings of the local context and of their own values, concerns, and priorities. Successful engagement requires providing valid scientific information that considers local knowledge and is responsive to what stakeholders and governments care about.

Follow through on commitments to engagement. An agency should follow through on what it told stakeholders and governments to expect from an engagement process. This includes delivering on agreed-upon steps in the engagement process, communicating changes and unexpected events that inevitably occur, and demonstrating how it incorporated the results of engagement into an environmental cleanup decision or action. Following through on commitments is key to earning trust over the long-term. Further, listening and learning from stakeholder and government input can result in decisions or actions that are more widely accepted and that better address an environmental cleanup issue than had the agency acted alone.

Application of Leading Practices

The leading practices we identified apply to federal agency engagement in the context of environmental cleanup issues, decisions, and actions. This includes nuclear and hazardous waste cleanup and other types of environmental cleanup. The practices apply to engagement at the national level (such as engagement led by a federal agency’s headquarters office) and at the state and local level (such as engagement led by a federal agency’s regional or site office).

As described above, federal laws, such as the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, and implementing regulations govern agencies’ environmental cleanup activities and establish requirements for community and public

engagement. The leading practices are not intended to replace or supersede stakeholder and government engagement processes required under applicable laws, regulations, or legal agreements. Instead, they are intended to apply to engagement practices and activities independent of those that are required.

The leading practices we identified apply to federal agency engagement with a wide range of stakeholders—such as local communities and nonprofit organizations—and governments—such as regulatory agencies and Tribal Nations.³² The leading practices are not intended to describe or replace how an agency should conduct consultation with Tribal Nations,³³ and they do not specifically cover how an agency should interact with Members of Congress or congressional committees.³⁴

EM Sites Engage Stakeholders and Governments Through Various Actions; Several Factors Could Affect Implementation of Leading Practices

EM officials from the four cleanup sites selected for this review described engaging with their site's stakeholders and governments through a variety of in-person, virtual, and hybrid actions. Stakeholders and governments we interviewed described their perspectives on engagement with the four sites and identified ways for EM to improve engagement. We also identified factors that could help or hinder EM's ability to engage with its stakeholders and governments and implement the leading practices for engagement, including challenges with leadership turnover and operation of SSABs.

³²For additional information about how federal agencies should collaborate or coordinate on joint activities, see [GAO-23-105520](#).

³³Executive Order 13175 directs federal agencies to have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications. 65 Fed. Reg. 67249 (Nov. 9, 2000). In November 2022, a Presidential Memorandum established uniform minimum standards for tribal consultation. 87 Fed. Reg. 74479 (Dec. 5, 2022). In addition, some federal laws and regulations require federal agencies to consult with tribes in specific circumstances. Engagement is not a replacement for consultation, although engagement may identify tribes for the federal agency to consult with and inform the consultation.

³⁴We have previously reported on practices that federal agencies can use when consulting with Congress; see: GAO, *Managing for Results: A Guide for Using the GPRA Modernization Act to Help Inform Congressional Decision Making*, [GAO-12-621SP](#) (Washington, D.C.: June 15, 2012).

EM Sites Have Engaged with Stakeholders and Governments through a Variety of Actions, and Stakeholders and Governments Identified Opportunities for Improvement

EM officials from the four sites we studied during our review—Hanford, Moab, Portsmouth, and Savannah River Sites—told us they engage with stakeholders and governments through a variety of actions. These actions involve a mix of in-person, virtual, and hybrid methods. Actions include discussions, briefings, and town hall meetings; regional meetings; open houses and tours; mailed flyers; and surveys. This is in line with EM's Strategic Vision, which states that EM sites routinely engage with stakeholders and governments to solicit input and feedback on site-level cleanup plans.³⁵

Most engagement with stakeholders and governments occurs at the EM site level and the actions EM cleanup sites take to engage with stakeholders and governments differ by site, based on site specific context and circumstances. As described above, we identified a set of eight leading practices for engaging stakeholders and governments on environmental cleanup issues, decisions, and actions. While we did not evaluate EM on the extent to which its actions to engage stakeholders and governments followed these leading practices, the types of actions sites have taken can be seen as examples of actions that illustrate the various leading practices (see table 1).

³⁵DOE, EM, *EM Strategic Vision: 2024-2034* (2024). Since 2020, EM has issued an annual Strategic Vision document that summarizes the progress it expects to make in the coming decade.

Table 1: Illustrative Examples of Engagement Actions Taken by Office of Environmental Management (EM) officials from Hanford, Moab, Portsmouth, and Savannah River Sites since 2018, by Leading Practice

Leading Practices	Illustrative Examples of Site Actions
1. Demonstrate agency commitment	EM officials from the Savannah River Site said that site leadership has personally responded to messages from stakeholders and governments and has routinely attended regular meetings and events with stakeholders and governments.
2. Ensure agency resources and capacity	EM officials from the Moab Site have had a county employee serve in a liaison position since 2009, and EM officials from the Moab Site have provided office space for this role. The liaison facilitates communication between EM and stakeholders and governments.
3. Clearly define and communicate goals and expectations	EM officials from the Portsmouth Site have communicated constraints to stakeholders and governments, such as funding constraints because of continuing resolutions, which affect site cleanup activities.
4. Systematically and iteratively identify and select relevant stakeholders and governments	EM officials from the Hanford Site said they annually evaluate the demographic makeup of surrounding communities. They use this information to focus on subsequent recruitment efforts for open seats on the site-specific advisory board and to target additional outreach efforts for previously under-represented stakeholders and governments.
5. Minimize barriers to meaningful participation	EM officials from the Hanford Site said a technical editor reviews public site documents for understandability, and most site documents are translated to Spanish for Spanish-speaking community members.
6. Design engagement to fit the goals and context	EM officials from the Savannah River Site commissioned a survey in 2021 to determine how well the community understood what the site did and the scope of cleanup. The survey was intended to measure interest and concerns about the site and its cleanup activities and to determine opportunities for improved outreach.
7. Provide valid scientific information that addresses stakeholders' and governments' concerns	EM officials from the Portsmouth Site selected with Ohio University in 2019 to manage an independent sampling effort related to environmental monitoring because of concerns raised by the public.
8. Follow through on commitments to engagement	EM officials from the Moab Site promptly informed the Chair of their site's advisory body, as requested, when EM needed to temporarily change its method of transporting waste from railroad to over-the-road transport in 2023.

Source: GAO analysis of EM questionnaire responses and interviews with EM officials from the four sites in our review. | GAO-24-106014

Note: "Leading Practices" refer to leading practices for engaging stakeholders and governments in environmental cleanup. GAO did not evaluate the extent to which EM site actions followed these leading practices for engagement in environmental cleanup.

Stakeholders and governments we interviewed at the Hanford, Moab, Portsmouth, and Savannah River Sites shared a range of experiences—both positive and negative—about EM’s engagement.³⁶ Figure 4 shows examples of engagement experiences described by these stakeholders and governments.

Figure 4: Examples of the Range of Engagement Experiences from Stakeholders and Governments at Selected Department of Energy Office of Environmental (EM) Sites



Source: GAO analysis and icons. | GAO-24-106014

We interviewed EM officials, as well as stakeholders and governments across four EM sites:

Hanford Site. The Hanford Site in southeastern Washington State was established in 1943 as part of the Manhattan Project to produce plutonium for national defense. Cleanup efforts include retrieving, immobilizing, and disposing of 54 million gallons of nuclear waste stored in 177 underground storage tanks.

Moab Site. The Moab Site in Utah was constructed by a private company as a uranium mill in 1956 and sold uranium concentrate for use in

³⁶For purposes of this report, we use the term “group” when quoting or referring to the experience of a specific stakeholder or government to protect confidentiality. In addition, as noted earlier in this report, we include Tribal Nations as part of the “governments” category because of their government-to-government relationship with the federal government and treaty rights.

national defense programs and nuclear energy.³⁷ EM's main cleanup activity is to relocate its mill tailings—sandy waste material from the milling process—to an off-site disposal cell. EM aims to complete cleanup efforts by 2029.

Portsmouth Site. The Portsmouth Site in Piketon, Ohio, operated a former uranium enrichment facility from 1954 through 2001. The plant produced enriched uranium to support the U.S. nuclear weapons program and commercial nuclear reactors. Its main cleanup activities include decontaminating and decommissioning buildings and addressing soil and groundwater contamination.

Savannah River Site. The Savannah River Site in Aiken, South Carolina, produced plutonium and tritium for use in nuclear weapons from its inception in the early 1950s through the end of the Cold War. In 1992, EM began cleanup efforts, which include retrieving, immobilizing, and disposing of 42 million gallons of nuclear waste stored in 51 underground storage tanks.

³⁷Beginning in 1956, a private company milled uranium for national defense programs, and later for nuclear energy. DOE assumed ownership of the site in 2001.

Hanford Site

Hanford Site: Steps Taken to Engage Additional Stakeholders and Governments

Department of Energy (DOE) Office of Environmental Management (EM) officials from the Hanford Site in Washington State took steps to broaden their engagement with previously under-represented communities to better reflect demographic changes in the region. For example, EM officials from the Hanford Site translate site documents into Spanish to better reach the Spanish-speaking population living in the surrounding community. EM officials from the Hanford Site also conducted an evaluation of the demographics of its site-specific advisory board (SSAB) to identify possible gaps in representation, and then recruited for new SSAB members from communities identified as previously under-represented. Furthermore, EM officials from the Hanford Site held public meetings in Pasco, Washington, in 2023 in part to be more accessible to the Latino community, according to one group.



Source: GAO analysis of DOE documents and interviews with DOE officials; DOE (photo). | GAO-24-106014

EM officials from the Hanford Site told us their primary engagement goal is to educate stakeholders and governments on remaining cleanup activities, including the site's process for prioritizing its activities for the next 5-year period, through 2029.³⁸ EM officials from the Hanford Site explained that since 2018, they have shifted their engagement focus to prioritize engagement with stakeholders and governments located in close proximity to the Hanford Site (see sidebar). Officials said this is because these entities face the greatest economic impact of Hanford's cleanup efforts and any impacts of a potential hazardous event. Officials noted that engagement with stakeholders and governments located in Oregon and Western Washington continues, though these groups are less affected by cleanup efforts at the Hanford Site.

EM officials from the Hanford Site acknowledged that they have not explicitly communicated this shift in prioritization to all stakeholders and governments. Consequently, some stakeholders and governments that are not in close geographic proximity to the Hanford Site told us that they feel ignored or excluded from engagement.

Stakeholders and governments we interviewed from the Hanford Site reported different engagement experiences with EM. For example, several stakeholders and governments said their relationship with the Hanford Site is positive or has been improving over the past 5 years. For example, groups noted that EM has provided advance notice about forthcoming information, and as a result, a group communicated consistent site information to the public. Another group said its relationship with the Hanford Site became stronger and more collaborative, and some groups cited frequent and routine communications with Hanford staff. Another group told us they have experienced a slight increase in collaborative discussions with Hanford staff, and the group hopes this trend continues.

