

History of the EM SSAB

The history of the Environmental Management Site-Specific Advisory Board (EM SSAB) that follows was presented at the Waste Management '09 conference, held in March 2009 in Phoenix, Arizona. The paper provides an overview of the U.S. Department of Energy's Environmental Management Site-Specific Advisory Board (EM SSAB) from its roots in the early 1990s at the Keystone Center to its current activities.

The EM SSAB has a unique mandate to provide input regarding the cleanup of nuclear legacy sites in the United States. Chartered under the Federal Advisory Committee Act, the EM SSAB today comprises eight local boards. The Office of Environmental Management has made public participation a fundamental component of its cleanup mission and has found that the EM SSAB has contributed greatly to bringing community values and priorities to the cleanup decision-making processes. Public participation that involves ongoing community engagement has inherent challenges; the EM SSAB has additional challenges that reflect the political and technical nature of the Agency's work.

DOE's Environmental Management Site-Specific Advisory Board 15 Years of Community Involvement

M. Nielson, C. Alexander Brennan
U.S. Dept. of Energy Office of Environmental Management
Office of Public & Intergovernmental Accountability
1000 Independence Avenue, S.W.
Washington, D.C. 20585

INTRODUCTION

This year marks the 20th anniversary of the U.S. Department of Energy's (DOE) Office of Environmental Management (EM), an anniversary that is closely linked to the 1989 dismantling of the Berlin Wall and the end of Cold War hostilities between Western powers and the Soviet bloc. Destruction of the wall was symbolic of a larger deconstruction effort that would begin as a result of this political breakthrough: the cleanup of the nuclear weapons production legacy that was created during the Cold War.

When EM was established for this effort, the scope and risks of the work were largely unknown. Today, EM manages the largest environmental cleanup program in the world. Together, the legacy sites comprise 2 million acres, the size of Delaware and Rhode Island combined. Of the 108 contaminated sites that were identified for EM cleanup, 86 of those sites have been cleaned up and closed nationwide. Still, on the remaining sites, there are 4,500 facilities waiting for decontamination and decommissioning.

Early in this effort, EM recognized that progress toward cleanup would depend upon commitment, innovation, and collaboration with the affected communities. In search of mechanisms for such collaboration, the Agency joined in a 1992 federal dialogue to explore citizen involvement to address such issues as cleanup levels, future use and safety on the site [1]. 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 to develop consensus policy recommendations, aimed at improving the process by which federal facility environmental cleanup decisions were made. The Environmental Management Site-Specific Advisory Board (EM SSAB) was one result of this effort, as was EM's entire Public & Intergovernmental Accountability Program.

The charter for the EM SSAB [2] was approved under the Federal Advisory Committee Act (FACA) [3] in 1994. So as EM celebrates its 20th anniversary in 2009, the EM SSAB marks its 15th anniversary. Although the EM SSAB is the only citizen advisory board funded directly by EM, the office supports a number of other activities focused on gathering public input. Also supported is the Environmental Management Advisory Board (EMAB), an external board that provides independent advice, information, and recommendations to the Assistant Secretary for Environmental Management on corporate issues relating to accelerated site cleanup and risk reduction. Like the EM SSAB, EMAB's activities are governed by FACA. EMAB members include individuals from governmental and non-governmental entities, private industry, and scientific and academic communities. EM also supports intergovernmental, including Tribal, consultations; public meetings; requests for public comment; and ad hoc activities. EM also seeks, but does not fund, additional stakeholder input from community reuse and economic development organizations, state-chartered oversight boards, councils of government and other organizations.

“Public participation must be a fundamental component of the Department’s program operations, planning activities and decision-making. The business of the Department must be open to the full view and input of those whom it serves, consistent with applicable laws, regulations, and contacts.” U.S. Secretary of Energy Hazel R. O’Leary, upon issuing the first Guidance on Implementation of the Department’s Public Participation Policy [4].

