



Ensuring Long-Term Success:
Recommendations for the Next
Administration on the U.S. Department of
Energy's Environmental Management
Mission

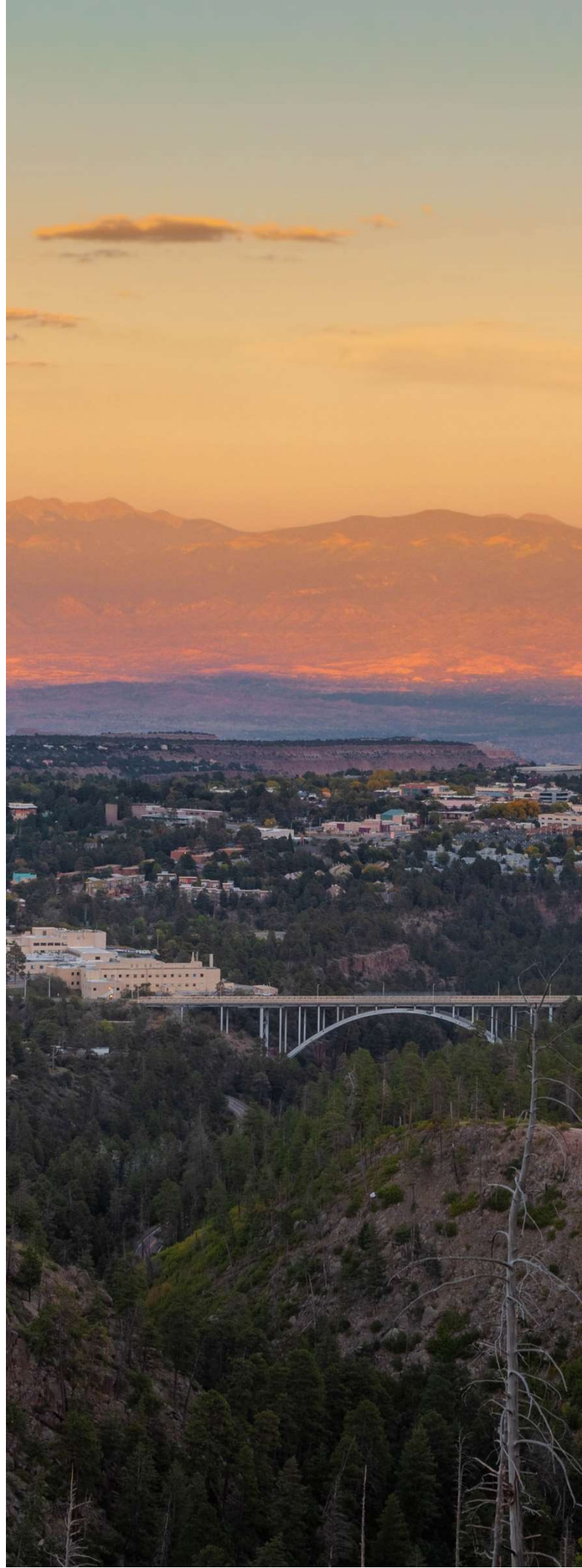


Executive Summary

The U.S. Department of Energy (DOE) Office of Environmental Management (EM) must continuously examine its work and evolve. The Energy Communities Alliance (ECA) is calling on the next Administration to launch a comprehensive review of all aspects of the EM program.

EM actively cleans up the most difficult and technically challenging nuclear and hazardous waste sites around the country. The work performed at these sites, which dates to the Manhattan Project, has resulted in a significant environmental liability that directly impacts the health and economies of the communities near DOE sites. The scope of this liability is immense – it currently costs in the hundreds of billions of dollars and represents one of the largest overall financial costs to the entire federal government. For 35 years, addressing this liability, and meeting the government’s obligations to the communities around DOE sites, has been the task of EM.

ECA represents the communities adjacent to nuclear facilities including the specific communities adjacent to EM sites. ECA and its local government members are committed to EM performing its cleanup mission in a safe, efficient and transparent manner. Our communities that have played such a pivotal role in hosting and supporting the sites key to U.S. national security and prosperity deserve nothing less. While EM has made a significant amount of progress, there are still decades to go until the current legacy cleanup mission is accomplished, and given what still needs to be done, the program can be better positioned for long-term success.



