

How the U.S. DOE's Environmental Management Program Engages the Public on Complex Issues - 16532

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ABSTRACT

This paper provides an overview of how the U.S. Department of Energy (DOE) Environmental Management (EM) program engages the public on complex cleanup issues. EM has made public participation a fundamental component of its cleanup mission and has found that the EM Site-Specific Advisory Board (EM SSAB) has contributed greatly to bringing community input regarding values and priorities to the cleanup decision-making processes. As such, the EM SSAB has a unique mandate to provide input regarding the cleanup of nuclear legacy sites in the United States. Public participation that involves ongoing community engagement has inherent challenges, including explaining technically complex cleanup issues and receiving input and advice on the community from a board of non-experts. This paper highlights ways that DOE works with the various local boards across the country to communicate these issues through new member orientations. DOE can use these tools to gain insight on how best to solicit input from the local community despite complex technical issues.

INTRODUCTION

The year 2016 marks the 27th anniversary of the U.S. Department of Energy (DOE) forming the Office of Environmental Management (EM), an anniversary closely linked to the end of the Cold War nuclear arms race between the U.S. and the former Soviet Union. At that time, DOE began a new mission: the cleanup of the legacy waste of nuclear weapons created during the Cold War.

When EM was established in 1989, the scope and risks involved in cleanup were largely unknown. Today, a significant portion of the cleanup has been accomplished. Originally there were 107 contaminated sites in 35 states; now there are 16 remaining sites in 11 states that require some form of remediation. [1] Still, significant challenges remain in the largest environmental cleanup program in the world.

In the early 1990s, EM recognized that cleanup progress would depend on the commitment of and collaboration with affected communities. In search of mechanisms for such collaboration, DOE joined a 1992 federal dialogue to explore citizen involvement to address such issues as cleanup levels, future use and safety at sites. The Keystone Center, a non-profit environmental

conflict-management group, convened the working dialogue among representatives of federal government agencies; state, Tribal and local governments; and regionally and locally based environmental, community, environmental justice, Native American and labor organizations. The goal was developing consensus policy recommendations to improve the process by which federal facility environmental cleanup decisions were made.

The Environmental Management Site-Specific Advisory Board (EM SSAB or Board) was one result of this effort, as was EM's Public and Intergovernmental Accountability Program. Simultaneously, DOE developed its own public participation policy, which stated that public participation should be a fundamental component of the Department's program operations, planning activities and decision-making [2].

Although the EM SSAB is the only citizen advisory board funded directly by EM, other activities focus on gathering public and community input. The Environmental Management Advisory Board (EMAB), an external board comprised of individuals from governmental and non-governmental entities, industry and scientific and academic communities, provides independent advice, information and recommendations to EM on corporate issues relating to science and technology, acquisition and project management and risk. Additionally, EM supports intergovernmental activities, including Tribal consultations; public meetings; requests for public comment; and ad hoc activities. EM also seeks stakeholder input from community reuse and economic development organizations, state-chartered oversight boards, councils of government and other organizations.

OVERVIEW OF THE EM SITE-SPECIFIC ADVISORY BOARD

The EM SSAB is a cornerstone of EM's commitment to public involvement, providing the EM program with information, advice, and recommendations concerning issues affecting the program, both locally and nationally.

The EM SSAB adheres to the following tenets:

- DOE will actively seek to identify stakeholders, consider public input, and incorporate or otherwise respond to the views of its stakeholders in making its decisions.
- DOE will inform the public in a timely manner and foster public input at appropriate stages in DOE's decision-making processes.
- DOE will incorporate credible, effective public participation processes, including active community outreach, in DOE programs at Headquarters and in the field.
- DOE will conduct periodic reviews of its public participation and community relations efforts.

Today, the EM SSAB operates under the spirit and letter of President Barack Obama's Executive Order on transparency and openness, which states that to ensure public trust, government should be transparent, participatory and collaborative [3]. The EM SSAB also adheres to the Department's Environmental Justice Strategy and the basic tenets of Executive Order 12898, which directs "federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law. The order also directs each agency to develop a strategy for implementing environmental justice [4]."

The EM SSAB operates under the Federal Advisory Committee Act (FACA), which defines how committees operate, with emphasis on open meetings, chartering, public involvement and reporting. The charter, which also falls under various specific DOE policies and procedures, prescribes the structure and basic operations of the EM SSAB and provides requirements relating to balance and diversity, openness, record keeping, independence and other activities of the Board [5].