PUBLIC INVOLVEMENT AT DOE-EM

A cornerstone of EM's commitment to public involvement is the EM SSAB. It is currently the only directly funded, citizen advisory board for EM planning and decision-making processes involved with cleanup of the nuclear weapons complex. Now comprising eight local boards located in close proximity to major EM sites, the EM SSAB provides the EM program with information, advice, and recommendations concerning issues affecting the program, both locally and nationally.* The EM SSAB, with approximately 200 members, is the largest advisory board chartered under FACA.

Under its FACA charter, which must be renewed every two years, the EM SSAB is authorized to provide direct input to EM, and the Agency must support the EM SSAB. The charter, furthermore, prescribes the structure and basic operations of the Board [2].

Enacted in 1972, FACA “provides a clear framework for providing broad public input (not just special interest) into decision-making; directs the input to the appropriate bodies (the sponsoring body) so that it can make a difference; provides a uniform reporting system that enhances government and public accountability; and ensures that the advisory committees are reviewed for their contributions, effectiveness and stewardship of federal resources [3].”

* DOE created several local citizen advisory boards prior to 1994, which were brought under the umbrella of the new EM SSAB charter. The EM SSAB has comprised as many as 11 local boards at one time; the changing number of local boards within the EM SSAB reflects cleanup completion at some sites and the disbanding of the related local site boards.

The two major goals of FACA are

- 1) *To Enhance Public Accountability of Advisory Committees - To control the undue influence of special interests by balancing committee membership, and to ensure that public access to committee deliberations is maximized.*
- 2) *To Reduce Wasteful Expenditures on Advisory Committees - To improve the overall management of committee activities by establishing a set of management controls designed to*
 - *Monitor federal advisory committee costs;*
 - *Identify and eliminate unproductive and/or unnecessary committees; and*
Provide for an annual report of committee activities and accomplishments to the Congress [3].

Following the enactment of the legislation, FACA implementation was clarified by the General Services Administration (GSA), which published its “Federal Advisory Committee Management; Final Rule” in 1987 and a revision in 1989 [5]. The updated “Federal Advisory Committee Management; Final Rule,” 41 Code of Federal Regulations (CFR) Parts 101-6 and 102-3, was published in the *Federal Register* in 2001 [6].

Some specific requirements, which are important to understanding and complying with FACA, include

- *Advisory committee memberships are to be fairly balanced in terms of the points of view represented and the functions to be performed. FACA § 5 (b)(2); 41 CFR §§ 102-3.30 (c) & 3.60(b)(3); Appendix A-III. to Subpart B.*
- *Advisory committee meetings are required to be open to the public. Meeting notices and agendas must be published in the Federal Register to accommodate public participation. 41 CFR §§ 102-3.150, 3.155 & 3.175(c).*
- *Designated Federal Officers must approve all meetings and agendas, and attend meetings. 41 CFR § 102-3.120.*
- *Detailed minutes of each advisory committee meeting must be kept. FACA § 10(c).*
- *Boards are not independent; however, recommendations of advisory committees should be the result of independent judgment. FACA § 5(b)(3); 41 CFR § 102-3.105(g).*
- *Each FACA chartered Board must be re-justified every year and re-chartered every two years. FACA § 7, § 14 (b)(1).*

In addition to FACA and GSA rulemakings, DOE has issued guidance in the Advisory Committee Management Program Manual [7], the EM SSAB Charter [2], the EM SSAB Guidance [8] and the DOE Public Participation and Community Relations Policy [9]. The policy describes how DOE will approach public participation:

- *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.*
- *The public will be informed in a timely manner and be empowered to participate in appropriate stages in DOE’s decision-making processes.*
- *Credible, effective public participation processes, including active community outreach, will be consistently incorporated in DOE programs at Headquarters and in the field.*
- *DOE will conduct periodic reviews of its public participation and community relations efforts [9].*

“...public participation is a fundamental component in program operations, planning activities, and decision-making within DOE...Effective public participation and good community relations both rest on a foundation of positive personal relationships; DOE managers and staff are encouraged to seek to build and nurture such relationships.” Department of Energy Public Participation and Community Relations Policy (2003) [9].