Over the years we have learned a lot, and we have forgotten at times what has brought success. As we move forward, we continue to have much to learn about what remains to be cleaned up and how best to accomplish the EM mission. The EM program, currently an approximately \$8 billion annual effort, faces a host of issues including:

- Addressing some of the most environmentally contaminated sites in the country, many of which still have unknown risks
- Managing tons of nuclear, radioactive and hazardous materials in liquid, solid and other forms
- Managing approximately 40 negotiated cleanup agreements to address hazardous waste with state regulators and the U.S. Environmental Protection Agency
- Relying on and overseeing a national network of contractors that include large and small businesses across most of the country
- Requiring a skilled and specialized workforce while facing significant attrition concerns
- Lacking disposal capability for the most complicated wastes to address
- Closing out sites where legacy cleanup is being completed while also taking on new work from other DOE programs
- Recognizing that “completed” cleanups are not always complete and that the “risk” levels selected as the cleanup level are not always sufficient for the protection of human health and the environment for the long-term

RIPE FOR REVIEW: TIME FOR A THOROUGH LOOK AT ALL OF DOE CLEANUP

ECA is calling on the next Administration to launch a comprehensive review of all aspects of the EM program. Such a review should not be limited to EM work, but also examine how EM is integrating with other Departmental programs, including the National Nuclear Security Administration, and the offices of Science, Nuclear Energy and Legacy Management, among others. EM does not operate in a vacuum and solely reviewing EM will not accomplish the goal of the needs of DOE.

Given what EM has accomplished so far, and what remains to be completed, including the possibility of new tasks, now is the right time for a new foundational look at the program. This review should include in-depth, and honest, assessments of the highest-risk issues at each site, as jointly agreed upon with federal and state regulators, Tribal nations and local governments; how DOE and EM are working with local governments on all aspects of cleanup, including long-term stewardship and future development strategies; how regulatory strategies and approaches are leading to tangible and lasting cleanup progress; how EM is ensuring it benefits from the best of private industry and maintains the necessary skilled workforce necessary for the long-term and how DOE is safely and effectively managing and disposing of all waste under its responsibility, among other issues.

To start the review process, ECA has developed a set of concrete recommendations for the next Administration to utilize with EM and other DOE offices to re-establish a firm foundation for continued cleanup success, including:

- Establishing disposal paths for every type of radioactive and hazardous waste, including ensuring both private and public sites are available and utilized
- Re-evaluate EM's use of the end-state contracting model so that more funds are available for actual work
- Ensuring regulatory agreements are achievable and balance short- and long-term needs
- Improving workforce planning to address EM "brain drain" and long-term needs for skilled talent of all kinds
- Continuing to focus on economic/energy development benefits
- Maintaining robust local, state, tribal government and stakeholder engagement at each site
- Continuing to focus on economic/clean energy development as cleanup benefits
- Clarifying DOE policy on how hazardous and radioactive materials discovered at "completed sites" will be addressed to ensure that the cleanup is protective of human health and the environment and the local community is not responsible for DOE's legacy waste cleanup
- Reconstituting a dedicated nuclear waste organization within DOE to address high-level waste and spent nuclear fuel issues



ECA members and staff are available as expert resources to all involved in the Administration transition.

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“Without disposal, there can be no successful cleanup and ... without successful local, state and Tribal government and stakeholder engagement and support, there can be no successful disposition.”

Moving Forward

EM’s greatest challenges are still to come, and work needs to begin now to address them and ensure this mission is completed safely, and in the most comprehensive, effective and long-lasting manner.

EM and the next Administration need to understand that one of the foundational challenges remaining for cleanup success is the availability of disposal capability and sites – especially off-site. Cleanup progress is severely hampered at several sites as DOE is either disposing of more items at the sites in large landfills (DOE calls them disposal cells) contrary to past representations to some communities; or DOE does not have a disposal pathway for some of the highest-risks wastes, such as high-level waste, Greater-than-Class-C (GTCC) and spent nuclear fuel. These disposal issues also force EM to spend approximately half of its \$8 billion dollar budget each year on storage and security versus cleanup and disposal.

This challenge cannot just be kicked down the road. Instead, the scope and scale of this disposal challenge should be made clear to the communities near EM sites, so they can have a meaningful say in its solution, along with Congress, regulators, and the broader public. As we wrote in our paper, [“Disposal Drives Cleanup: Re-energizing Momentum for Disposal Solutions for Radioactive Waste,”](#)

“Without disposal, there can be no successful cleanup and ... without successful local, state and Tribal government and stakeholder engagement and support, there can be no successful disposition.”