Conversely, other stakeholders and governments we interviewed said their relationship with the Hanford Site declined over the past 5 years. For example, some groups noted that certain informal engagement practices used by EM officials from the Hanford Site undermine their ability to meaningfully engage with the site. These practices include what some

³⁸EM officials from the Hanford Site told us that they determine whether engagement discussion topics with stakeholders and governments are timely based on whether the cleanup activity will begin within the next 5-year period. They also determine whether discussion topics are relevant based on whether the stakeholder or government is located in proximity to the site.

groups perceive to be the site's "decide-announce-defend" approach to engagement and its practice to engage only on issues it considers "timely and relevant."³⁹ Several groups also told us that the timing of engagement is sometimes problematic. For example, one group said it took more than a year for EM officials from the Hanford Site to respond to a meeting request. Another group told us they had only 90 days to provide comments to a nearly 5,000-page document. Some groups told us that they would like EM to hold more frequent "State of the Site" meetings, currently held annually.⁴⁰

³⁹The "Decide, Announce, and Defend" was an approach used by the Department of Energy during the Cold War for secrecy of the nuclear weapons program. In the early 1990s, then-Secretary of Energy Hazel R. O'Leary announced that DOE would move away from the policy, according to DOE's *Closing the Circle on the Splitting of the Atom*. DOE, EM, *Closing the Circle on the Splitting of the Atom* (Washington, D.C.: January 1996).

⁴⁰A "State of the Site" meeting is an annual public meeting that EM officials from the Hanford Site hold to inform the community of the site's cleanup activities.

Moab Site

Moab Site Cleanup Decision Informed by Stakeholder Input

Department of Energy (DOE) Office of Environmental Management (EM) officials from the Moab Site, in Moab, Utah, communicated and accounted for a stakeholder group's views during an engagement involving radiation monitoring stations. In 2021, after data from certain radiation monitoring stations was no longer useful, EM officials from the Moab Site wanted to relocate the stations. EM officials from the Moab Site discussed the idea with the group, presented data, and took the time to answer questions and explain rationale for the decision. As a result, the group fully considered and understood the proposal, which made the group more amenable to the decision before the decision was reached to relocate the radiation monitoring stations.



Source: GAO analysis of interviews with DOE officials; DOE (photo). | GAO-24-106014

EM officials from the Moab Site stated that because the site is finishing mill tailings cleanup efforts, they have been increasing engagement on site closure and engaging with entities to develop the site's End State Vision Plan.⁴¹ These EM officials also noted that they work early and often with stakeholders and governments to build relationships and work through concerns as they arise (see sidebar). According to EM officials, these relationships have helped to minimize confusion and disagreements.⁴²

Stakeholders and governments whom we interviewed about EM engagement at the Moab Site told us that engagement with EM officials has been consistently positive since 2018 or earlier. Several groups described the high degree of transparency and responsiveness with which EM officials from the Moab Site engage with stakeholders and governments. They also highlighted the annual community "million-ton ceremony" celebrating the visible decrease of the uranium mill tailing pile with the removal of another million tons of tailings from the site. Some stakeholders and governments told us that, to continue experiencing positive engagement, it is important for EM officials from the Moab Site to increase communication and frequency of engagement as cleanup nears completion in 2029.

⁴¹The *End State Vision Plan* documents the process the Moab Site will use to reach its end state for the future use of the community, according to EM officials at the Moab Site. The plan defines what closure looks like for the Moab Site. According to EM officials at the Moab Site, the plan was in draft form as of March 2024.

⁴²The Moab Tailings Project Steering Committee is a local advisory body established by a local government that provides input to EM officials at the Moab Site. It is not subject to the Federal Advisory Committee Act because it was not established by and is not operated by DOE.

Portsmouth Site

Stakeholder Engagement at the Portsmouth Site Affected by 2019 Event

In January 2019, Department of Energy (DOE) Office of Environmental Management (EM) officials from the Portsmouth Site in Piketon, Ohio, published its Annual Site Environmental Report from 2017. This report included on-site and off-site environmental monitoring activities information and included data that detected radionuclides at a local middle school. As a result of this information, school officials decided to close the middle school in May 2019.

Stakeholders and governments we interviewed reported poor engagement experiences with Portsmouth Site during this time. For example, groups said they should have been notified about the reported contamination immediately after detection in 2017 rather than in January 2019—more than 18 months after EM detected the contamination. Another group said EM officials from the Portsmouth Site should have taken the community's concerns about the contamination more seriously and should have been more transparent in sharing information.

To help rebuild the trust lost as a result of this incident, EM officials from the Portsmouth Site told us that EM hired a local employee and expert to serve as the site's new manager, partly to address community concerns. By hiring someone from within the community to lead the site, EM officials from the Portsmouth Site said they brought a local voice into the site's management, which helped meet both EM and community needs.



Source: GAO analysis of interviews with DOE officials; DOE, U.S. Department of Energy Portsmouth Gaseous Diffusion Plant Annual Site Environmental Report 2017 (Lexington, Kentucky) 2019; DOE (photo). | GAO-24-106014

EM officials from the Portsmouth Site told us that they have improved transparency and responsiveness as a result of concerns stemming from radiation that was detected at a nearby middle school in 2017 and subsequent community concerns about EM's response (see sidebar). These officials explained that they have leveraged or created multiple methods of engagement to share information with, and seek input from, stakeholders and governments to be more responsive to their concerns.

Several stakeholders and governments from the Portsmouth Site said engagement with EM has improved since 2018, and described EM's new engagement approach as open, responsive, and accessible. Stakeholders and governments described various reasons for such improvements, such as site leadership changes and direct, proactive communication from EM officials from the Portsmouth Site. However, many stakeholders and governments we spoke with about engagement at the Portsmouth Site also noted they want more hybrid and virtual options to make engagement forums more accessible and to allow for more opportunities to provide input on site cleanup decisions.⁴³

⁴³Although EM officials at the Portsmouth Site leveraged virtual technology during the COVID pandemic in 2020, the site has not consistently done so since the pandemic ended.

Savannah River Site

Savannah River Site: Practices and Tools Leveraged Positively Affected Engagement, According to Entities

Stakeholders and governments we spoke with told us that certain practices and tools that Savannah River Site officials used helped enhance stakeholder engagement, including taking a “Core Team” approach to cleanup. The Core Team approach includes officials from the Department of Energy, the Environmental Protection Agency, and the South Carolina Department of Health and Environmental Control.

Core Team meetings have a well-established process for discussing issues and exchanging information, which stakeholders and governments we interviewed said usually results in fast and unanimous agreement for decisions. The meetings often have more than two dozen attendees present, but one representative from each party serves as a decision maker for efficiency, according to one group. They also said Core Team trainings occur annually and address how the group should work together through complex, technical issues. Groups we interviewed said that core team meetings have helped to facilitate successful engagement.



Source: Savannah River Site, Department of Energy.

Source: GAO analysis of interviews with stakeholders and governments from the Savannah River Site; DOE (photo). | GAO-24-106014

EM officials from the Savannah River Site told us that the site’s philosophy for engaging with stakeholders and governments is based on site leadership’s commitment to transparency, listening, and responding to stakeholder concerns, and a culture of respectful communication. EM officials from the site said that when stakeholders and governments write to site leadership about concerns, site leaders send personal responses. This response from top officials demonstrates to stakeholders and governments that their views matter and that they have the ability to affect cleanup decisions.

One group from the Savannah River Site told us that the community has raised concerns about the site’s transition from EM to the National Nuclear Security Administration scheduled to occur on October 1, 2024.⁴⁴ In response, EM officials from the Savannah River Site said they provided presentations to stakeholders and governments about the transition and included updates about the transition as an agenda item for routine meetings with stakeholders and governments to keep them informed. The officials also told us that they have dedicated a staff position to help with communication and engagement during the transition.

Many stakeholders and governments from the Savannah River Site we interviewed described positive relationships with the site since 2018. For example, groups we spoke with identified certain practices and tools that EM officials from the site used that had a positive impact on engagement, including taking a Core Team approach to cleanup (see sidebar). However, one group reported a declining relationship since 2018. Specifically, the group noted that they no longer receive meaningful outreach from EM officials at the Savannah River Site, nor does EM directly respond to their inquiries—which they said has undermined their ability to engage with the site in a meaningful way.

⁴⁴Beginning on October 1, 2024, the Savannah River Site landlord will transition from EM to the National Nuclear Security Administration. The transition is deemed necessary due to increasing National Nuclear Security Administration mission requirements at the Savannah River Site and progression of cleanup at the site, according to EM’s website. DOE, EM, “Preparing for Future: SRS Landlord Transition Takes Center Stage at Summit,” 5 Dec 2023.

<https://www.energy.gov/em/articles/preparing-future-srs-landlord-transition-takes-center-stage-summit>.

**EM Sites Identified
Factors that Could Help or
Hinder Their Ability to
Implement Leading
Practices for Engagement
with Stakeholders and
Governments**

Based on our analysis of interviews with EM Headquarters and officials from the four sites, we identified several factors that affect EM's ability to engage with stakeholders and governments. In contrast to leading practices—which are actions that EM can take to meaningfully engage stakeholders and governments—these factors are resources or beliefs that already exist at EM Headquarters or its cleanup sites that can affect meaningful engagement. For example, officials from the EM sites we reviewed described challenges concerning SSABs that undermine their effectiveness and purpose. Factors that support engagement may in turn help EM implement the leading practices we identified; at the same time, factors that impede engagement may in turn hinder EM's ability to implement the leading practices.

**Factors that Could Help EM
Implement Leading Practices
for Engagement**

EM officials from Headquarters and the four sites we interviewed identified several existing factors that support engagement with stakeholders and governments, which could in turn help EM implement the leading practices for engagement (see table 2).

Table 2: Factors Identified by Office of Environmental Management (EM) Officials from Headquarters and Sites that Could Help Their Ability to Implement Leading Practices for Engagement in Environmental Cleanup

Help Factors	Description	Why It Matters
Continuity of EM site staff	A stable set of EM site staff and leaders, with infrequent turnover and minimal vacancies, over a period of years.	Minimal turnover of EM officials helps facilitate the establishment of long-standing, personal relationships between EM site staff and a site’s stakeholders and governments. This helps build trust and consistent engagement over time.
Invested leadership	Actions and involvement by EM Headquarters and site leaders that demonstrate EM’s dedication—and their personal willingness and interest—in engaging stakeholders and governments.	This helps stakeholders and governments feel valued; helps build trust; and underscores the importance of engagement to EM site staff, stakeholders, and governments.
Trusted relationships	Relationships between EM sites (leaders and staff) and their stakeholders and governments that are built on trust and a desire to engage; an internal EM site team that is cohesive and works well together.	When EM leaders and staff communicate transparently and speak candidly about what they can and cannot do, they build trust with their stakeholders and governments. This may help enable EM and its stakeholders and governments to constructively resolve or avoid potential conflicts.
Strong coordination between EM Headquarters and EM sites	Coordination between EM Headquarters and its sites on issues involving—and obstacles that get in the way of—stakeholder engagement.	Engagement with stakeholders and governments at the site level are more cohesive when EM Headquarters and site staff are in alignment on priorities and messaging. Site-level engagement may go more smoothly when EM sites and Headquarters can effectively coordinate to remove obstacles that get in the way of meaningful engagement.
Multiple avenues of engagement	The purposeful provision of multiple and varied ways for EM to share information with and obtain input from stakeholders and governments about cleanup activities. This includes virtual, in-person, and hybrid formats.	Making multiple avenues of engagement available enhances access and reduces possible barriers to meaningful engagement.
Debriefing and documenting engagement	The regular reflection by EM site leadership about how their stakeholder engagement efforts are working and where they are not working, such as conducting annual internal debriefs and discussions of lessons learned, and documenting for posterity those lessons learned and best practices.	Self-reflection by EM officials helps sites understand what works well for their engagement and what does not, so they can apply lessons learned to improve future engagement. This also helps institutionalize best practices for engagement and helps provide continuity of engagement during turnover of EM site staff and leadership.
Collaboration on economic development	EM efforts to collaborate with communities surrounding cleanup sites to replace jobs expected to be lost when site cleanup is complete.	Such efforts help to build trust and address community concerns about the expected future loss of EM and cleanup-related jobs as site cleanup winds down and eventually finishes.