The EM SSAB currently is composed of eight local boards affiliated with major EM sites:

- Hanford Advisory Board (HAB)
- Idaho National Laboratory Site EM Citizens Advisory Board (INL CAB)
- Nevada Site Specific Advisory Board (NSSAB)
- Northern New Mexico Citizens' Advisory Board (NNMCAB)
- Oak Ridge Site Specific Advisory Board (ORSSAB)
- Paducah Gaseous Diffusion Plant Citizens Advisory Board (Paducah CAB)
- Portsmouth Gaseous Diffusion Plant Site Specific Advisory Board (PORTS SSAB)
- Savannah River Site Citizens' Advisory Board (SRS CAB)

Regardless of location, the EM SSAB local boards share one mission and operate under one charter. Specifically, the EM SSAB Charter calls for the Board to provide the Assistant Secretary for Environmental Management, the appropriate field manager(s) and any other DOE officials the Assistant Secretary designates, with information, advice and recommendations concerning EM matters, including:

- Cleanup Standards and Environmental Restoration
- Waste Management and Disposition
- Stabilization and Disposition of Non-Stockpile Nuclear Materials
- Excess Facilities
- Future Land Use and Long-Term Stewardship
- Risk Assessment and Management
- Cleanup Science and Technology Activities; and

- Other EM projects or issues, at the direction of the Assistant Secretary, site manager(s), and/or other designated DOE officials

With a large scope of issues under consideration, the local boards are able to focus on the unique aspects of their communities and their specific sites. The local board members are citizens who are directly affected by site cleanup activities and who bring a diversity of views, cultures and demographics from affected communities and regions to the group. Members may include stakeholders from local governments, universities, Tribal Nations, industry, environmental and civic groups, labor organizations and other interested citizens. The overall task of providing advice and recommendations to EM means that members must gather information, engage others in the community, analyze complex information, and reach a consensus, as opposed to a list of individual opinions. The EM SSAB, in short, is a highly collaborative effort.

The land area of many of the sites is large, with many waste cleanup locations on a given site to be addressed. Remediation is aimed not only at radioactive waste of various levels and hazards, but also at chemical wastes. The job of the local boards is further complicated at most sites by ongoing missions, separate from the cleanup program, sometimes involving radioactive materials.

The EM SSAB provides a mechanism for community education on contamination and the technical aspects of cleanup, as well as a way to learn the range of views that exist with regard to sites, their future land uses and cleanup processes. The range of recommendations from the local boards spans both technical and non-technical issues relevant to cleanup efforts.

IMPACT OF THE EM SSAB

The structure of the EM SSAB (i.e., a single FACA chartered advisory board comprised of local site-specific boards serving as a conduit between a local community and a specific site) is truly unique. Local site-specific boards focus on the specific concerns of their local community and site. When common issues arise, the site-specific boards are able to consult one another and share lessons learned. Despite the complexity and variety of EM's work, the EM SSAB has been able to contribute significantly to the EM mission.

Topics of recommendations have ranged from technical to non-technical subject matter. It is hard to quantify the impact of the vast number of recommendations submitted by the EM SSAB [6], but the recommendations do serve as a way for EM to gauge what issues are important to the local communities that host DOE sites.

Perhaps one of the most valuable ways that the EM SSAB has contributed to the EM program is by helping EM prioritize cleanup work. In times of budget

constraints, the Board's recommendations and advice aid EM in determining how to efficiently spend money and provide the greatest value for the local communities.

THE IMPORTANCE OF COMMUNITY INVOLVEMENT IN CLEANUP DECISIONS

In 1991, the Office of Technology Assessment (OTA) [7] published *Complex Cleanup* [8], arguing there was a "... need for a decision making process - acceptable to all interested parties - through which public concerns can be addressed and resolved" to ensure public acceptance of cleanup-related activities. Advisory boards were suggested as an answer to this need - a way to develop meaningful roles for affected community members to contribute in site-specific policy and technical decisions.

According to *Complex Cleanup*, the impetus for forming the advisory boards was two-fold. First, by having access to the information, technical support, and other resources needed to "participate effectively in all aspects of the cleanup decision-making process, the boards could foster openness, trust, and cooperation among interested parties." [9]

But, in addition to benefiting the community through information and inclusion, the report also identified that "this policy initiative addresses the need for effective public involvement in environmental restoration decisions at each of the sites. OTA believes that those decisions could be improved by providing independent input to key policy and technical issues and by involving the public in the development of site-specific, health-based cleanup priorities." [10]

Thus, it is understood that the public, by providing independent input and local values could improve upon the policy and technical processes of a complex cleanup.