Time for a Comprehensive Review

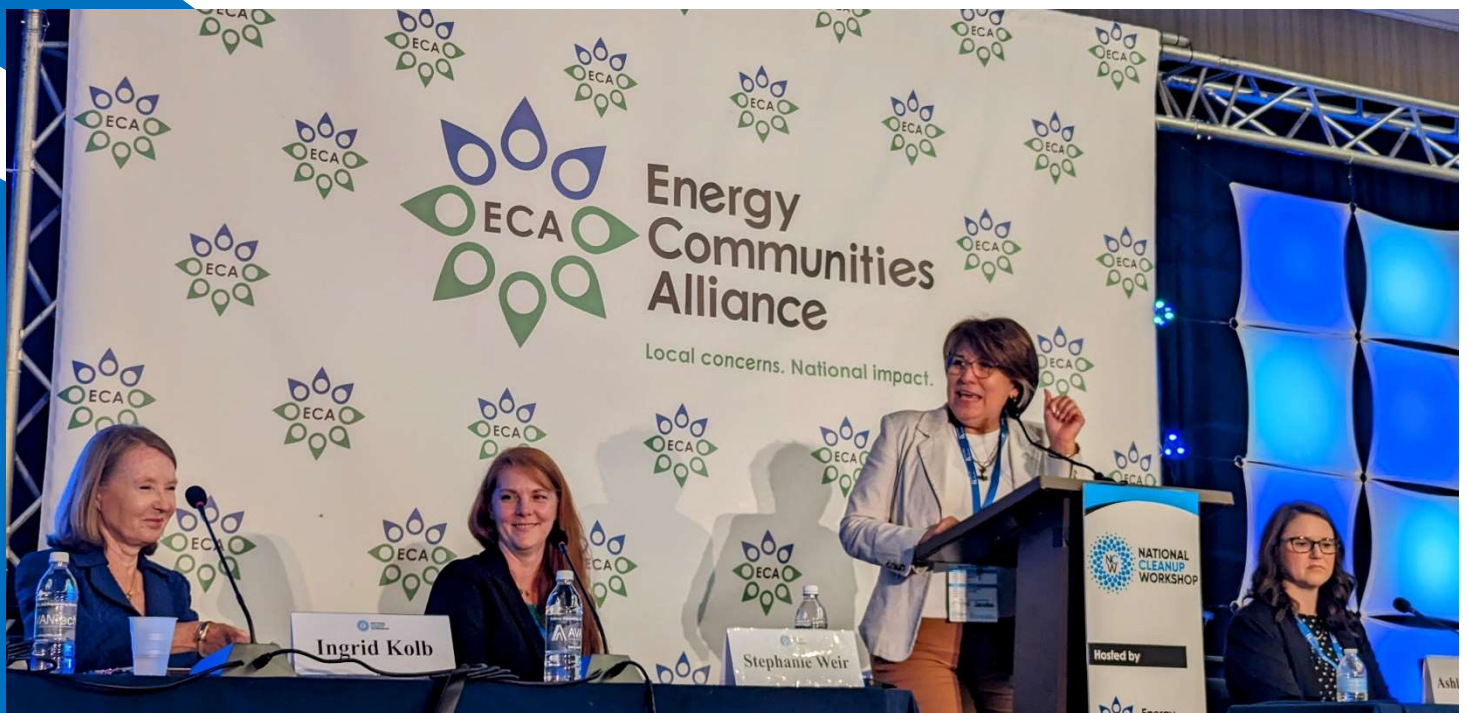
For most, if not all, of the challenges EM faces, the technical solutions are known. However, DOE will need to make difficult decisions that it has not made for a number of years to implement these solutions and drive continued progress. To that end, ECA calls on the next Administration to launch a substantive review of the entire EM program, including how EM integrates with other key Departmental programs (such as the National Nuclear Security Administration (NNSA) and the offices of Nuclear Energy, Science and Legacy Management, among others). Given what EM has accomplished so far, and what remains to be completed, including the possibility of new tasks from programs like NNSA and the Office of Science, now is the right time for a new look at the program.