Source: GAO analysis. | GAO-24-106014

Examples of factors that support EM’s engagement with stakeholders and governments include having invested leadership and debriefing and documenting engagement approaches:

Invested leadership. EM officials from several of the four sites told us that leadership investment in engagement has enabled more transparent and honest engagement between EM and its stakeholders and governments, which has helped build trust. EM officials from these sites also told us that when senior leaders from EM Headquarters invest their time engaging with stakeholders and government—such as by attending site celebrations or meeting with stakeholders and governments in person—it shows that EM Headquarters is committed to engagement. In turn, this sends a strong signal about the importance of engagement to site staff, which encourages continued engagement with stakeholders and governments. In addition, EM officials explained that the personality of site leadership helps drive engagement. For example, EM officials said that a site leader sets an expectation and tone for a site’s engagement with stakeholders and governments, but officials cautioned that this may change when the site leader changes.

Debriefing and documenting engagement approaches. EM officials from two sites we interviewed described efforts that EM site staff and leaders have taken to assess what has and has not been working with their site’s engagement approach and actions. For example, EM officials from the Portsmouth Site told us that they began developing a tool they refer to as a “desk guide” to document their engagement approach for future site staff in charge of planning and implementing the site’s engagement. According to EM officials from the site, this guide is intended to help institutionalize best practices and help future site staff avoid repeating mistakes. EM officials from the Portsmouth Site also noted that they hired staff in 2024 whose responsibility it will be to complete this guide.

Factors that Could Hinder EM from Implementing Leading Practices for Engagement

EM officials we interviewed from Headquarters and the four sites also identified several existing factors that impede engagement with stakeholders and governments. These factors could in turn hinder EM’s ability to implement leading practices for engagement (see table 3).⁴⁵

⁴⁵The purpose of EM’s SSABs is to provide site-specific advice and recommendations from the communities’ perspectives and to involve stakeholders more directly in cleanup decisions, according to EM’s website: DOE, EM, “*EM Site-Specific Advisory Board*,” <https://www.energy.gov/em/em-site-specific-advisory-board>. Among the four EM sites we studied, three have advisory boards subject to FACA: Hanford, Portsmouth, and Savannah River. Each of these three SSABs consists of various stakeholders and

Table 3: Factors Identified by Office of Environmental Management (EM) Officials from Headquarters and Sites that Could Hinder Their Ability to Implement Leading Practices for Engagement in Environmental Cleanup

Hinder Factors	Description	Why It Matters
Turnover of EM leadership and staff	Frequent and widespread turnover of EM officials at all levels, at Headquarters and at sites.	EM's engagement priorities and methods can change substantially when EM leadership and staff change, which may result in inconsistent engagement year to year within a site (and across sites). Frequent turnover or staff vacancies can also result in the loss of longstanding relationships, which may undermine EM's ability to build and sustain trust with stakeholders and governments.
Ineffective operation of site-specific advisory boards (SSABs)	SSABs face various challenges, including recruitment, limited number of applications for board membership, representation, and attendance, which may undermine the use and purpose of SSABs.	SSABs are an important means for EM to obtain input from stakeholders and governments. When operational challenges undermine advisory bodies, an SSAB's ability to provide EM with meaningful input is compromised.
Distrust	A lack of trust or decreasing trust may have various causes such as lingering distrust of EM from the Cold War era, loss of trusted relationships due to retirements, or broken trust due to specific incidents.	Distrust between EM and its stakeholders or governments may make it challenging for EM officials to have productive and meaningful engagement or to resolve concerns as they arise.
Poor Communication	Communication between EM officials and stakeholders and governments that is uncivil, seems secretive, or is confusing.	A lack of civility (e.g., aggressive behavior or language) in communication between EM officials and stakeholders or governments may lead some—including EM officials—to disengage. A lack of transparency by EM officials about issues such as budgets may come across as being secretive and thus undermine trust. Inconsistent use of technical terminology from person to person or from site to site may be confusing.

Source: GAO analysis. | GAO-24-106014

Examples of factors that impede EM's engagement with stakeholders and governments include turnover of EM leadership and staff and challenges facing SSABs at sites with advisory boards subject to FACA, as amended:

- **Turnover of EM leadership and staff.** EM officials from two sites we interviewed noted that engagement is at the whim of the personality

governments interested in or affected by cleanup at the respective EM sites. Over time, EM SSAB became a vital forum for local community involvement in cleanup decisions, according to an EM document. It also became a major tool that DOE uses for two-way communication with local communities, according to an EM official. The fourth site we studied has an advisory body established by a local government, so it is not subject to FACA.

and preference of site leadership because there is no national or overarching set of expectations or guidance for how to engage. As a result, the culture around engagement, including the tone and level of transparency, can shift substantially with EM leadership and staff turnover. In May 2022, we found that EM has experienced frequent turnover in its top leadership position, and at the time of our report, the average top leader had served for less than 2 years.⁴⁶ This has slowed cleanup and made it harder for EM to achieve its complex, long-term mission. In addition, in July 2024, we found that EM faces significant staffing shortages and high staff turnover across the EM complex.⁴⁷

- **Operation of SSABs.** EM officials from the three sites with SSABs, along with stakeholders and governments we interviewed, told us that SSABs have various challenges that hinder their engagement efforts.⁴⁸ These challenges include the recruitment and appointment of board members, representation, and board meeting attendance and member turnover. These challenges can undermine the effectiveness and purpose of SSABs, according to stakeholders and governments we interviewed.

- *Recruitment and appointment of board members.* EM officials, as well as stakeholders and governments, cited concerns with recruitment of new SSAB members. For example, one group we interviewed told us that the process for selecting Portsmouth SSAB members is “dysfunctional, painful, and lengthy.” Some groups told us that it can take a year to be vetted to become a member of the Hanford Site’s SSAB. As a result, applicants forget they applied or are no longer available for the position by the time the nomination is approved, according to a Hanford stakeholder.

Additionally, EM officials told us that some sites receive a limited number of applications, and while this could indicate an issue with recruiting, it may also indicate that community members are satisfied with the site activities. EM officials explained that EM is often told by community members that they do not have the time,

⁴⁶GAO, *Nuclear Waste: DOE Need Greater Leadership Stability and Commitment to Accomplish Cleanup Mission*, [GAO-22-104805](#) (Washington, D.C.: May 2022). Since the time of that report, EM’s top leader—the Senior Advisor for EM resigned in June 2024 after over 5 years of leadership, and DOE selected a new Senior Advisor to lead EM.

⁴⁷GAO, *Nuclear Waste: Changes Needed to Address Current and Growing Shortages in Mission-Critical Positions*, [GAO-24-106479](#) (Washington, D.C. July 2024).

⁴⁸The Moab Site’s advisory body is not subject to FACA.

interest, or ability to volunteer for such positions.⁴⁹ For example, EM officials from the Hanford Site said extensive recruitment is done to ensure Hispanic and Latino community members and representatives from the agriculture industry are aware of and encouraged to apply to become board members. However, EM officials from Headquarters said they can only appoint those who apply. Similarly, EM officials from two sites and some groups said that SSAB members are not paid for their time, and this may be a barrier for recruiting members from underrepresented groups, such as blue-collar workers.⁵⁰ As a result, recruitment challenges lead to representation challenges, such as vacancies, on SSABs.

- *Representation.* EM officials from the three sites and groups we interviewed identified SSAB composition as a challenge to the operation of its SSABs.⁵¹ For example, EM officials from the Hanford Site acknowledged that the site's SSAB's current design and structure does not reflect the demographics in the region and around the site.⁵² Specifically, an EM official from the Hanford Site said Hispanic and Latino community members and representatives from the agriculture industry are impacted by changes at the site, but they are not represented on the SSAB despite recruitment efforts. Without their representation on the SSAB, the site is missing an important way of informing these groups about site activities and its impacts on these groups.

⁴⁹According to EM officials, SSAB board members typically volunteer between 40-120 hours annually as part of their role in making recommendations to DOE about EM site cleanup.

⁵⁰The EM SSAB charter provides that board members serve without compensation but can be reimbursed for authorized travel and per diem expenses incurred while participating in board activities. Agencies are not prohibited from paying their advisory committee members but must comply with any applicable laws, regulations, executive orders, and guidelines in establishing rates of pay for advisory committee members.

⁵¹Board composition has long been identified as a challenge, including in a 1999 report on the effectiveness of SSABs. Pacific Northwest National Laboratory, *An Evaluation of the Effectiveness of Local Site-Specific Advisory Boards for U.S. Department of Energy Environmental Restoration Programs* (Richland, WA: Feb. 1999).

⁵²EM officials from the Hanford Site said they anticipate significant negative feedback from current SSAB members if EM changed the makeup of the SSAB to better represent the site's local community. They also noted they prefer to make any changes to its SSAB in collaboration with the Washington State Department of Ecology and EPA, because these two agencies and DOE have a Memorandum of Understanding about the board's structure and administration. EM officials from Headquarters said the Hanford Site's Memorandum of Understanding governs the board's structure and administration.

EM officials from Headquarters said the eight EM sites with SSABs had conversations with EM Headquarters about the diversity of SSABs, and EM officials from the three sites in our review with SSABs told us they are taking steps to address this challenge. For example, EM officials from the Hanford and the Savannah River Sites said they have been taking steps to identify and recruit possible new SSAB members from previously underrepresented communities. EM officials from the Portsmouth Site also told us that the Portsmouth SSAB does not have dedicated seats for local governments. As a result, local governments created their own council of governments to provide a vehicle to voice their concerns to EM. Groups from the three sites with SSABs and EM officials from one site and Headquarters also pointed out that limited SSAB meeting times and locations may exclude those who cannot afford to take time off work, parents who cannot secure childcare, or those living in rural areas who may not be able to travel to attend meetings in person.

- *Board attendance and member turnover.* Multiple stakeholders and governments from the Portsmouth Site told us that the Portsmouth SSAB struggles with membership attendance. This means that the SSAB may not always have a quorum to hold meetings. As a result, this impacts a SSAB's ability to pass recommendations to EM on cleanup decisions. Many groups from the Portsmouth Site said offering virtual or hybrid meetings could increase board attendance. Stakeholders and governments from EM sites with SSABs that we interviewed identified additional challenges relating to SSABs. For example, many groups at one EM site raised concerns about the unexpected implementation of term limit rules for board members at one EM site, which led to a loss of decades of SSAB member expertise.⁵³ Multiple groups at another site noted concerns about SSAB members' personal ties to a site,

⁵³The charter of the EM SSAB specifies that the standard term for board members is 2 years and that members are not to serve more than three terms (a total of 6 years). However, field managers can request a 1-year term limit exception after a thorough effort to recruit new members has been conducted and no viable candidates were identified.

which undermines community trust in the board.⁵⁴ Groups also expressed concerns that EM may not take input from these advisory bodies seriously, including concerns that EM leadership at one site speaks of the SSAB as being a “waste of time and money” and having “no value.” At another site, groups expressed concerns that EM is not transparent in how it uses SSAB recommendations.⁵⁵

EM officials told us they have taken several steps since 2021 to improve membership balance and membership appointment. For example, DOE guidance establishes a process for nominating board members and filling vacancies, so EM officials said that they instituted a pre-approval step in its process for reviewing board member nominations. As a result, these officials said there was a notable decrease in the length of time it takes EM to review and approve new board members for appointment.⁵⁶ EM officials also told us that they have taken steps to evaluate census data to ensure its SSAB membership aligns with the diversity of the communities surrounding EM sites. DOE guidance specifies that advisory board membership should be fairly balanced in terms of the viewpoints represented and the functions performed.

