

Creating the Conditions and Capacity for Communities to Willingly Participate in Collaboration-Based Siting

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

Cover photo: produced by Gemini AI

EXECUTIVE SUMMARY

INTRODUCTION

One of the most important, difficult, and historically avoided questions facing the United States is how to store and dispose of the nation's spent nuclear fuel and other high-level radioactive wastes.

The difficulty lies not in the science and technology underpinning a safe solution but in social and political acceptability. Nuclear waste (spent nuclear fuel and/or high-level radioactive waste) is a subject the country prefers not to discuss. However, a variety of fiscal, economic, environmental, energy and national security drivers are now shifting the social and political dynamic, returning the nuclear waste issue to the forefront.

The Administration's recent 'Request for Information' (RFI) can potentially create conditions to help resolve the long-stalled effort to identify sites for nuclear waste storage or disposal. The Keystone consortium's investigations into making public engagement for the siting of such facilities more effective, highlighted the regional impacts of nuclear waste facilities, as well as the need to take account of states' and Tribes' interests alongside those of affected local communities. Our findings and recommendations, therefore, are uniquely pertinent to the current evolving nuclear waste policy framework.

Whatever arrangements the federal government eventually reaches with individual states, those states will still need to engage with communities, local and Tribal governments, and commercial, agricultural or other regional interests on the hosting of nuclear waste facilities. The RFI acknowledges this need, with its sections questioning how states intend to manage inevitable public concerns about hosting such facilities.

Our report provides insights into how best to equip all key parties to participate meaningfully in a siting process, and how best to structure and resource dialogue and decision-making processes for communities to make informed decisions. Informed decisions tend to deliver outcomes that are more widely accepted, and therefore more likely to survive the test of time. As history reveals, attempts to impose a "top down" decision on nuclear waste facilities tend to end in failure or prolonged and costly delays.

BACKGROUND ON OUR PROJECT

Over the past two years, we have been working with local communities, state organizations, Tribal government representatives, regional governmental organizations, industry, and academia to learn how to best conduct an effective siting process for nuclear waste facilities. We have also drawn on international experience, bringing in representatives from communities in other countries who are farther along in a repository siting process, and that bring lessons relevant to siting federal nuclear waste facilities in the U.S.

We did not seek to identify or to advocate for a specific community to host a nuclear waste storage facility. Instead, we focused on developing insights into how communities engage in dialogue and decision-making about contentious infrastructure siting projects. We wanted to find out what would give communities the civic capacities and confidence to willingly participate in discussions about hosting a nuclear waste facility: what skills and resources they required, the shape of an effective discussion and decision-making process, behaviors that built trust between participants, and practices that promote and nurture a more collaborative approach to finding solutions and resolving conflict.

Our goal was to help create a framework in which all parties felt they each had agency to participate meaningfully and to make informed judgements about their collective future. Our findings and recommendations are based on extensive conversations with a wide range of informed participants representing diverse interests and different levels of government.

THEMES

Our full report sets out dozens of findings and makes many detailed recommendations. However, certain key themes repeatedly arose with the different interests and groups with which we engaged.

Capacities

- Communities and public agencies often do not have the civic capacities to support and sustain their participation.
- Taking upfront time to build civic capacities, trust and support can save considerable time and costs downstream.

Community Autonomy

- Ensuring that communities retain both a clear "right of withdrawal" and a formal, final approval role in siting decisions is essential to secure their meaningful and sustained participation in the process.

Building Confidence

- Lack of public trust in government and the nuclear industry often means that even when information is accurate, it may not be believed. This suggests that the source of information often is the confounding factor ("it's the messenger rather than the message").
- Mis- and disinformation also undermine public trust but can be managed from the outset in ways that builds public confidence. Shared learning and the support of other communities with similar experience and knowledge can be more effective in building public trust and confidence.
- There may be more trust in an independent "siting authority" – similar to those in Canada, Switzerland and Sweden where nuclear waste sites (repositories, in these cases) have been identified – compared to a process led by the DOE.

Effective Community Engagement

- Evidence shows the effectiveness of proactive engagement, such as: listing community concerns in advance and committing to answering those issues; taking the discussion to the wider community rather than waiting for them to come to you; ensuring voices that are not normally heard can participate in the process. Many public dialogue processes fail by only engaging with self-selecting cohorts and not engaging with broader demographics who have other demands on their time (the "silent majority").
- Effective engagement is also about building relationships rather than simply imparting facts, and it is important that the siting authorities listen to the community, learn about their values and aspirations, and build a shared vision of the future.

Sustaining the Siting Process

- Nuclear waste facilities (whether for storage or disposal) take a long time to socially and scientifically assess, plan, construct and operate. All such siting processes have to survive multiple electoral cycles, as well as inevitable demographic and other changes.

RECOMMENDATIONS

We have categorized our recommendations into three broad areas, with multiple detailed recommendations within each category. A summary follows below.