The intent of this comprehensive review would not be to issue a cursory assessment that all is well or just review EM. Instead, ECA and its members communities would expect this assessment to take a fundamental look at DOE's entire cleanup effort, including both active sites and sites where work has been completed overseen by the Department's Office of Legacy Management, based on the realities of the scope and timeframe of the mission remaining to identify the lingering challenges, identify the solutions and make the hard decisions necessary to implement and solve. This assessment should examine a broad range of issues, such as:

- The role of each program office in EM's cleanup program.
- The effectiveness of DOE's relationships with the local communities near cleanup sites, including how DOE incentivizes the reuse of property for economic development,

including new nuclear public mission and private businesses; and how sites obtain local government services, among other issues.

- EM's prioritization scheme for its work and whether there are opportunities for acceleration and, if so, what budgetary or other needs are required.
- The regulatory requirements exist at each EM site, their reasonableness and the sufficiency of EM budgets to meet them.
- The main technical challenges facing each EM site, including what, if any, stranded waste or waste without an existing disposal capacity may exist.
- EM's contracting approaches for work at its sites to ensure maximum performance and that available funding is being utilized most effectively to perform actual work.
- The role of, and potential for, the national laboratories and national universities in assisting with the remaining technical challenges facing cleanup progress.
- The current disposal capabilities available to EM, including whether they are being used in a manner to support local communities near EM sites and if new capabilities are necessary to address the full set of current and anticipated wastes.
- The effectiveness of DOE's current long-term stewardship activities



Recommendations

We also have developed a set of concrete recommendations to help jump-start this broad review. We believe these recommendations can help ensure a firm foundation for the success not just of EM, but all of DOE, in advancing the cleanup mission. These recommendations range from the importance of sustained positive engagement with local communities, to re-evaluating contracting approaches, to maintaining momentum on ensuring adequate safe disposal capabilities.

We recognize and know the successes and challenges of EM over the past 35 years. We have appreciated the environmental benefits of tackling contamination dating back almost 80 years. The men and women of the EM workforce are members of our communities. We have seen and enjoyed the positive impacts from the baseball fields to local businesses that have sprung up to support the EM effort. The next Administration has an opportunity to make a lasting mark on U.S. history, and to aid those communities that have done so much for this country, by prioritizing the EM mission and ensuring its strong performance.

“The next Administration has an opportunity to make a lasting mark ... by prioritizing the EM mission and ensuring its strong performance.”

Ensure Safe and Available Disposal Capability is Available for All Waste Aligned with Local Community Needs

As we have stated throughout this paper, a key challenge EM now faces, and will be a challenge the next Administration will have to address, is ensuring there is sufficient safe and effective disposal capabilities for ALL of the waste DOE must disposition.

This includes disposal of Greater-than-Class-C (GTCC) low-level waste (LLW). There is currently no disposal path for this material, which is impacting cleanup of EM sites such as the West Valley Demonstration Project in New York state; along with commercial nuclear power plants. The lack of a GTCC disposal site also has the potential to hamper EM's use of its high-level waste interpretation, which can accelerate the cleanup of tank waste, given that some of the material that could be covered by the interpretation will require such a disposal pathway.

DOE is responsible for identifying a disposal site and disposing of any GTCC LLW, whether commercially generated or DOE-owned GTCC-like waste, under the Low-Level Radioactive Waste Policy Amendments Act of 1985. A 2016 Final Environmental Impact Statement (FEIS) identified land disposal at generic facilities and/or WIPP as preferred options for the disposal of GTCC LLW and GTCC-like waste. For its part, DOE appears to have completed all of the necessary regulatory actions

except issuing a final Record of Decision on GTCC disposal.

While DOE is responsible for identifying a GTCC LLW disposal site, the NRC is responsible for approving a site that can dispose of commercially generated waste. In April 2022, the NRC approved the proposal for issuance of a new rule that consolidates and integrates criteria for licensing the disposal of GTCC LLW. The new proposed rule would provide for Agreement State licensing of those GTCC LLW streams that meet the regulatory requirements for near-surface disposal and do not present a hazard such that the NRC should retain disposal authority.

The remaining actions that need to be completed before a GTCC LLW disposal site can be established include gaining the support of local communities and other stakeholders affected by a potential GTCC LLW disposal site; and Congress addresses the "await action by Congress" requirement as specified in 2005 Energy Policy Act (EPACT). ECA calls on the next Administration to make finalize a disposal path for GTCC waste a priority. In the next Administration, DOE should push to work with Congress, the NRC, state officials, stakeholders and others to wrap up the remaining actions necessary to finalize a disposal site and finally establish a pathway for eliminating this material.