Nonetheless, stakeholders and governments we interviewed continue to state concerns about the operation of SSABs, including related to the recruitment and appointment of board members, representation, and board attendance and member turnover. Such issues could be undermining the effectiveness of DOE’s engagement with the SSABs.

⁵⁴Prior to becoming advisory board members, DOE guidance says that nominees must disclose any financial or other interest that may be affected by the work of board or create the appearance of a conflict of interest. DOE also has conflict of interest requirements that board members must abide by. Under DOE guidance, employees of DOE site contractors are ineligible to be advisory board members unless a memorandum of exception provides a justification and explanation of why the appointment will not result in a conflict of interest. The Memorandum of Understanding governing the Hanford SSAB requires at least five board members to represent Hanford workers.

⁵⁵FACA regulations require agencies to communicate at regular intervals with advisory board members on how their advice has affected agency programs and decision-making. 41 C.F.R. § 102-3.95(d). EM guidance says that DOE local offices should provide timely responses—within 90 days—to local board recommendations. In addition, the guidance says responses should state how accepted recommendations will be implemented and in what time frame and provide a substantive reason for decisions to reject recommendations.

⁵⁶DOE, *Environmental Management Site-Specific Advisory Board Policies Desk Reference* (Washington, D.C.: Apr. 2023); DOE Manual 515.1-1, *Advisory Committee Management Program*.

Continual evaluation of the EM Program and site program performance is a critical component of achieving the EM cleanup mission, according to the EM Program Management Protocol.⁵⁷ Moreover, according to a 2020 Office of Management and Budget memorandum on program evaluation standards and practices, federal evaluations must be viewed as objective in order for stakeholders, experts, and the public to accept their findings.⁵⁸ However, EM officials told us that such a formal evaluation of its SSABs complex wide has not been conducted and documented since 1999.⁵⁹ In addition, EM officials acknowledged that they see benefits to having an independent and objective evaluation on the effectiveness of all eight SSABs and transparently sharing the lessons learned from such an evaluation.⁶⁰ By obtaining and documenting an objective evaluation of the operation and effectiveness of EM's SSABs, EM would be better positioned to identify challenges and make improvements to its SSABs across the EM complex.

EM Headquarters Lacks a National Framework to Guide Sites' Engagement with Stakeholders and Governments

EM does not have a national or overarching framework to guide its overall approach for how Headquarters and its cleanup sites are to engage with stakeholders and governments about environmental cleanup activities. EM acknowledges the importance of engaging with stakeholders and governments, with EM Headquarters broadly leading engagement at the national level and delegating engagement at the site level to each site's leadership. However, EM does not provide a comprehensive guide or set of leading practices to its cleanup sites outlining how to engage or what engagement should look like. Consequently, each site has developed its own engagement practices and priorities—and its own culture of engagement.

⁵⁷DOE, *EM Program Management Protocol* (Washington, D.C.: Nov. 2020).

⁵⁸Office of Management and Budget, *M-20-12: Memorandum for Heads of Executive Departments and Agencies* (Washington, D.C.: Mar. 2020).

⁵⁹This evaluation was conducted by the Pacific Northwest National Laboratory. DOE, *An Evaluation of the Effectiveness of Local Site-Specific Advisory Boards for U.S. Department of Energy Environmental Restoration Programs* (Richland, WA: Feb. 1999).

⁶⁰EM annually submits statistics and descriptive information about the SSAB to the General Services Administration's FACA database. This submission includes the names of SSAB board members, the number of recommendations the SSAB made, the program outcomes associated with the SSAB, and the actions EM took as a result of SSAB advice or recommendations but is not a complex-wide evaluation of the efficacy of the SSAB.

EM Headquarters Does Not Have a National Framework for Engagement with Stakeholders and Governments Across the EM Complex

EM does not have a national or overarching framework to guide its overall approach for how EM Headquarters or its cleanup sites are expected to engage with stakeholders and governments about environmental cleanup activities. EM articulates the importance of engaging with stakeholders and governments about its environmental cleanup activities in its 2024 Strategic Vision and 2022 Program Plans.⁶¹ However, these documents do not describe or outline the ways in which the agency or its sites should engage its varied stakeholders and governments.

The agency, through EM Headquarters, broadly leads and supports engagement efforts at a national level. EM Headquarters focuses its engagement with stakeholders and governments on high-level policy and complex-wide issues. For example, EM Headquarters funds intergovernmental groups; exchanges lessons learned with international governments and groups working on nuclear decommissioning; and serves as an entry point for Tribal Nations and other government officials interested in meeting with DOE or EM leadership. In addition, EM Headquarters facilitates meetings with senior EM management when stakeholders and government officials visit Washington, D.C., responds to inquiries from stakeholders, and helps connect stakeholders with experts from other parts of DOE.

EM Headquarters also provides a range of guidance to EM's 15 cleanup sites on specific initiatives and to ensure compliance with certain legal requirements, as well as on external communications efforts, such as drafting and reviewing press releases and notifying congressional delegations when unexpected events occur. Moreover, according to EM officials, EM Headquarters facilitates information sharing among cleanup sites by, for example, sharing best practices on facilitating virtual meetings during the pandemic and communicating using plain language. In addition, EM Headquarters collaborates with sites to help educate stakeholders and governments about complicated or technical matters. For example, since 2023, it has helped facilitate interactive budget simulations at multiple sites in which stakeholders role-played developing their site's annual budget to better understand EM's risk-based budget prioritization process.

While EM Headquarters facilitates engagement at a national level and supports sites in conducting engagement at the site-level, EM officials

⁶¹DOE, EM, *EM Strategic Vision: 2024-2034* (2024); and DOE, EM, *EM Program Plan 2022* (2022). The EM Strategic Vision provides a concise, high-level summary of EM's priorities and progress from 2024 to 2034, and the EM Program Plan is intended to build on that vision by identifying long-term strategies for completing EM's mission.

acknowledged that the agency has no national or overarching framework that defines its strategy for engagement. Specifically, EM officials said that EM does not have written guidance or a set of expectations for either Headquarters or its cleanup sites that outlines EM's overall engagement approach, what it values in engagement, or how to engage with stakeholders and governments. Nor does EM have a comprehensive set of best or leading practices for how sites should engage with their stakeholders and governments. Moreover, as described above, stakeholders and governments whom we interviewed across the selected sites described inconsistent and poor engagement experiences, including concerns related to transparency and timeliness of EM communication and feeling ignored or excluded. While stakeholders and governments we interviewed noted some improvements over time and at certain sites, distrust and concerns about EM engagement remain.

EM issued a guide in the late 1990s for staff across the EM complex on how to design a public participation program, and DOE issued a policy directive in 2003 on public participation and community relations. However, these documents are no longer in use by the agency.⁶² Additionally, EM officials told us that, as a result of a 1993 DOE report calling for transparent and meaningful engagement by EM to earn public trust and confidence, the agency has incorporated stakeholder and government engagement as foundational and guiding principles in its daily activities and across cleanup sites.⁶³ However, EM officials acknowledged that these guiding principles have not been translated into written guidance. While EM officials told us that they expect sites' engagement to go beyond the "bare minimum" of legal requirements, this expectation is not set out in documentation or guidance from EM Headquarters.

Various groups have noted the importance of developing a framework for stakeholder engagement that establishes the values and directions of the agency. For example, the International Atomic Energy Agency issued a report on stakeholder engagement in 2021 that identified development of a stakeholder engagement strategy as a tool that agencies can use to

⁶²DOE, EM Office of Intergovernmental and Public Accountability, *How to Design a Public Participation Program*, (estimated publication date 1999). In addition, in 2003, DOE issued DOE Policy 141.2, "Public Participation and Community Relations (2003). In 2011, this policy was cancelled, archived, and not replaced.

⁶³DOE, Final Report of the Secretary of Energy Advisory Board Task Force on Radioactive Waste Management, *Earning Public Trust and Confidence: Requisites for Managing Radioactive Waste Sites* (Washington, D.C.: Nov. 1993).

support comprehensive, rigorous, and sustained long-term stakeholder engagement. According to this report, a stakeholder engagement strategy lays out the agency's engagement approach and provides a guiding framework for nuclear programs to pursue their stakeholder engagement initiatives.⁶⁴

This International Atomic Energy Agency report also noted that poorly strategized or implemented stakeholder engagement and communication—or a lack of engagement—may contribute to program setbacks and inhibit cleanup. The report explained that without a strong stakeholder engagement strategy and plan, there are times when organizations may find themselves reacting to opposing views and being defensive, instead of being proactive and building understanding of and support for nuclear technologies. The International Atomic Energy Agency report also noted that through stakeholder engagement, organizations and their stakeholders can work on compromise, sharing information and concerns to address issues before they negatively impact the program.

Similarly, EM's Environmental Management Advisory Board noted in its 2021 report that DOE should develop a deliberate and formal approach to partnering with its stakeholders and governments that includes developing a common vision, a collaborative approach to problem-solving, and clearly defined expectations.⁶⁵ This report noted that when delays occur or costs increase because of disputes with regulators, taking a collaborative approach can speed up decisions, build trust for more flexible and innovative decisions, and help to meet agreed upon cleanup timelines. Additionally, several subject matter experts we spoke with also called for establishing transparent standards and expectations about communication and roles at national and site levels to develop meaningful stakeholder engagement and better solutions.

However, EM does not have a national framework that Headquarters, or its sites can follow regarding what is valued or how to engage with stakeholders and governments. Rather, EM Headquarters delegates site-level engagement to its sites to address the unique context and needs of

⁶⁴International Atomic Energy Agency, *Stakeholder Engagement in Nuclear Programmes*, International Atomic Energy Agency Nuclear Energy Series No. NG-G-5.1, IAEA (Vienna, Austria: December 2021). The United States is a member of the International Atomic Energy Agency.

⁶⁵Environmental Management Advisory Board, *Report to the Senior Advisor to the Undersecretary of Science, United States Department of Energy: Observations and Recommendations on Regulatory Reform* (April 2021).

each site, according to EM officials. As a result, EM leadership at each cleanup site is responsible for leading engagement—from planning to implementation—with their stakeholders and governments. By developing a national framework that defines EM’s strategy for how to engage with stakeholders and governments across the EM complex, the agency could better ensure that it is conducting meaningful engagement that minimizes setbacks and speeds cleanup efforts at the sites.

EM Headquarters Delegates Engagement with Stakeholders and Governments to Its Cleanup Sites

EM Headquarters delegates engagement at its sites to each cleanup site. As a result, the EM leadership at each site is responsible for planning and implementing engagement with that site’s stakeholders and governments, as noted above. While officials at the EM cleanup sites may leverage EM Headquarters’ expertise for specific efforts, the overall planning and implementation of engagement is done at the site level.

We requested site-specific engagement plans from all 15 EM cleanup sites and found that almost all of them have one or more targeted plans that relate to how to engage with stakeholders and governments, although two EM cleanup sites were unable to provide any formal engagement plans. We found, however, that these plans vary in scope, with some covering a broad range of topics and others focused specifically on fulfilling legal requirements, such as the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, and the Resource Conservation and Recovery Act of 1976, as amended. In addition, some plans specifically identify which stakeholders and governments to engage, the methods to use to engage, and the goals and frequency of such engagement actions. Other plans are more general and do not include names or categories of stakeholders and governments with whom the site is expected to engage, nor the methods of engagement EM site staff are to use. Moreover, three of the four sites we selected—Hanford, Portsmouth, and Savannah River—have engagement plans that are 7 or more years old, with one plan dating from 2010.