EM SSAB IN ACTION

The structure of the EM SSAB—a single FACA-chartered advisory board consisting of multiple local site-specific boards or committees—reflects concerns in Washington, D.C. in the early 1990s that too many advisory boards existed, making management and evaluation of them onerous for the agencies. Both Congress and the White House wanted to control the number of advisory boards to allow for better oversight and ongoing justification of their value to government and to taxpayers. Had the EM SSAB been conceived at a different time, its structure might well have been different. But its current structure has served EM well.

With a large scope of issues for consideration, the local boards are able to focus on the unique aspects of their communities and the specific site. When common issues and concerns arise, the local boards can consult one another and share their lessons learned. Through their chairpersons, who meet twice each year in-person and every other month via teleconference, the local boards can confer on joint recommendations to EM.

Per DOE policy, decisions to create local boards are made by EM when the Assistant Secretary, Site Managers and other DOE officials determine that 1) there is local citizen interest in site planning but no existing mechanism for it; and that 2) the formation of a board under the EM SSAB charter can be expected to provide the information, advice and recommendations that management seeks. FACA also requires that a board’s function be “essential” to the agency and “in the public interest [3]”. The GSA 41 CFR further states that reasons for creating an advisory committee may include whether

- *Advisory committee deliberations will result in the creation or elimination of (or change in) regulations, policies, or guidelines affecting agency business;*
- *The advisory committee will make recommendations resulting in significant improvements in service or reductions in costs; or*
- *The advisory committee’s recommendations will provide an important additional perspective or viewpoint affecting agency operations. 41 CFR §102-3.30 (a) [5].*

Regardless of their 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 Site Manager(s), and any other DOE officials the Assistant Secretary designates, with information, advice, and recommendations concerning EM matters, notably

- 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

- Other EM projects or issues, at the direction of the Assistant Secretary, Site Manager(s), and/or other designated DOE officials [2]

The local board members are people who are directly affected by site cleanup activities and who together bring to the group a full diversity of views, cultures, and demographics from affected communities and regions. 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, often analyze technical data, and reach a conclusion that they will send forward as a product of the group, as opposed to a list of individual opinions. The EM SSAB, in short, is a highly collaborative effort.

The EM SSAB role in site cleanup, furthermore, is very complex both substantively and politically. The land area of many of the sites is large, and there are hundreds and sometimes thousands of waste disposal locations on a site that must be addressed. Remediation is aimed not only at radioactive waste of various levels and hazards, but also at chemical wastes on the sites. The job of the local boards is further complicated at most sites by non-cleanup, ongoing missions, including those involving radioactive materials.

The EM SSAB provides a mechanism for community education on the scope of 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 uses and cleanup processes. Local boards infuse Agency decision making with community values regarding site cleanup. The range of recommendations from the local boards spans both technical and non-technical issues relevant to cleanup efforts.

“Our challenges are political and social as well as technical... The course of the environmental management program will be decided through broad public debate—both national and local.”
Thomas P. Grumbly, Assistant Secretary for Environmental Management [10, p. xiii].

Despite the range and complexity of the work, the EM SSAB has contributed significantly to the EM cleanup program. What follows is a brief introduction to each local board and contributions each has made to EM decision-making processes. The first two discussions highlight accomplishments of the Fernald and Rocky Flats boards, both of which disbanded following the completion of the EM mission at their respective sites. (Another early board at Sandia decided to dissolve after the EM mission was completed at the site, and the board at the Pantex Plant, near Amarillo, Texas, disbanded.)

Fernald (Ohio)

The Fernald Citizens Advisory Board (FCAB) was created in 1993 and contributed to remediation decisions through the completion of EM’s mission at the site in 2006. Fourteen citizen members and several ex-officio government representatives made up the board for the 1,050 acre rural site, located in western Ohio. Built in 1951 to produce uranium for nuclear weapons, the facility operated for almost 40 years.