In addition, DOE, through its office of Nuclear Energy, is responsible for long-term management and disposal of federal and commercial high-level waste and spent nuclear fuel. We have been heartened to see over the past few years new energy

from DOE and Congress on moving forward with a consent-based approach for siting interim storage, and potentially permanent, disposal facilities for these materials. We urge the next Administration to redouble efforts to work with Congress to provide clarity on the path forward for both interim and permanent disposal facilities.

As we said in our “Disposal Drives Cleanup” report, “As DOE now recognizes, the consent-based siting process must be driven by communities, in close collaboration with the public, interested groups, and governments at the Tribal, state, and local level. There should be a phased approach supported by sound science, and recognition that no one-size-consent-agreement will fit all.” We strongly urge the next Administration to continue consent-based siting with heavy engagement with communities, Tribal representatives and

stakeholders. Addressing high-level waste and spent nuclear fuel is a key responsibility and obligation of the government, and the long-term presence of these materials in the communities that already sacrificed during World War II and the Cold War is an unfair burden.

We also ask the next Administration to work with DOE and Congress to establish the legal framework to allow for interim storage sites to be established. Under the Nuclear Waste Policy Act, the government cannot move forward with construction of interim storage sites if a permanent disposal facility is not yet in operation. Given the lengthy amount of time that likely will be needed to site and construct a permanent disposal site, it is imperative that progress toward the creation of interim sites be maintained and encouraged.



Re-assess Use of End-State Contracting

The vast majority of EM's annual budget --- approximately 90 percent --- is utilized through the contracts in place at cleanup sites. EM's cadre of cleanup contractors, drawn from the best of the environmental and engineering industries, play a vital role in advancing cleanup progress.

In 2018, EM began moving forward with its end-state contracting model (ESCM). This contracting approach entails the use of single award Indefinite Delivery/Indefinite Quantity (IDIQ) contracts, under which task orders for discrete scopes of work would be issued. This approach, which has now been utilized for most cleanup contracts currently in place throughout EM, was intended to accelerate cleanup, while reducing financial risk and environmental liability to the government and fairly sharing risk between the government and contractor to achieve desired end states.

However, the promise of end-state contract has fallen short of the reality. While there have been some successes under this model, such as at the Idaho Cleanup Project, we have more often seen progress stalled because of the excessive time and effort required for task order negotiations. This has also translated to critical funding being used for bureaucratic work, rather than actual cleanup progress. In addition, the end-state contracting approach appears to have hindered the ability of EM's contractors to develop and utilize innovative approaches to cleanup that could lead to real progress and cost/schedule reductions. As the Government Accountability Office stated in a 2022 report examining end-state

contracting, "Given the scope and scale of the ESCM, the implementation challenges we identified, and EM's persistent workforce and management challenges, it is critical that EM take the opportunity to systematically assess its approach."

We call on the next Administration to move away from EM's stance of using end-state contracting for cleanup procurements, and instead conduct a review of the benefits/issues of end-state contracting. That review should include looking at returning to contracting processes that have a proven track record of success, like the use of cost-plus-incentive fee contracts that provide fee bonuses for work done ahead of schedule and under cost. As ECA wrote in ["Changing Course: The Case for Sensible DOE Acquisition Reform,"](#)

"These contracts had simple cost and schedule targets, which informed a fee share line that was easy to understand and served as a powerful incentive to companies. Contractors were able to make substantial fee, but the big winner is DOE—which saved billions of dollars in lifecycle costs through accelerated cleanup—and the communities—which were able to see the benefits of both the federal investment, protection of human health and the environmental and a cleaned up site on an accelerated schedule."

DOE should also reaffirm the Community Commitment clause and include requirements for incentivized community engagement as part of evaluating bids as these are long-term contracts. Success in carrying out Community Commitment Clauses should also be considered in annual award fee determinations. Contractors should be encouraged to support local small businesses via subcontracts and other means as a display of good corporate citizenship. DOE should place emphasis on contract vehicles that have proven successful and beneficial to host communities in the past.



Ensure Regulatory Agreements are Reasonably Achievable and Balance Short- and Long-Term Needs

The EM program is governed by approximately 40 regulatory agreements reached with federal and state environmental agencies. These agreements outline how cleanup work is to be conducted, set final schedules for completion and establish milestones, often with financial penalties, to track interim progress.