THE COMPLEXITY OF THE EM CLEANUP

EM is responsible for cleaning up a vast network of industrial sites established during World War II and the Cold War to develop nuclear weapons. This massive environmental cleanup project is scheduled to take additional decades to complete. It involves the decontamination and decommissioning of hundreds of facilities, and the removal and storage of radioactive waste and the cleanup of contaminated soils and groundwater. Many of EM's cleanup challenges require significant funding to accomplish these tasks safely under current technologies. Once cleanup is complete, the focus will shift to long-term stewardship at most of the EM sites to ensure the selected remedies remain undisturbed.

The cleanup of much of this waste is extremely complex. Some of the most expensive projects, such as reducing the risk from the Hanford tanks waste, have no easy solution. There is no precedent for an environmental program of such magnitude at the U.S. nuclear weapons complex. Many of problems at EM's sites are unique and there are no proven technologies for these issues. [11]

Given the value EM places on community involvement, EM is in a position to have to communicate its complex cleanup to a diverse audience of stakeholders, many of whom are not experts, in a way that allows them to provide meaningful input into the cleanup program. Thus, properly orienting these members to the EM program is essential.

BOARD MEMBER ORIENTATION

All EM SSAB local boards provide new members with an orientation presentation and materials to help them navigate the process in which they have volunteered to participate. Training materials are site-specific and created by the individual DOE site offices. Of course, materials must include details on the environmental cleanup at the specific site, understanding the complex nature of the cleanup is essential for board members to provide meaningful input. But there are many other parts to the orientation that have proven to be key elements for new board members, including:

1. Goals and Values
2. Cross-Complex Issues
3. Regulatory Processes
4. End-Use at the Site
5. Interaction with DOE
6. Operating Procedures

Goals and Values

Many of the boards begin by describing the goals or values that the community has agreed on for the cleanup. These form the basis for the recommendations that the board is going to provide. For example, the NNM CAB lists the following values for the Board, developed by its members over many years:

- The NNM CAB is dedicated to increasing public involvement, awareness, and education relating to environmental remediation and management activities at the Los Alamos National Laboratory (LANL).
- The NNM CAB strives to ensure that decisions about LANL include informed advice from the community, and openly solicits public participation in all deliberations.
- It is the NNM CAB's goal to make it easier for members of the public to make their voices heard by the decision-makers at DOE.

At Hanford, where DOE has an extensive and complex groundwater cleanup program, HAB members are provided a paper called "HAB Groundwater Values," which outlines groundwater tenets the Board adopted through consensus. These values include an easy to understand flow chart that helps new members focus their input, when the Board is considering advice about groundwater.

Cross-Complex Issues

In addition to site-specific cleanup issues, most board members receive a briefing on the entire EM cleanup complex. Understanding cross-complex issues lets members see the broader picture and see how their cleanup decisions can have a domino effect across the country. The Paducah CAB also provides a history of the weapons program and EM's role and a list of significant events.

Regulatory Processes

Most sites include information on the complicated regulatory process involving DOE, state officials, and often the U.S. Environmental Protection Agency. The HAB's Tri-Party Agreement Public Involvement Plan outlines various processes in the area of regulatory reviews. Both old and new members refer to these processes when providing advice to DOE.

End-Use at the Site

For sites nearing cleanup completion, the future end use at a site is a key issue at most boards – and is one of the issues board members are most passionate about. As the type of future land use is tied to the selected cleanup remedy, and since future use and land transfer are fairly complex issues, many boards focus on this during their orientation. The ORSSAB focuses on the result of its End Use Working Group, and the Paducah CAB and PORTS SSAB spend a lot of time discussing their respective Community Reuse Vision plans.

Interaction with DOE

Many of the boards find that orienting members to complex processes requires some give-and-take and interaction from the citizens. Board members do not respond well to being lectured to by subject matter experts during long orientations, some of which are three days long. For example, at PORTS SSAB, a key component to the orientation is the back and forth between new members and DOE. New members have varying levels of familiarity with the site and the project(s), so the site does not script the dialogue and allows the exchange to go as long as needed. The HAB does a "Round Robin" process where organizations represented by seats on the HAB

have the opportunity to address a topic and voice their opinion. Although this is not a consensus process, board members learn from each other and ask clarifying questions. DOE and the other agencies also are provided with insight into each of the organization's values.