The FCAB tells its story in the publication *History and Accomplishments of the Fernald Citizens Advisory Board, 1993-2006* [11]. In that report, the FCAB highlights its many accomplishments, including its series of “Future of Fernald” public workshops that resulted in a consensus community vision for future use of the site at Fernald. That vision led to the creation of the Fernald Preserve and visitors’ center, which opened in October 2008.

After intensive study regarding cleanup options, the board pursued what it called “a balanced approach” to remediation at the site. Noted by the FCAB as among its greatest accomplishments, “This approach set target cleanup levels that restricted future uses of the site, but substantially reduced the amount of soil that would need to be removed. The approach also recommended that higher concentration wastes be shipped off site, while a much greater volume of low-level waste would be placed in an onsite disposal facility. The balanced approach is believed to have saved taxpayers several hundred million dollars and accelerated the cleanup by more than a decade [11, p.16].”

The FCAB received the 1999 Outstanding Organization of the Year Award from the International Association of Public Participation and has been sited as a model for other groups working on environmental cleanup.

Rocky Flats (Colorado)

Located 16 miles northwest of Denver, Colorado, Rocky Flats was the site of the primary nuclear weapons pit (or trigger) production facility in the U.S. during the Cold War. Reflecting local interest in the site, which had been the focus of numerous protests, the initial call for citizen board members in 1993 brought more than 200 applications. The Rocky Flats Citizen Advisory Board (RFCAB) was formed later that year and, as the RFCAB’s *Legacy Report to the Community* states, “Around the table for that first meeting were individuals who in the past had often been at odds with each other. Now they were seated around a common table with the task of working together on the cleanup of the site [12].”

Unlike other EM SSAB boards, the RFCAB was incorporated as a non-profit and was funded entirely by a DOE grant. Among the achievements that the board cited were DOE’s acceptance of numerous recommendations including those related to scoping for site cleanup activities, soil cleanup levels for plutonium, and long-term stewardship at the site. Also significant were board-generated ideas for the *DOE Ten Year Plan*, which set a 2006 target date for completing the Rocky Flats cleanup and resulted in cost savings of \$7 billion when compared to estimated costs for an extended cleanup period.

EM and the board completed their work in 2006. During its 13 years of operations, the board had a total of 83 members, who formulated 117 consensus recommendations concerning the cleanup at Rocky Flats.

Much of the site today is operated as a national wildlife refuge in the U.S. Fish and Wildlife Refuge System. The DOE Office of Legacy Management has oversight of ongoing monitoring and maintenance operations at the site and has created the Rocky Flats Stewardship Council for ongoing public participation in site activities.

“After 13 years of operation, there are many individuals that have contributed to the Board’s success. Most important are the members themselves who have collectively donated thousands of hours of their time reviewing documents, attending meetings, drafting recommendations and participating in discussion.” Rocky Flats Citizens Advisory Board; *Our Legacy Report to the Community (2006)* [12].

The summaries below focus on the accomplishments of functioning local boards that currently comprise the EM SSAB.

Hanford (Washington)

One of the largest of the Cold War legacy sites at 586-square miles, Hanford was the first and primary plutonium-production site in the country. Between the start of operations in 1944 and the shutdown of the last reactor in the late 1980s, operations at Hanford generated large amounts of radioactive and

hazardous chemical waste. Bordering on the Columbia River and, across it, the state of Oregon, the Hanford site in southeastern Washington has caused considerable human health and ecological concerns due to both groundwater and soil contamination.

In May 1989, DOE, the Environmental Protection Agency (EPA) and the State of Washington Department of Ecology signed the Hanford Federal Facility Agreement and Consent Order, also known as the Tri-Party Agreement, creating milestones for cleanup operations. The involvement of these three government agencies (including two DOE offices, the Office of River Protection and the Richland Operations Office), the state of Oregon, five Tribal governments, county and municipal governments, and many stakeholder groups make Hanford operations highly complex and the work of the Hanford Advisory Board (HAB) equally so.