The next Administration will have to address regulatory challenges with the EM mission, from routine renegotiations of milestones to more substantive discussions at sites such as the former Paducah gaseous diffusion plant in Kentucky and the Energy Technology Engineering Center site in California. As the next Administration approaches these regulatory discussions, we recommend ensuring that regulatory agreements contain milestones and requirements that can be reasonably met to drive actual cleanup progress.

New or revised agreements also must appropriately balance short- and long-term needs. As an example of where this was failed to be accomplished occurred in the completed holistic negotiations DOE engaged in with the state of Washington and EPA on the tank waste mission at Hanford Through these negotiations,

EM agreed to forego use of the Department's high-level waste interpretation, while obtaining approval to

use grout as a waste treatment option for a period of time. While the use of grout has benefits for waste treatment, EM forego the longer-term increased efficiency and cost-effectiveness of utilizing the high-level waste interpretation through this.

Improve Workforce Planning to Address EM "Brain Drain" and Ensure EM is Well-Integrated with Other DOE Programs

In recent years, EM has placed an increased emphasis on workforce recruiting and retention, especially regarding early career workers. ECA has been working closely with EM, along with industry through the Energy Facility Contractors Group (EFCOG), on this effort and on the needs and abilities of local communities to support an expanded workforce.

Even so, EM is facing a considerable lack of mid-to-senior leadership depth. In the field, most EM site offices appear to be struggling to have experienced personnel ready to move up to the position of Manager as needed. EM headquarters is also facing significant leadership gaps due to the departures and retirements of qualified personnel, particularly in the Regulatory and Policy Affairs and Technology Development organizations.

In addition, EM's track record in developing its next-generation workforce is decidedly mixed. As the Government Accountability Office warned this summer, "EM workforce management challenges have caused project failures and affected the mission

through schedule delays, cost overruns, and workplace accidents, according to DOE assessments. These assessments found that additional failures are likely without efforts to address workforce challenges.”

These workforce issues and lack of experienced leadership are not problems that can be solved overnight and are ones that can pose a significant risk to EM as it works on longer-term planning and challenges. In its report, the GAO laid out an extensive series of recommendations to better improve its workforce management, and we urge the new Administration to maintain focus on making progress in implementation, while continuing to work with local communities to ensure successful alignment. The depth and caliber of the EM workforce, at all levels, is critical to our members since these workers are part of our communities.

We also call on the next Administration to prioritize rebuilding the EM leadership cadre and ensuring the talent is available to move into higher tiers of responsibility as necessary. This effort should include a focus on retaining and developing mid-career employees, as well as an examination of how qualified candidates from the DOE contracting industry can be brought into the program.

EM has enjoyed a level of success in recent years in establishing strong relations and coordination with other key DOE programs, such as the Office of Nuclear Energy (concerning waste disposal) and the NNSA (concerning addressing cleanup needs for ongoing missions). This improved coordination appears to have been based,

though, largely on personal relationships between leaders in EM and other DOE programs. As DOE undergoes the leadership changes anticipated when a new Administration comes in, we encourage the Department to ensure this successful record of inter-program coordination continues.

Maintain Robust Local Community Engagement

Maintaining partnerships and providing opportunities for meaningful engagement between federal decision makers and local elected officials are vital to ensuring a unity of purpose that advances mission priorities. To be successful, DOE missions require community acceptance and thrive with community support. DOE and local governments work best when fully engaged in the decision-making at a site for issues that may impact the community. Fortunately, DOE has primarily moved away from announcing a position publicly and then expecting support.

Instead, successes come when DOE engages directly with the local government prior to announcing a position publicly. ECA recognizes that this is not always feasible but prioritizing local government engagement can go a long way toward facilitating success of the mission. ECA also recognizes that a local government will not always be supportive of a decision, but the engagement may facilitate a path forward and it provides a candid discussion of the issues. Local governments are responsible for the health, safety, and economic welfare of their communities, including the well-

being of DOE employees and contractors. Local government input and support should not be taken for granted as ECA has found that meaningful, ongoing engagement by site managers and headquarters officials can alleviate confusion and build trust on all sides by reducing conflict (in some cases saving DOE hundreds of millions of dollars). The highest levels of DOE leadership should ensure that every site manager and prime contractor actively engage local government officials on a regular basis. DOE success stories (nuclear energy, cleanup, defense activities and others) share this fundamental tenet.