Various groups have highlighted the importance of developing a site-specific engagement plan detailing how a site should carry out an organization’s overarching engagement framework. For example, the 2021 International Atomic Energy Agency report states that organizations should develop a plan, in addition to developing a strategy. Such plans should (1) include details about how to carry out an organization’s engagement strategy and (2) support the efforts of nuclear programs to

communicate and engage with all interested parties.⁶⁶ According to this report, developing such a plan helps build an organizational culture that supports and encourages trust, collaboration, and communication. A plan also helps ensure that meaningful stakeholder and government engagement can be implemented and sustained over time.

Additionally, a 2020 report by the Energy Facility Contractors Group—a membership organization of DOE contractors—recommended that EM consider requiring a formal Government/Stakeholder Management plan that includes sustained, regular communication at every site.⁶⁷ The group’s 2020 report also stated that some unifying Headquarters leadership involvement is key. Similarly, EM officials we interviewed acknowledged the importance of building trust with stakeholders and governments and that building such trust requires continuous maintenance and constant investment in relationships.

In March 2023, EM officials at Headquarters, in a pilot collaboration with EM officials at its New Mexico cleanup sites, developed EM’s first comprehensive statewide stakeholder engagement strategy and messaging plan. This plan comprehensively identifies stakeholders and governments, documents statewide and site-specific issues and sensitivities, specifies who oversees engagement, and delineates EM’s vision and goals for engagement. According to EM officials, this plan is intended to serve as a statewide engagement playbook that aligns messaging across sites to ensure engagement “with a cohesive voice.” It is also intended to help ensure consistency during transitions and turnover in site and Headquarters leadership. Further, according to the plan, its goal is to strengthen relationships between EM and the state of New Mexico by working to increase trust between EM and all affected stakeholders through increased community engagement and consistent messaging. EM officials told us that they want to expand this pilot to other cleanup sites and regions but do not have the resources to do so.

As noted above, EM does not provide a current comprehensive guide or set of leading practices to its sites describing how to engage or what engagement should look like. Consequently, each site has developed its own engagement practices and priorities—and thus its own culture of engagement. According to EM officials we interviewed, the culture of

⁶⁶International Atomic Energy Agency, IAEA Nuclear Energy Series No. NG-G-5.1 (2021), pages 20, 35.

⁶⁷Energy Facility Contractors Group, Best Practices in Risk Communication and Government/Stakeholder Relations (January 2020).

engagement differs from site to site and partly depends on the preferences and personalities of site leadership. In this context, EM officials at three of the four sites we interviewed indicated they were concerned that unless they document how their site approaches engagement and what has and has not worked, the increased trust, transparency, and positive relationships that staff have worked to build in recent years could fall apart when leadership turns over and creates a different culture of engagement.

Without site-specific plans for how to engage and that align with leading practices for engagement, EM is missing an opportunity to build and institutionalize an organizational culture that supports and encourages trust, collaboration, and communication. Moreover, without using a comprehensive set of leading practices to guide site leaders about what engagement should look like and what should be prioritized, the culture of engagement at any one site may not align with Headquarters' expectations. This may lead to inconsistent messaging within the complex on a range of issues, including trust and transparency. By developing site-specific plans for engaging stakeholders and governments that are linked to leading practices, EM can better position its Headquarters and site leaders to speak with a cohesive voice, build relationships and trust, and create and institutionalize a consistent and meaningful culture of engagement across the complex.

Conclusions

As DOE shifted its mission at the end of the Cold War to cleaning up communities contaminated from decades of nuclear weapons production and energy research, DOE and EM have had to navigate a decades-old culture of secrecy and a history of contamination problems that profoundly undermined public trust. With areas of mistrust persisting and the most challenging and costly cleanup work remaining, EM recognizes that it is imperative to engage the wide range of stakeholders and governments, including Tribal Nations, interested in and affected by its environmental cleanup efforts.

To help EM facilitate meaningful engagement with these communities, we identified eight leading practices for how federal agencies should engage with their stakeholders and governments on environmental cleanup issues. These leading practices could help provide EM officials—at Headquarters and its 15 remaining cleanup sites—with meaningful guidelines for informing, consulting, involving, collaborating, and empowering their wide range of stakeholders and governments as the agency works to clean up and close these sites.

In this context, EM has an opportunity to re-envision how it designs and uses its site-specific FACA advisory boards and address the challenges faced by these SSABs. By obtaining a written and objective evaluation of the operation and effectiveness of EM's eight SSABs, EM could better position itself to identify and address specific challenges, thereby enhancing the impact and relevance of these important community voices.

Furthermore, EM's recent reorganization of its communications and stakeholder engagement program provides the agency with a unique opportunity to articulate a cohesive culture of engagement and set of expectations for how staff across the agency can meaningfully engage with EM's stakeholders and governments—something it has not articulated to date. By developing a national framework for engagement that defines EM's strategy for how to engage with stakeholders and governments across the EM complex and incorporates leading practices for engagement in environmental cleanup, EM could better ensure that it is building and maintaining trust with the stakeholders and governments affected by its decisions. It could also better ensure it is conducting meaningful engagement across the complex, especially as it tackles the most challenging cleanup work and navigates turnover of its top leadership.

Finally, EM could also seize the opportunity to build and institutionalize an organizational culture that supports and encourages trust, collaboration, and communication as part of its engagement with stakeholders and governments. This is especially critical amid continued high turnover of staff to ensure the successes gained and trust built by EM site leaders in recent years is not lost. By developing site-specific plans directing engagement at each site, and by tying those plans back to leading practices for engagement, EM could better position its Headquarters and site leaders to speak with a cohesive voice, build relationships and trust, and create and institutionalize a consistent and meaningful culture of engagement across the complex.

Recommendations for Executive Action

We are making the following three recommendations to DOE:

The Senior Advisor for the Office of Environmental Management should conduct and document an objective evaluation of the operation and effectiveness of EM's SSABs, including evaluating challenges related to the recruitment and appointment of board members, representation, and board attendance and member turnover. (Recommendation 1)

The Senior Advisor for the Office of Environmental Management should develop and use a national framework that defines EM's strategy for engagement with stakeholders and governments across the EM complex and that incorporates elements of leading practices for engagement. (Recommendation 2)

The Senior Advisor for the Office of Environmental Management, in coordination with EM site leadership, should develop engagement plans at the site or regional level that institutionalize expectations for how to engage stakeholders and governments with a cohesive voice and incorporate elements of leading practices for engagement. (Recommendation 3)

Agency Comments

We provided a draft of this report to the Department of Energy for review and comment. In its written comments, reproduced in appendix III, the Department of Energy agreed with our recommendations and described the steps it plans to take to address these recommendations. The Department of Energy also provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Energy, and other interested parties. In addition, this report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-3841 or andersonn@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made significant contributions to this report are listed in appendix IV.



Nathan Anderson
Director, Natural Resources and Environment

List of Requesters

The Honorable Cathy McMorris Rodgers
Chair

The Honorable Frank Pallone, Jr.
Ranking Member
Committee on Energy and Commerce
House of Representatives

The Honorable Diana DeGette
Ranking Member
Subcommittee on Energy, Climate, and Grid Security
Committee on Energy and Commerce
House of Representatives

The Honorable H. Morgan Griffith
Chair
Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
House of Representatives

Appendix I: Objectives, Scope, and Methodology

The objectives of our report were to (1) identify leading practices for engaging stakeholders and governments in the context of environmental cleanup, (2) examine the extent to which selected Department of Energy's (DOE) Office of Environmental Management (EM) sites take action to engage with stakeholders and governments, and the factors that could help or hinder these sites from implementing the leading practices for engagement, and (3) assess the extent to which EM has a framework that guides its overall approach for engaging stakeholders and governments in the context of environmental cleanup. The scope of our review was EM engagement actions taken during the 5 years prior to the start of our review (since 2018). We selected this time period to ensure that recollections about EM engagement activities and experiences would be most accurate and to ensure we included engagement activities before, during, and after the COVID-19 pandemic.

To identify leading practices for engaging stakeholders and governments in the context of environmental cleanup, we conducted a literature review on this topic. We identified reports and studies for our literature review using two methods:

- First, we used a snowball technique to identify prior GAO and National Academies' reports on the topics of stakeholder engagement, interagency collaboration, and public participation. We reviewed these reports to identify additional relevant sources, then searched those sources for additional ones. From this snowball technique, we identified eight reports and studies that described leading practices in a comprehensive manner. We read these reports and studies, identified recurring leading practices that they described, and organized these into a set of preliminary leading practices and key considerations for implementation.
- Second, a GAO research librarian conducted searches of Scopus, Dialog ProQuest, EBSCO, and PolicyFile databases using terms and operators such as "stakeholder AND 'leading' AND 'environment cleanup.'" We limited our searches to reports and studies published in the last 20 years (since 2003 at the time we conducted the searches). The searches yielded 377 results, which we sorted and prioritized by reviewing titles, abstracts, publication dates, and number of times cited. This prioritization process resulted in 10 reports and studies. By reviewing the citations in these 10 reports and studies, we identified an additional six reports and studies that met our search criteria.

In total, using these two methods, we identified 24 reports and studies to include in our literature review. This included reports and studies from other government agencies and academic journals. We reviewed these 24 reports and studies and determined that they repeated many of the same themes. Further, we found that additional documents were not adding any substantively new content. At this point, we determined that we did not need to add additional reports and studies to our review.

We used NVivo, a qualitative analysis software program, to analyze these 24 reports and studies. In NVivo, we coded text from the reports and studies into categories that corresponded to our preliminary set of leading practices and key considerations for implementation. Through coding, we sought to gather and categorize information that described leading practices and key considerations, along with information that described criteria or indicators for assessing whether a practice or consideration is in place; examples of agencies using a practice or consideration; and effects of the presence or absence of a practice or consideration. We synthesized the results of our analysis into a written draft of the leading practices and key considerations.

Additionally, for this objective, we identified four external subject-matter experts and obtained their feedback about the accuracy, completeness, and usefulness of the leading practices. We selected a mix of experts from the government, academia, and industry who have professional expertise in areas such as stakeholder and government engagement, public participation, risk and decision-making, integration of local and expert knowledge, and nuclear waste cleanup. We provided the experts with the draft leading practices and key considerations and asked them to answer a structured set of questions about the practices' accuracy, completeness, and usefulness. We reviewed each expert's comments and made edits to incorporate wording changes and examples that they provided to finalize the list of leading practices and key considerations. In selecting specific examples to incorporate, we considered whether the examples (1) were made by multiple experts, (2) were supported by corroborating evidence, such as reports and studies obtained during our literature search, (3) were within the core of the commenting experts' base of knowledge, and (4) did not fundamentally contradict a comment made by another expert.

To examine the actions selected EM sites take to engage with stakeholders and governments, we selected four EM sites (Hanford, Moab, Portsmouth, and Savannah River) to illustrate a range of examples

across EM's cleanup sites.¹ We selected these four sites to obtain a mix of advisory board types, including having some with advisory boards subject to the Federal Advisory Committee Act, as amended; presence of a Tribal Nation near the site, geographic size of the site, budget size of the site, and expected cleanup completion year.

For selected sites, we reviewed relevant site documents, policies and procedures, and interviewed EM officials. To obtain detailed information about how EM engages with its stakeholders and governments at each of the four selected sites, we developed and distributed a questionnaire to EM officials from those sites. This questionnaire was based on the leading practices and its associated key considerations. We also conducted follow-up interviews with the sites based on responses to the questionnaires.