The HAB was created in 1994 and today is composed of 31 members who serve as representatives of various stakeholder groups, unlike members of other local boards who represent the general citizenry. The HAB's operating procedures require consensus in decision-making, which can make the board's deliberations long, albeit rich in content and in the generation of ideas for alternative solutions.

In its 15-year history, the HAB has forwarded more than 200 pieces of advice to EM. In 2007, the HAB produced the *Groundwater Values* document and accompanying decision flowchart, which provides not only the HAB's groundwater values, "but also provides groundwater remediation decision-making guidance." In 2008, the HAB worked "with DOE and regulators during a first-of-a-kind workshop to help develop criteria for proposed plans for the initial waste site remedial decisions in the 200-Area near the Plutonium Finishing Plant." The HAB described this as a "very successful cooperative effort that resulted in a positive precedent for early public/HAB participation in the pre-decision cleanup process [13]."

Idaho National laboratory

The Idaho National Laboratory (INL), an 890-square-mile section of desert in southeast Idaho, was established in 1949 as the National Reactor Testing Station. Initially, the missions at INL were the development of civilian and defense nuclear reactor technologies and management of spent nuclear fuel. Fifty-two reactors—most of them first-of-a-kind—were built; three remain in operation at the site. Much of the current Idaho Cleanup Project is focused on cleanup at the site's Chemical Processing Plant and at the plutonium contaminated waste burial grounds. The site is also home to a DOE National Laboratory, where advanced nuclear technologies are studied and developed, and the National Environmental Research Park, where scientists from DOE, other federal and state agencies, universities and private research foundations conduct ecological studies in a protected outdoor laboratory.

Organizing for the INL Site Environmental Management Citizens Advisory Board (INL CAB) was initiated by DOE and volunteers in 1993, and, by 1994, 150 citizens had applied to participate in the 15-member board. Since it was chartered under the EM SSAB in 1994, the INL CAB has generated more than 120 recommendations and regularly engages in reviews of highly technical engineering evaluations and cost analyses.

Nevada Test Site

Formed in 1994, the Community Advisory Board for the Nevada Test Site Programs (NTS CAB) has approximately 20 members at a given time, as well as liaisons from federal, state and county government. The board makes recommendations for the Nevada Test Site, which is approximately 1,375 square miles in size—larger than the state of Rhode Island. Located in the southern portion of the Great Basin, approximately 65 miles northwest of Las Vegas, the NTS served as the primary proving ground for both conventional and nuclear weapons testing for more than 40 years.

Shortly after its formation, the NTS CAB created a subcommittee to address groundwater contamination that resulted from 828 underground nuclear tests. Water is an issue of great concern to the community, given that the average annual precipitation for portions of the NTS is less than five inches. In its extensive multi-year study of groundwater issues, “Members pored over lengthy technical documents, listened to numerous briefings by DOE scientists, and conferred with expert hydrologists, geologists, academia, and regulators [14].” In 2000, the NTS CAB held public meetings on the subject and expressed interest in providing advice on how DOE would determine the movement of groundwater off the NTS. After reviewing the board’s work, DOE invited the board in 2002 to select a location for a new characterization well. The CAB identified three well locations in 2007, and DOE incorporated the recommendation into its 2009 drilling program by committing to drill a well at one of the identified locations. It was the first time—and only time to date—that a groundwater well was sited by an EM advisory board. A study by University of Nevada researchers concluded that the effectiveness of the advisory board in this endeavor “illustrates a successful community advisory process for DOE [15].”

Northern New Mexico

Organized in 1994, the Los Alamos Citizens Advisory Board was disbanded by EM after just a few years. Too often making recommendations unrelated to EM’s responsibilities, the board failed to yield the requested input for the site’s cleanup activities. Re-formed in 1997 as the Northern New Mexico Citizens Advisory Board (NNMCAB), the board today is functioning well and has up to 27 members, who provide recommendations concerning cleanup activities at the Los Alamos National Laboratory (LANL). The site, which covers approximately 39 square miles, has an ongoing mission as a DOE National Laboratory and a research facility of the National Nuclear Security Administration.