Operating Procedures

The boards' operating processes also have their challenges. Each board spends time walking through FACA, DOE Advisory Board guidelines, and the board's operating principles, including ethics and conflict of interest policies. The SRS CAB focuses a part of its orientation on how to write recommendations effectively within the guidelines of the EM SSAB system. Understanding the board's recommendation process, including points-of-order, subcommittee membership, and FACA, provide the structure for the board members' work.

CASE STUDY: THE NSSAB ORIENTATION PROCESS

In conjunction with DOE, the NSSAB strives to maintain as diverse a board as possible, which represents the citizens of the communities surrounding the former Nevada Test Site. [12] Among the eight national EM sites with advisory boards, the Nevada National Security Site (NNSS) is the largest geographically. The Nevada site is 1,360 square miles or 860,000 acres. The site is located in Nye County, Nevada, a county of almost 44,000 people; the county is 300 miles long and borders the western edge of the site. The NSSAB has five members who live in Nye County communities with population ranges from 300 to 38,000. The Board has one member from Lincoln County, which lies between the NNSS and Utah, and one member from Esmeralda County, which borders California. The remaining eight Board members are from the Las Vegas Valley in Clark County, Nevada, which has a population nearing two million. DOE strives for a diverse Board that represents citizens in all the communities surrounding the NNSS.

After new members have been appointed, DOE and the NSSAB engage the new members in a variety of activities. These activities are designed to give new members, and re-acquaint existing members, with technical resources that will provide a useful background for their future recommendations to DOE.

Most new members start their terms on October 1 of a given year. Shortly after that date, the DOE Nevada Field Office holds a half-day orientation for new and existing Board members. Each participant is provided a Member Orientation Manual which summarizes the day's discussion and is designed to be a valuable reference tool. The manual includes sections on the following subject areas:

- Administrative and personnel information, including:

- The nature, composition and mission of the EM Site-Specific Advisory Board
- Introduction, background and responsibilities of individual Board members, administrative staff, DOE personnel and organization liaisons
- Board meeting procedures
- Travel requirements and documentation.
- EM issues, including description of sites of the seven other local boards.
- EM activities and the NNS, including detailed overview by DOE staff on operations in the following areas:
 - Underground Test Area and Groundwater
 - Industrial Sites and Soils
 - Low-Level Waste (LLW) Disposition and Transportation
 - Public Information and Outreach
- A six-page list of acronyms used in the EM arena
- A copy of the EM Site-Specific Advisory Board Charter
- A copy of the final FACA rule
- A liaison roster with contact information of the represented organization
- A member roster with photos, contact information, and biographies
- A summary of Board meeting procedures
- A copy of the current work plan which was developed by the previous board at its immediately preceding September meeting
- A calendar of meetings and events for the current fiscal year.

At the end of the orientation day, there is an optional no-host social mixer and dinner that provides an opportunity for members, DOE staff, and liaisons to interact. The majority of orientation participants attend the social function.

Some objectives of the first day include:

- Linking names with faces
- Outlining areas of member interaction with DOE
- Providing links to available resources
- Establishing new bridges between community and government.

Liaisons are invited to participate in the orientation. The Board has found that, in the past, many member questions and concerns are better answered by officials from state and local government rather than DOE. Thus, liaison participation in the orientation process provides another direct line of communication and information for Board members.

DOE sees the orientation as setting the foundation for the Board, with its work plan as the roadmap for the year. The NNSAB work plan is determined at the September meeting, before installation of new Board members. The Board members, at the September meeting, have all had at least one year of

“active duty” as the Board feels the existing members are the most qualified to direct the course of the Board’s activities for the next year.

At the September Board meeting, the DOE’s Nevada Field Office presents an overview of various topics for future decisions on where it believes a community perspective is needed. DOE staff members outline about five to ten issues they believe the board should consider for recommendations. DOE staff discusses the available options, timeframe, due date of the recommendation, cost, and other considerations DOE believes are relevant. Board members interact with the presenter to clarify any ambiguities. After all DOE proposed work plan items have been presented and discussed, the Board has the opportunity to add any topic on which the Board would like to make a recommendation in the upcoming fiscal year. Any topics agreed upon during this phase of the meeting are added to the list of possible work plan items for the upcoming fiscal year. The existing Board then votes its preference among the possible items and, based on that vote, determines the work plan for the next fiscal year. The NSSAB then sends a formal request to DOE requesting approval of the work plan and DOE responds by October 1.