We did not evaluate the extent to which EM site actions to engage stakeholders and governments followed these leading practices for engagement. We also did not evaluate EM's compliance with legal or regulatory requirements; instead, our review examined engagement practices and activities independent of those that are required. Based on our early analysis, we determined that the leading practices that we identified for engagement in environmental cleanup would not be appropriate criteria for our review. This is because EM did not have an overarching framework for stakeholder engagement across the complex, which would be necessary to enable an evaluation of EM's stakeholder engagement practices. Our site-specific findings are not generalizable across EM's 15 cleanup sites.

Additionally, to identify factors that could help or hinder the ability of EM officials to implement the leading practices for engagement at selected sites, we included relevant questions as part of the questionnaire we developed and distributed to EM officials at Headquarters and at the four sites in our review. We also conducted follow-up interviews with EM Headquarters and sites in which we discussed factors they identified as affecting their ability to meaningfully engage with stakeholders and governments. Factors refer to resources or beliefs that already exist at EM Headquarters or its cleanup sites that either support or impede meaningful engagement. We then analyzed the information provided by

¹When interviewing EM officials, government officials, and stakeholders at the Hanford Site, we included both the Office of River Protection and the Richland Office. For counting purposes, when we discuss interviewing EM officials, stakeholders, and governments, we counted Hanford as one site.

EM officials at Headquarters and at the four sites in our review to identify sets of factors that could either help or hinder EM's ability to meaningfully engage with stakeholders and governments.

To obtain a range of views from stakeholders and government about their experiences engaging with EM, we selected and interviewed four to eight stakeholders and governments at each of the four selected cleanup sites—Hanford, Moab, Portsmouth, and Savannah River. We selected stakeholders and governments across a range of categories, including Tribal, federal, state, and local governments; site-specific advisory boards and advisory bodies; educational institutions; and community organizations and nonprofits. We developed semi-structured interview questions based on our identified leading practices and analyzed information obtained during these interviews for themes and illustrative examples of engagement. These findings are based on information from the four selected sites and are not generalizable across EM's 15 cleanup sites.

To assess the extent to which EM has a framework that guides its overall approach for engaging stakeholders and governments in the context of environmental cleanup, we analyzed DOE and EM orders and policies to determine what requirements or guidance exists for conducting stakeholder and government engagement. We interviewed officials from EM Headquarters, including officials from its Office of Communications and Stakeholder Engagement, to understand roles and responsibilities for stakeholder and government engagement, including changes stemming from reorganizations of these positions and units within EM Headquarters. To understand the types of plans that EM uses for engaging with its various stakeholders and governments, we collected and analyzed documents from Headquarters and its 15 cleanup sites.

To obtain detailed information about how EM engages with its stakeholders and governments across the complex, we developed and distributed a questionnaire to EM Headquarters and the EM Consolidated Business Center—which provides support to EM's smaller sites. This questionnaire was similar to that provided to selected EM sites and was based on the leading practices and associated key considerations. We also conducted a follow-up interview with EM Headquarters to ensure their questionnaire responses were complete and clear. We did not evaluate the extent to which actions by EM Headquarters to engage with its stakeholders and governments followed the leading practices for engagement.

**Appendix I: Objectives, Scope, and
Methodology**









We conducted this performance audit from August 2022 through September 2024 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Leading Practices and Key Considerations for Engaging Stakeholders and Governments about Environmental Cleanup

Based on key concepts from our review of the literature on stakeholder and government engagement, combined with review and input from subject-matter experts in this field, we identified a set of eight leading practices for how federal agencies should engage with their stakeholders and governments on environmental cleanup issues, decisions, and actions (see fig. 5). While we have defined and organized the practices individually, they are interrelated and reinforce each other; they are iterative and are not sequenced in any particular order.

Appendix II: Leading Practices and Key Considerations for Engaging Stakeholders and Governments about Environmental Cleanup

Figure 5: Leading Practices for Engaging Stakeholders and Governments Regarding Environmental Cleanup

Leading Engagement Practices	Key Considerations for Implementing Each Practice
 <p>Demonstrate agency commitment</p>	<ul style="list-style-type: none"> • Has agency leadership communicated a commitment to engagement? • Has the agency promoted a culture of engagement?
 <p>Ensure agency resources and capacity</p>	<ul style="list-style-type: none"> • Has the agency assessed and identified budgetary resources needed to support engagement? • Has the agency ensured that it has adequate workforce capacity to support engagement? • Has the agency established the structures, procedures, and tools needed to conduct engagement?
 <p>Clearly define and communicate goals and expectations</p>	<ul style="list-style-type: none"> • Has the agency defined the goals that it is trying to achieve by engaging stakeholders and governments? • Has the agency specified stakeholders' and governments' level of potential influence? • Has the agency defined constraints and limitations to the engagement process and to the final decision?
 <p>Systematically and iteratively identify and include relevant stakeholders and governments</p>	<ul style="list-style-type: none"> • Has the agency used a systematic and iterative approach to identify the full scope of potential stakeholders and governments? • Is the agency's inclusion of stakeholders and governments consistent with its goals for engagement?
 <p>Minimize barriers to meaningful participation</p>	<ul style="list-style-type: none"> • Has the agency designed the engagement process to ensure equitable access and participation? • Has the agency made information accessible and understandable?
 <p>Design engagement to fit the goals and context</p>	<ul style="list-style-type: none"> • Has the agency used engagement methods, tools, and formats that are appropriate given the goals and context? • Has the agency timed engagement appropriately given the goals and context? • Has the agency monitored and made needed adjustments to its engagement design?
 <p>Provide valid scientific information that addresses stakeholders' and governments' concerns</p>	<ul style="list-style-type: none"> • Has the agency produced scientific information that addresses stakeholders' and governments' values and concerns? • Has the agency integrated local knowledge into its analyses? • Has the agency provided accurate and credible scientific information?
 <p>Follow through on commitments to engagement</p>	<ul style="list-style-type: none"> • Has the agency followed through to provide agreed-upon opportunities for engagement? • Has the agency communicated changes and unexpected events? • Has the agency demonstrated how it used engagement results?

Source: GAO analysis and icons. | GAO-24-106014

Note: While we have defined and organized the practices individually, they are interrelated and reinforce each other; they are iterative and not sequenced in any particular order.

The following sections describe each leading engagement practice and corresponding key considerations for implementation. These descriptions are based on our analysis of literature on stakeholder and government engagement, particularly in the context of environmental cleanup, and include examples provided by one or more subject-matter experts who

reviewed them. The final section describes application of the leading practices.

Leading Practice: Demonstrate agency commitment

An agency should demonstrate a commitment to engaging stakeholders and governments in environmental cleanup decisions and actions and should promote a culture that supports doing so. Demonstrating this commitment helps reinforce to agency staff that engagement is critical to achieving the agency's cleanup mission and helps build confidence from those participating that the process is worth their time.

Key Consideration: Has agency leadership communicated a commitment to engagement?

Agency leaders should communicate—verbally, in writing, and in actions—that the agency is committed to engaging stakeholders and governments. Leaders play a key role in demonstrating an agency's commitment to engagement, and they should communicate this commitment both internally (to agency staff) and externally (to stakeholders and governments). Actions that leaders can take to signal commitment include making periodic visits to a cleanup site, participating in key meetings with stakeholders and governments, and, in such meetings, listening without distraction to what stakeholders and governments say.

Key Consideration: Has the agency promoted a culture of engagement?

To sustain a commitment to engagement, an agency needs to promote an organizational culture that supports it. Agencies that have successfully promoted a culture of engagement in their organization have taken steps such as defining an engagement-related strategic planning goal, creating units and positions dedicated to it, offering training and professional development opportunities related to it, and identifying and setting employee performance expectations for engagement activities.¹

Leading Practice: Ensure agency resources and capacity

An agency needs sufficient financial, human, and knowledge resources dedicated to stakeholder and government engagement if engagement is to be successful. Sufficient resources and capacity help ensure that an agency can plan and carry out meaningful engagement. Committing resources also helps demonstrate to stakeholders and governments that engagement is a priority.

¹We have previously reported on practices that federal agencies can use to improve their employees' sense of purpose and commitment toward their employer and its mission. See: GAO, *Federal Workforce: Additional Analysis and Sharing of Promising Practices Could Improve Employee Engagement and Performance*, [GAO-15-585](#) (Washington, D.C.: July 14, 2015).

Key Consideration: Has the agency assessed and identified budgetary resources needed to support engagement?

An agency should evaluate expected budgetary needs for engagement, given the scale and complexity of the environmental cleanup issues involved, and then determine whether and how those needs can be met. Inadequate resources can result in uneven funding of engagement efforts, and stakeholders' and governments' expectations for the type or extent of engagement may not be met. As we have previously reported, leveraging resources across agencies or organizations can be a useful strategy to enhance collaboration, especially when resources are limited.²

Key Consideration: Has the agency ensured that it has adequate workforce capacity to support engagement?

To successfully plan and carry out engagement, an agency should ensure that it has sufficient workforce capacity—in other words, that it has the right number of staff with the necessary mix of skills and expertise.³ Staff involved in engagement efforts should have skills and access to training in areas such as designing and implementing engagement processes, communicating scientific and technical information, and managing conflict. Agencies without in-house expertise in these areas should consult or contract with external entities who can provide it.

Key Consideration: Has the agency established the structures, procedures, and tools needed to conduct engagement?

To build organizational capacity for conducting engagement, an agency should develop and put in place the structures, procedures, and tools needed to plan, carry out, and follow through on engagement. An agency should adopt structures and procedures that allow different units to coordinate on engagement activities. For example, the unit responsible for interactions with stakeholders and governments should have procedures in place to share feedback, questions, and concerns with the agency's scientific and technical units. An agency should also develop internal knowledge-sharing tools and forums, such as communities of practice, working groups, and guidance and guidelines. Such tools and forums allow agency staff with expertise in engagement to share and document best practices and consult with others within the agency with less experience.

²GAO, Government Performance Management: Leading Practices to Enhance Interagency Collaboration and Address Crosscutting Challenges, [GAO-23-105520](#) (Washington, D.C.: May 24, 2023).

³We have previously reported on key principles for effective strategic workforce planning; see: GAO, *Human Capital: Key Principles for Effective Strategic Workforce Planning*, [GAO-04-39](#) (Washington, D.C.: Dec. 11, 2003). We have also reported on attributes of effective training and development programs; see: GAO, *Human Capital: A Guide for Assessing Strategic Training and Development Efforts in the Federal Government*, [GAO-04-546G](#) (Washington, D.C.: March 2004).

Leading Practice: Clearly define and communicate goals and expectations

An agency should clearly define its goals for engaging stakeholders and governments. Clear goals lay a foundation for identifying stakeholders and governments and appropriate methods for engaging them, and they serve as standards against which an agency can measure success. Communicating these goals, along with the scope and degree of influence that stakeholders and governments can expect in an environmental decision or action, provides transparency and a shared understanding of what the process may accomplish.

Key Consideration: Has the agency defined the goals that it is trying to achieve by engaging stakeholders and governments?

An agency should clearly define goals—that is, what it is trying to achieve by engaging stakeholders and governments—and then communicate the goals to those participating. By defining what “successful” engagement looks like, goals provide a basis for monitoring whether engagement is working as intended and for making adjustments as needed. Goals also inform all subsequent elements of process design, from who is involved to which engagement methods and tools are used.