ECA supports open communication channels between DOE, sites, communities, and site managers when making short-term and long-term decisions. ECA's goal is to foster and encourage a strong working relationship between the DOE and local governments. These strong relationships include a necessary base of trust and communication to be fully operative and functional. All these components -- trust, communication, input, and support -- are pivotal to the identification of shared objectives, and mutual goals are a strong component in any project or undertaking.



Continue to Focus on Economic/Energy Development Benefits From Cleanup

Some of DOE's biggest success in cleanup have come where former sites are reused for economic development. ECA appreciates the increased focus in recent years on using the assets at EM sites to permit economic development opportunities integrated with cleanup. This has included an increased focus on clean energy development, workforce development, increased considerations of economic development and reuse in cleanup planning and increased interest in commercial reuse of materials that may have been handled and disposed of as "waste." DOE has also worked more directly to encourage reuse of remediated portions of Departmental sites through the "Cleanup to Clean Energy" initiative. This effort has so far resulted in clean energy projects being announced at some EM sites.

Going forward, the next Administration should continue this increased focus on economic development and opportunities integrating these opportunities with cleanup. There needs to be continued widespread recognition that working with local governments and stakeholders, including the Community Reuse Organizations at EM sites, to ensure the long-term economic health of communities is a core tenant of the EM mission. The communities near DOE and EM sites that support the national defense mission and have supported it for over 75 years including during World War II and the Cold War, deserve a bright future.

Clarify that DOE Will Fully Investigate and Remediate Hazardous Materials Discovered at Completed Sites

A key issue for the communities near DOE sites is the ability to obtain and reuse land that has been successfully cleaned up. Once DOE and EM complete a risk-based cleanup at a site, the Department's practice has been to conduct land transfers with local communities. These programs have worked well and the communities and DOE benefit by these projects. In addition, at "closure sites," DOE turns over the management of issues at the site from EM to LM for long-term stewardship.

At times, though, communities have discovered instances of radioactive or hazardous material left behind in land believed to have been successfully remediated. When this occurs, DOE appears to be taking an inconsistent approach in addressing the issue. In Los Alamos, N.M., DOE and NNSA agreed to investigate and remediate a portion of land known as DP Middle Road that had been transferred and had been intended for housing after radioactive material was discovered. In contrast, at the Mound site in Ohio, a gas container dating back to World War II was discovered and LM has placed responsibility for addressing the issue onto the local community.

When new issues emerge at cleaned up sites, open communications with local governments and stakeholders is key. Most local communities do not have the capabilities and resources to adequately

address when hazardous or radioactive material is found in land they believed had been cleaned up. We call on the next Administration to develop and implement a policy making clear that the Department will be responsible for handling these occurrences if and when they arise, regardless of which DOE office is responsible for site management.

Reconstitute a Dedicated Nuclear Waste Organization Within DOE

As noted above, responsibility for pursuing final disposal solutions for different types of radioactive waste rests within various sections of DOE, primarily the Office of Nuclear Energy and EM. These offices also manage a wide array of other programs to support nuclear energy development and deployment and cleanup, which results in less focus and resources being dedicated to tackling the questions of long-term disposal for critical wastes. In addition, the level of effective coordination and collaboration on nuclear waste issues between the two offices has varied over the years.

Previously, DOE had one office primarily responsible for long-term nuclear waste management issues – the Office of Civilian Radioactive Waste Management (OCRWM). Established through the Nuclear Waste Policy Act, OCRWM was shut down in 2010 by the Obama Administration as part of its efforts to end the program to develop a geological repository at the Yucca Mountain site. Given the scope and scale of DOE’s nuclear waste challenges, though, we call on the next Administration to reconstitute a single entity within the Department responsible for tackling these issues. Such a move would also put align DOE with the waste management practices of other countries, such as the United Kingdom.



Key Recommendations

- Ensure Safe and Available Disposal Capability is Available for All Waste Aligned with Local Community Needs
- Re-assess Use of End-State Contracting
- Ensure Regulatory Agreements are Reasonably Achievable and Balance Short- and Long-Term Needs
- Improve Workforce Planning to Address EM “Brain Drain” and Ensure EM is Well-Integrated with Other DOE Programs
- Maintain Robust Local Community Engagement
- Continue to Focus on Economic/Energy Development Benefits From Cleanup
- Clarify that DOE Will Fully Investigate and Remediate Hazardous Materials Discovered at Completed Sites
- Reconstitute a Dedicated Nuclear Waste Organization Within DOE

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