To orient new and existing members to specific areas of deliberation, DOE sponsors a tour of NNSS in October. Various work plan items focus on different areas of NNSS. The Board favors tour guides who provide lively, fact-filled, historical commentary of NNSS for the nine-hour bus tour. Commentary is usually interspersed with stops at individual sites that will be work plan items. At these stops, tour participants gain additional insight from various expert presentations by DOE staff and government contractors. Liaisons, such as tribal members and the State of Nevada, often contribute background information to make Board members aware of many differing views of the same site. The Board believes being on the actual site of a decision, being presented with many possible solutions, is an invaluable tool to forming recommendations.

The initial tour and the orientation begin the Board’s year. Meetings usually run about four hours each and start at 5:00 PM on a bi-monthly schedule. There is an optional hour-long educational session preceding each meeting and there is a no-host dinner break mid-way through the meeting because many members come to the meeting after working a full day. The break also provides a social setting that aids in providing a community atmosphere. As the year progresses, members begin to feel comfortable in their roles as representatives of their particular communities. As they form relationships with other Board members and liaisons, and as they interact with DOE staff members, the Board becomes a more collaborative body.

As individual work plan items are introduced into the various meetings, background information is provided in advance of the meeting so members have the opportunity to study the subject to complete their understanding of

an issue. The Board meetings are attended by EM management from the Nevada Field Office, who brief members at each meeting on current activities at the site that are within the Board's purview. All presenters are available to answer questions.

During the year, there are additional opportunities for Board members to gain more knowledge, background and experience. The NSSAB has provided Board members with local opportunities, including additional issue-oriented site tours, observation positions on peer review bodies, observation positions for video filming, and representing Board positions on public media presentations. The DOE Nevada Field Office sponsors Board members in shadowing low-level waste auditing teams as they verify documentation at generator sites. Board members have sponsored attendees at Devils Hole Workshop, Community Environmental Monitoring Program, Waste Management Symposia, and RadWaste conferences. Board members also participate in semi-annual EM SSAB Chairs' meetings along with peers at the seven other local boards to discuss issues and make recommendations to DOE Headquarters on matters that affect all sites on a national basis. All NSSAB members who attend such functions are required to report back to the Board on their attendance activities as well as their opinion on any future benefit to Board deliberations, procedures or knowledge base.

The Board tries to include new and continuing members in these "extracurricular activities." Board members find that although the experienced member is familiar with the subject, the new member may see the proceeding with a different vision and offer valuable insight. Both views provide value to the Board.

The Board's chartered responsibility is to make a recommendation to the DOE. The key word is "A", meaning that a single recommendation comes from the Board. Each Board member is required to vote; liaisons have no vote, but may express the position of their organizations. If the issue is contentious, each Board member may be asked to explain his/her reason for the vote so the Board, as a single body, can determine a path forward. Thus, individual Board members have learned they need a comprehensive understanding of an issue by studying the issue to make an informed and justifiable decision when casting a vote. Board members do not always initially agree, but based on the time, education and experiences shared, they are eventually able to come to a consensus.

CONCLUSION

DOE faces a challenge of training community members who are not experts on the intricacies of the regulatory and cleanup processes to provide them the ability to deliver meaningful recommendations. Training should include:

- Providing information on FACA and the advisory board process
- Describing the goals or values that the community has agreed on for the cleanup
- Briefing on the entire EM cleanup complex to give a wider perspective to members
- Information on the complicated regulatory process
- If applicable, information on end uses at a site; and
- Give-and-take and interaction from Board members with DOE.

Sites should consider adding training on the complexities of the Federal budget process, including timing, appropriations, authorization, and EM prioritization of cleanup funds, to allow board members to avoid providing recommendations that are beyond DOE's control.

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6. According to <http://www.facadatabase.gov/>, as of fiscal year 2015, the EM SSAB had submitted 1582 recommendations, 71% of which were accepted by DOE, and 17% of which were partially accepted.
7. The Office of Technology Assessment (OTA) was an office of the United States Congress from 1972 to 1995. The OTA's purpose was to provide Congressional members and committees with objective and authoritative analysis of the complex scientific and technical issues of the late 20th century. More information can be found in the OTA archive (<http://ota.fas.org/>)

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12. In 2010, the National Nuclear Security Administration (NNSA), renamed the Nevada Test Site (NTS) to the Nevada National Security Site (NNSS) to reflect the expanding mission at the site.