Engagement can achieve a wide variety of goals, such as (1) improving an agency’s understanding of stakeholders’ and governments’ values and preferences regarding an environmental cleanup issue, (2) reducing conflict between the agency and stakeholders and government, (3) increasing the capacity of stakeholders and governments to understand scientific or technical information, and (4) achieving consensus about a cleanup decision or action.

Stakeholders and governments may come to a process with different ideas about what goals engagement should achieve. In these cases, co-defining goals with stakeholders and governments as the process proceeds may help reduce conflict and produce outcomes that meaningfully address the concerns and priorities of those who are participating.

Key Consideration: Has the agency specified stakeholders’ and governments’ level of potential influence?

An agency should clarify the level of potential influence or authority that stakeholders and governments will have in designing the engagement process and in making decisions. The agency should communicate these expectations explicitly. Not doing so carries risks, including that stakeholders and governments will perceive that they have more influence over the process or decision than an agency is willing or able to deliver, which may undermine their trust in the process and its outcomes regardless of how much engagement has occurred.

A wide range of potential influence is possible (see fig. 6), and the level of influence may vary over the course of an engagement process as, for

Appendix II: Leading Practices and Key Considerations for Engaging Stakeholders and Governments about Environmental Cleanup

example, an agency learns that a greater degree of stakeholder and government influence is needed for specific activities or decisions. On one end of a spectrum, stakeholders and governments may have no opportunity for influence. This could be the case, for example, when an agency has made a decision in response to a statutory requirement and the engagement is aimed at informing stakeholders and governments about the decision. On the other end, stakeholders and governments may be empowered to make the decision themselves. Several levels of potential influence exist in between these extremes, such as a level in which an agency invites stakeholders or governments into a decision-making process and provides ongoing opportunities for them to give input. The level of influence an agency is willing and able to provide will depend on its goals for engagement and other factors, such as the issue at hand and any statutory or regulatory requirements.

Figure 6: A Spectrum of Potential Levels of Influence That Stakeholders and Governments May Have in Engagement Processes and Decisions

Level of influence:	Inform	Consult	Involve	Collaborate	Empower
Role for stakeholders and governments:	To receive information from the agency about the process or decision.	To provide input or feedback to the agency on the process or decision.	To work directly with the agency to ensure their feedback is understood and considered.	To partner with the agency in all aspects of making the decision.	To make the decision themselves.

Source: GAO analysis of International Association for Public Participation and Environmental Protection Agency information. | GAO-24-106014

Key Consideration: Has the agency defined constraints and limitations to the engagement process and to the final decision?

An agency should clearly define and communicate constraints and limitations to the engagement process and to any final decisions or outcomes. These may include budgetary, legal, and timing constraints; limits to information that may be shared; parts of an issue where input or influence is not desired or possible; and finalized decisions that cannot be revised. By transparently sharing information about constraints and limitations, an agency can help set realistic expectations among those participating about what an engagement process may or may not achieve.

Leading Practice: Systematically and iteratively identify and include relevant stakeholders and governments

An agency should identify the full scope of potential stakeholders and governments and include participants from that scope using defined criteria. A systematic, iterative approach to identifying and including stakeholders and governments helps ensure that all important groups can participate. Conversely, identifying and including stakeholders and governments on an ad-hoc basis risks excluding important groups, which may bias outcomes and jeopardize the legitimacy and durability of environmental cleanup decisions and actions.

Key Consideration: Has the agency used a systematic and iterative approach to identify the full scope of potential stakeholders and governments?

An agency should use a systematic and iterative approach to identify the full scope of stakeholders and governments who may have an interest in or be affected by the decision or issue at hand. While the inclusion of some stakeholders and governments may be obvious based on an agency's prior knowledge and experience, others may be less so, including individuals and groups who have not been well-represented in past engagement processes. Failing to identify these stakeholders and governments risks excluding important perspectives. In addition, to keep pace with changes in community demographics and interests, an agency should take an iterative approach to identifying stakeholders and governments by periodically revisiting and refreshing its list.

A wide variety of approaches and methods exist to help agencies systematically and iteratively identify stakeholders and governments. For example, the Environmental Protection Agency's (EPA) "situation assessment" approach involves identifying all the viewpoints and interests that may be important to a community (such as health, safety, pollution, and jobs), and then matching specific groups and individuals to those identified interests. In cases where an agency has less understanding of a community's viewpoints and interests, approaches like focus groups and semi-structured interviews with small groups of known stakeholders and governments can provide insights about what matters to a community and who else should be included.

Key Consideration: Is the agency's inclusion of stakeholders and governments consistent with its goals for engagement?

An agency should use criteria (or a rationale) for identifying which stakeholders and governments from the full scope to include in any particular engagement effort. In cases where it is infeasible to include the full scope of stakeholders and governments in an engagement effort, an agency should consider the goals for engagement when deciding whom to include. For example, engagement with the goal of improving an agency's understanding of a community's overall values and preferences may call for seeking participants who are representative of the general population. Conversely, engagement for the purpose of reaching consensus on a complex decision may require identifying a small set of

stakeholder and government representatives who have deep interest and time to invest in an issue. Including stakeholders and governments who have a range of views on an issue or project—including those who are vocally opposed—is important for improving the legitimacy and durability of an agency’s decision-making.

Leading Practice:
Minimize barriers to meaningful participation

An agency should structure the engagement process so that stakeholders and governments—particularly those who have not been included in past efforts—can participate and have the information necessary to do so in a meaningful way. By diagnosing barriers to access and participation and taking steps to minimize them, an agency can better ensure an equitable, inclusive process.

Key Consideration: Has the agency designed the engagement process to ensure equitable access and participation?

An agency should design the engagement process in a way that ensures equitable access and participation. To ensure an equitable, inclusive process, an agency needs to diagnose barriers to access and participation and take steps to minimize them. Barriers to equitable access can include logistical issues, such as consistently scheduling meetings at times and locations that do not work for certain demographic or geographic groups. Ways to improve access—and to demonstrate an agency’s commitment to engagement—include asking stakeholders and governments where and how they prefer to meet, and then honoring those requests whenever possible, as well as offering to meet with stakeholders and governments in venues and locations that are geographically close to them.

Barriers to equitable participation can include differences in resources, power, and influence that various groups bring to the engagement process. For example, some stakeholders may be represented by organized groups that are experienced and well-equipped to engage with an agency, while others may have no organization representing their interests nor any prior experience interacting with a federal agency. Unless addressed, such differences can mean that stakeholders and governments with relatively more resources, experience, and power have more influence over the scope and outcomes of an engagement process than those with less.

Key Consideration: Has the agency made information accessible and understandable?

An agency should provide information about the engagement process and about the issue at hand in ways that are accessible and understandable to all stakeholders and governments. Technology and language barriers can prevent stakeholders and governments from accessing information. For example, populations in remote areas may not have reliable internet access, meaning that an agency needs to provide

information via postal mail or in accessible public locations. Some stakeholders may need information provided in languages other than English.

An agency also needs to ensure that scientific and technical information is accessible and understandable. It should communicate scientific and technical information using plain language in a way that stakeholders and governments without extensive background in the subject-matter can understand. When stakeholders and governments do not have the expertise or capacity needed to interpret scientific or technical information, an agency should arrange technical assistance, host public education workshops, or take other steps to make such information more accessible. For example, an agency could provide or identify resources for a community to hire an independent expert to analyze and summarize findings from an Environmental Impact Statement—an often lengthy and scientifically technical legal document that outlines the impact of a proposed project on its surrounding environment—or other large technical document.

Leading Practice: Design engagement to fit the goals and context

An agency should design engagement—including how and at what points it interacts with stakeholders and governments—to be responsive to the established goals and to the context. There is no single best design for engagement. Many different methods, tools, and formats for structuring interactions with stakeholders and governments can work well under different circumstances. Instead of a one-size-fits-all approach, success depends on tailoring the engagement design to fit the situation and on a willingness to learn and adapt as the process evolves.

Key Consideration: Has the agency used engagement methods, tools, and formats that are appropriate given the goals and context?

An agency should select engagement methods, tools, and formats that serve the established goals and expectations for the process—including the level of influence promised to stakeholders and governments—as well as other contextual factors, such as the type and number of individuals and groups, the stage in the decision-making process, and relevant socio-cultural and environmental factors (see fig. 7). For example, engagement that occurs in the context of mistrust or conflict among stakeholders and governments may call for facilitated meeting formats in which an independent mediator helps manage the discussion. In addition, certain seating arrangements—such as where individuals are seated around a table—may be preferable since such arrangements can convey that everyone’s voice is equally important. Numerous engagement methods, tools, and formats exist, including public hearings, focus groups, workshops, open houses, advisory committees, deliberative polling, and listening sessions.

Appendix II: Leading Practices and Key Considerations for Engaging Stakeholders and Governments about Environmental Cleanup

Figure 7: Example Methods of Engagement That Correspond to the Level of Potential Influence Provided to Stakeholders and Governments

Level of influence:	Inform	Consult	Involve	Collaborate	Empower
Role for stakeholders and governments:	To receive information from the agency about the process or decision.	To provide input or feedback to the agency on the process or decision.	To work directly with the agency to ensure their feedback is understood and considered.	To partner with the agency in all aspects of making the decision.	To make the decision themselves.
Example methods:	Fact sheets Websites Newsletters	Public comments Surveys Public meetings	Workshops Focus groups	Advisory bodies Consensus workshops ^a	Ballots Citizen juries ^b

Source: GAO analysis of International Association for Public Participation and Environmental Protection Agency information. | GAO-24-106014

Note: Some methods may be relevant to multiple levels of influence, depending on how the method is designed and implemented. The Environmental Protection Agency’s (EPA) “Public Participation Guide” provides detailed descriptions of these and other methods; see EPA, “Public Participation Guide” (Washington, D.C. July 3, 2024), accessed July 9, 2024, <https://www.epa.gov/international-cooperation/public-participation-guide>.

^aConsensus workshops are a type of public meeting that allows stakeholders and governments to be involved in assessing an issue or proposal and working together to find common ground and deliver consensus-based input to an agency, according to EPA’s “Public Participation Guide.”

^bCitizen juries involve creating a “jury” comprised of a representative sample of community members who are briefed in detail on a particular issue or project, according to EPA’s “Public Participation Guide.” The agency typically presents a range of possible options, which jurors consider and make a judgement as to the most attractive option for the community. In most cases, the agency agrees in advance that it will implement whatever decision the jury makes.

Key Consideration: Has the agency timed engagement appropriately given the goals and context?

An agency should ensure that the timing of engagement is appropriate given the established goals and expectations for the process. Often, engaging stakeholders and governments early on in a decision or project is beneficial. This provides sufficient time for those participating to develop familiarity and understanding of an issue and ensures that any outputs from the engagement process come soon enough to be useful in decision-making. Certain goals for engagement, including those related to building trust and to reaching a cleanup decision that is seen as fair and legitimate, require engaging stakeholders and governments regularly and early enough that they can influence how a problem or issue is defined and how the engagement process unfolds.

Key Consideration: Has the agency monitored and made needed adjustments to its engagement design?

An agency should be willing and able to adjust its engagement design as the process proceeds. It should take an adaptive management approach to engagement whereby it monitors how well its engagement design is working, seeks and accepts feedback from stakeholders and

governments participating in the process, and makes adjustments as needed.⁴

Leading Practice: Provide valid scientific information that addresses stakeholders' and governments' concerns

An agency should treat stakeholders' and governments' values, concerns, and local contextual knowledge as essential information that should inform scientific and other analyses. Agency experts and stakeholders and governments bring different, yet important, types of knowledge about any environmental cleanup issue or decision. Specifically, experts bring scientific and technical expertise and judgements, while stakeholders and governments bring detailed understandings of the local context and of their own values, concerns, and priorities. Successful engagement requires providing valid scientific information that considers local knowledge and is responsive to what stakeholders and governments care about.