Recommendation: Invest in Building Civic Capacities

Meaningful public participation requires that communities possess the civic capacities to engage substantively, evaluate technical evidence, deliberate effectively, and make informed decisions. Without such capacities, even well-designed engagement processes can be captured by well-resourced interests, exclude marginalized voices, or produce outcomes that communities later disavow. Building civic capacity is more than distributing technical information or funding. The siting authority should recognize that civic capacities are multi-dimensional. We have developed a taxonomy of such capacities, which includes leadership, resources, knowledge, civic efficacy, network benefit, and civic culture.

- Acknowledge that investment in sufficient civic capacities is a fundamental prerequisite for genuine community agency. Proceeding without them likely undermines the legitimacy of any siting outcome.
- Support communities in conducting systematic appraisals of their existing civic capacities; identify strengths and gaps.
- Provide sustained, adequate funding and support for communities to build the specific capacities they identify as necessary.
- Allot sufficient time for capacity-building before the formal engagement process begins. Rushing this phase consistently produces engagement failures; it should be understood as an investment, not a delay.

Recommendation: Co-Design a Regional, Stepwise, Fair, and Competent Process

Siting nuclear waste facilities is an issue of regional concern. All affected units of government should have influence over decisions. For the sake of efficiency, regional approval should be a prerequisite before advancing along each step in the process.

- Develop holistic strategies to engage state government and agencies, Tribal governments and communities, and local governments and communities.
- Establish a core, regional group representing diverse governmental, Tribal, and community interests to co-design the engagement process from its inception.
- Collectively establish clear guiding principles for the engagement process, with clarity about roles and responsibilities, how disputes will be resolved, and what can be decided upon and by whom.
- Commit to a deliberative model that prioritizes reasoned exchange of views, exposure to different perspectives/interpretations, and iterative learning.
- Hire independent, professionally trained facilitators with demonstrated expertise in multi-stakeholder environmental and public policy deliberation. Facilitators should be perceived as impartial and credible by all parties.
- Allow the process to unfold on a timetable that is appropriate for all parties. Artificial urgency imposed by regulatory or political timelines has been a leading cause of failure in past siting processes.
- Promote, fund, and co-design a credible independent information validation process that enables communities to evaluate technical and other information, rather than depending solely on data provided by the siting authority.
- Establish, at the outset, clear and agreed-upon mechanisms by which communities will express agreement or disagreement at each stage of the process.
- Do not overly prescribe a process but continuously review and assess progress and adapt as appropriate to changing circumstances.

Recommendation: Engage Inclusively, with Expertise and based on Best Practice

Draw upon established principles and practices of professional public participation organizations and independent experts. These include reaching out to all sub-populations, promoting mutual dialogue and learning, and treating everyone with respect.

- Proactively reach out to and engage with all interests in a region, especially hard-to-reach demographics.
- Address barriers to participation, either financial or practical, e.g., childcare, transportation.
- Federally recognized Tribes are sovereign nations and should be engaged as such, through formal government-to-government interaction. State-recognized and other Tribes should be consulted on how they should be approached and included.

- Adopt model trust-building behaviors, which include: honesty about uncertainty and risk, timely follow-through on commitments, candid acknowledgment of past failures, and genuine openness to community-defined terms of engagement.
- Engage in active listening. The siting authority should demonstrate their interest in what communities are saying and ensure that community input materially shapes decisions.
- Adhere to established best practices in public engagement.

FINAL OBSERVATIONS

Nuclear waste is an especially complicated and highly charged topic that can only be adequately managed by decisions collaboratively made between all parties, each fully equipped with the capacities they need to confidently participate in a lengthy process addressing complicated and controversial issues. In the absence of reasoned civic dialogue, the evidence is clear – fear and lack of trust drive strong public reactions with the capacity to delay or derail projects. The result will be wasted funds and cost overruns.

The evidence from across the United States, as well as internationally, indicates that attempting to impose a solution on an ill-prepared community (whether that be a county, state or Tribe) does not generate meaningful solutions. It merely ignites opposition, which, as we see with Yucca Mountain, can simmer for decades.

The strongest foundations for sustained public support are: facilitated dialogue, in which both the risks and opportunities of hosting nuclear waste facilities are assessed and evaluated by a wide, diverse local population; and equipping participants with the resources, skills and confidence that empower them to participate in dialogue and to make informed decisions. We have developed specific resources for Regional Government[1] and for Local Communities[2] to advise them on best practice.

Our report's findings and recommendations are based on the informed insights of many different cohorts, from states, Tribes, and local communities. We trust that this collective wisdom can help the nation engage more effectively when considering nuclear waste facilities and other large infrastructure projects.

[1] https://narc.org/advancing-regional-energy-planning/
[2] https://www.seri.org/news/a-guide-for-communities-considering-whether-to-host-nuclear-waste-facilities