Key Consideration: Has the agency produced scientific information that addresses stakeholders' and governments' values and concerns?

An agency should work with stakeholders and governments to understand their values, concerns, and priorities related to an issue, and use that knowledge to inform the scope of scientific and technical information that it collects and communicates. Stakeholders may have concerns about types of risks or aspects of an issue that differ from how the agency has framed the issue. For example, they may be concerned about the possibility of contamination in an area that an agency has not previously included in the scope of a scientific assessment. An agency should take these concerns seriously, direct its scientific and technical expertise toward producing information that addresses them, and then share this information with stakeholders and governments.

Key Consideration: Has the agency integrated local knowledge into its analyses?

An agency should use stakeholders' and governments' local knowledge about an issue to bolster its scientific and other analyses. Stakeholders and governments have on-the-ground knowledge and experience that agency experts do not. Integrating this local knowledge with an agency's existing knowledge may contribute to a more comprehensive understanding of how local natural and built environments work and lead to decisions or outcomes that better address the issue at hand.

⁴We have previously reported on key practices that can help federal leaders and employees develop and use evidence to effectively manage and assess the results of federal efforts; see: GAO, *Evidence-Based Policymaking: Practices to Help Manage and Assess the Results of Federal Efforts*, [GAO-23-105460](#) (Washington, D.C.: July 12, 2023).

Indigenous Knowledge is a type of knowledge that agencies should consider when Tribes willingly provide it.⁵

Key Consideration: Has the agency provided accurate and credible scientific information?

An agency should provide stakeholders and governments with high-quality scientific information that is understandable, accurate, and credible. According to the National Academies, scientific communities have developed norms and practices that help ensure the accuracy and credibility of scientific information.⁶ These include making assumptions and uncertainties explicit, making analytical methods transparent, making data available for reanalysis, and using independent or peer review.⁷ In addition, providing support for stakeholders and governments to collect their own scientific data at or near their location—such as air, soil, and groundwater samples—could increase the credibility of the data upon which decisions are made. With high-quality scientific information, stakeholders and governments are able to engage with a shared base of knowledge and better understand how and to what extent an issue or potential decision may affect their values, concerns, and priorities.

Leading Practice: Follow through on commitments to engagement

An agency should follow through on what it told stakeholders and governments to expect from an engagement process. This includes delivering on agreed-upon steps in the engagement process, communicating changes and unexpected events that inevitably occur, and demonstrating how it incorporated the results of engagement into an environmental cleanup decision or action. Following through on commitments is key to earning trust over the long-term. Listening and

⁵According to a 2022 memorandum from the Office of Science and Technology Policy and Council on Environmental Quality, Indigenous Knowledge is a body of observations, oral and written knowledge, innovations, practices, and beliefs developed by Tribes and Indigenous Peoples through interactions and experience with the environment. This memorandum provides guidance on how federal agencies should recognize and include Indigenous Knowledge in research, policy, and decision-making. Office of Science and Technology Policy and Council on Environmental Quality, *Implementation of Guidance for Federal Departments and Agencies on Indigenous Knowledge* (Washington, D.C.: Nov. 30, 2022).

⁶National Research Council of the National Academies, Committee on the Human Dimensions of Global Change, *Public Participation in Environmental Assessment and Decision Making* (Washington, D.C.: The National Academies Press, 2008).

⁷In July 2022 we reported that the scientific community had developed a variety of strategies to promote more rigor and transparency in the design, execution, analysis, and reporting of research results. These strategies include making certain aspects of the research process accessible to others before any research is conducted, using preprints to share results before publication, and maintaining data repositories to share research methods and data. See: GAO, *Research Reliability: Federal Actions Needed to Promote Stronger Research Practices*, [GAO-22-104411](#) (Washington, D.C.: July 28, 2022).

learning from stakeholder and government input can result in decisions or actions that are more widely accepted and that better address an environmental cleanup issue than had the agency acted alone.

Key Consideration: Has the agency followed through to provide agreed-upon opportunities for engagement?

An agency should deliver what it promised to stakeholders and governments regarding opportunities for engagement. To build and maintain trust with stakeholders and governments, it should make a demonstrated effort to hold meetings, provide information, and follow through on other agreed-upon steps in the engagement process.

Key Consideration: Has the agency communicated changes and unexpected events?

An agency should notify stakeholders and governments of changes and unexpected events in a timely manner. Even with good-faith effort and careful planning, external factors and lessons learned may prompt changes to the methods, roles and responsibilities, and timing of engagement. An agency should clearly and promptly communicate such changes to stakeholders and governments. Unexpected events related to the issue or decision at hand—such as safety incidents—should also be communicated in a prompt manner.

Key Consideration: Has the agency demonstrated how it used engagement results?

As appropriate given the goals for engagement, an agency should incorporate and make use of results gained from the engagement process. It should follow up with stakeholders and governments to explain how it incorporated feedback or other outcomes from the engagement process—or to explain why it was unable to do so. Demonstrating that an agency heard stakeholders' and governments' input, such as by issuing a Summary of comments received, is important even when an agency is not able to act on all input. Failure to respond to or act upon the results of engagement may decrease stakeholders' and governments' motivation to participate in future engagement efforts.

Application of Leading Practices

The leading practices we identified apply to federal agency engagement in the context of environmental cleanup issues, decisions, and actions. This includes nuclear and hazardous waste cleanup and other types of environmental cleanup. The practices apply to engagement at the national level (such as engagement led by a federal agency's headquarters office) and at the state and local level (such as engagement led by a federal agency's regional or site office).

Federal laws, such as the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, and the Resource Conservation and Recovery Act of 1976, as amended, and their implementing regulations govern agencies' environmental cleanup activities and establish requirements for public and community

Appendix II: Leading Practices and Key Considerations for Engaging Stakeholders and Governments about Environmental Cleanup

engagement. The leading practices are not intended to replace or supersede stakeholder and government engagement processes required under applicable laws, regulations, or legal agreements. Instead, they are intended to apply to engagement practices and activities independent of those that are required.

The leading practices we identified apply to federal agency engagement with a wide range of stakeholders, such as local communities and nonprofit organizations, and governments, such as regulatory agencies and Tribal Nations.⁸ The leading practices are not intended to describe or replace how an agency should conduct consultation with Tribal Nations,⁹ and they do not specifically cover how an agency should interact with Members of Congress or congressional committees.¹⁰

⁸For additional information about how federal agencies should collaborate or coordinate on joint activities, see [GAO-23-105520](#).

⁹Executive Order 13175 directs federal agencies to have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications. 65 Fed. Reg. 67249 (Nov. 9, 2000). In November 2022, a Presidential Memorandum established uniform minimum standards for tribal consultation. 87 Fed. Reg. 74479 (Dec. 5, 2022). In addition, some federal laws and regulations require federal agencies to consult with tribes in specific circumstances. Engagement is not a replacement for consultation, although engagement may identify tribes for the federal agency to consult with and inform the consultation.

¹⁰We have previously reported on practices that federal agencies can use when consulting with Congress; see: GAO, *Managing for Results: A Guide for Using the GPRA Modernization Act to Help Inform Congressional Decision Making*, [GAO-12-621SP](#) (Washington, D.C.: June 15, 2012.)

Appendix III: Comments from the Department of Energy



Department of Energy

Washington, DC 20585

August 20, 2024

Mr. Nathan Anderson
Director
Natural Resources and Environment
U.S. Government Accountability Office
Washington, DC 20548

Dear Mr. Anderson:

The Department of Energy (DOE) Office of Environment Management (EM) appreciates the opportunity to comment on the U.S. Government Accountability Office (GAO) draft report, *NUCLEAR WASTE CLEANUP: Adopting Leading Practices Could Strengthen DOE's Engagement with Stakeholders and Governments (GAO-24-106014)*.

EM's mission represents the Government's strong commitment to cleaning up the environmental legacy of the national defense programs that helped end World War II and the Cold War. From managing one of the largest groundwater and soil remediation efforts in the world to opening the only deep geological repository for transuranic waste, significant progress has been achieved. EM has been able to progress the cleanup mission due to the positive relationships with those who have a stake in the EM program, including tribal, state and local officials, communities and industry partners, the workforce and the public.

EM continues to strengthen collaborative working relationships with stakeholders and governments involved in or affected by the cleanup mission. EM sites are fortunate to be surrounded by communities that are engaged, informed, and leading the way in shaping their own future as we all share a deep commitment to completing the EM cleanup mission while remaining focused on the safety and security of human health, the community, and the environment.

GAO's report and recommendations provide input that will help EM strengthen stakeholder and government engagement. EM concurs with GAO's recommendations and responses are provided in the enclosure. Technical comments on the draft report have been provided separately.

**Appendix III: Comments from the Department
of Energy**

2

If you have any questions, please contact me or Ms. Carrie Meyer, Director for Communications and Stakeholder Engagement, at (301) 830-3554.

Sincerely,



Candice Trummell Robertson
Senior Advisor for Environmental Management

Enclosure

Enclosure

Management Response to Recommendations
GAO-24-106014 Draft Report, NUCLEAR WASTE CLEANUP: Adopting Leading Practices Could Strengthen DOE's Engagement with Stakeholders and Governments

Recommendation 1: The Senior Advisor for the Office of Environmental Management should conduct and document an objective evaluation of the operation and effectiveness of the EM's SSABs, including evaluating challenges related to the recruitment and appointment of board members, representation, and board attendance and member turnover.

Management Response: Concur.

The Office of Environmental Management (EM) will facilitate an evaluation of the operations and effectiveness of EM Site-Specific Advisory Boards. This evaluation will include analyzing all eight local boards (e.g., Hanford, Idaho, Los Alamos, Nevada, Oak Ridge, Paducah, Portsmouth, and Savannah River) and Headquarters program management of the EM advisory boards. The expected mechanism to complete an objective evaluation will require planning for additional support, engagement, and development of the evaluation.

Estimated Completion Date: January 31, 2026.

Recommendation 2: The Senior Advisor for the Office of Environmental Management should develop and use a national framework that defines EM's strategy for engagement with stakeholders and governments across the EM complex and that incorporates leading elements of practices for engagement.

Management Response: Concur.

EM will develop a national framework to define EM's strategy for engagement across the complex that incorporates leading engagement practices.

Estimated Completion Date: February 28, 2025.

Recommendation 3: The Senior Advisor for the Office of Environmental Management, in coordination with EM site leadership, should develop engagement plans at the site or regional level that institutionalize expectations for how to engage with stakeholders and governments with a cohesive voice and incorporate leading elements of practice for engagement.

Management Response: Concur.

EM will define engagement expectations, to include best practices, and in coordination with site leadership, develop site-specific engagement plans. EM will regularly assess these expectations to maintain best standards of practice.

Estimated Completion Date: May 30, 2025.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Nathan Anderson, Director, (202) 512-3841 or andersonn@gao.gov.

Staff Acknowledgments

In addition to the contact named above, Amanda K. Kolling (Assistant Director), Tama Weinberg (Analyst in Charge), Katherine Killebrew, and Sara Younes made key contributions to this report. Also contributing to this report were Adrian Apodaca, Kathleen Bever, Mark Braza, Colleen Candrl, Gwen Kirby, Serena Lo, Claire Saint-Rossy, and Jeanette Soares.

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