Recently, the NNMCAB worked successfully with DOE and LANL to prepare and present a Public Forum on Closure Alternatives for LANL Material Disposal Area G. The Forum was held on April 16, 2008, at the Santa Fe Community College to educate the citizens of Northern New Mexico so that they could have an informed opinion as to what the complex closure options for the landfill entail.

In addition to landfill activities, the NNMCAB is expanding its activities to include air quality, storm water and environmental justice issues. By broadening its scope, the NNMCAB hopes to address more concerns of the highly diverse community of Northern New Mexico. An independent evaluation of NNMCAB public participation activities with regard to groundwater contamination and local citizens’ concerns pointed to growing involvement between DOE and the public, with an increasing amount of information being made available and an increase in public meetings [16].

Oak Ridge (Tennessee)

Formed in 1995 and comprising 20 members, the Oak Ridge Site-Specific Advisory Board (ORSSAB) focuses on cleanup at the 35,000-acre Oak Ridge Reservation (ORR). Located in east Tennessee, the ORR has three major facilities: EM’s East Tennessee Technology Park; the Office of Science’s Oak Ridge National Laboratory; and the Y-12 National Security Complex, which is operated by the National Nuclear Security Administration. Built as part of the Manhattan Project, the ORR today has ongoing missions in the areas of science, environmental management, nuclear fuel supply, and national security. Community input has led to DOE support for cleaning up portions of the site for reindustrialization, thus creating jobs for the surrounding area, despite the extra cost associated with this plan.

A leader in public outreach and education, the ORSSAB and its Stewardship Committee received EPA’s 2006 Citizen Excellence in Community Involvement Award, which is given annually to recognize an individual or community group for outstanding achievement in the field of environmental protection. The Award noted two major achievements by the board: 1) the development of the Stewardship Education Resource Kit, which was created to provide local educators with materials to teach students about environmental cleanup and long-term stewardship issues, in general, and on the Oak Ridge Reservation,

in particular, and 2) the development of a process to ensure that contaminated parcels of DOE land are tracked and documented. Information on the long-term care of perpetually contaminated sites, including a county plat map, is now available to the public on-line at no cost.

In early 2007, ORSSAB spearheaded the Community Oral History Initiative to preserve the history of the site. To date, nearly 300 interviews with Oak Ridge scientists, engineers, community leaders and area residents have been conducted. The oral history program is headquartered at the Oak Ridge Public Library and is led by a steering committee that includes a broad group of stakeholders, including DOE representatives, state, city and regional representatives.

“The Oak Ridge community has played important and varied roles in DOE’s planning and implementing the accelerated cleanup program at ORB... For example, community members ...advocated cleanup to an unrestricted industrial use level as opposed to a level that would allow for residential use. ...In the case of Lower East Poplar Creek, community members pushed for a more limited cleanup of mercury, thereby saving DOE tens of millions of dollars. Community support for a more limited remediation was based on a technical analysis that concluded that remediation activities would increase potential impacts to human health and the environment.” *The Politics of Cleanup: Lessons Learned from Complex Federal Environmental Cleanups* [17, p. 61].

Paducah (Kentucky)

The Paducah Gaseous Diffusion Plant (PGDP) and site is located on 3,400 acres in rural western Kentucky, 15 miles west of Paducah, near the confluence of the Ohio and Mississippi rivers. In 1951 construction began on the gaseous diffusion plant, and since 1952, the plant has produced enriched uranium, in support of federal efforts and commercial nuclear power missions. While the uranium production is conducted by a private firm, rather than the government, EM has been the landlord since 1993, with responsibilities for environmental remediation, waste management and management of depleted uranium hexafluoride.

The PGDP Citizens Advisory Board was formed in 1996. Its 18-member board meets monthly and recently has focused on recycling non-contaminated materials on the site. The Paducah CAB has generated a number of recommendations that together have increased attention on identification and disposition of potentially recyclable materials, such as nickel. In addition, the board has recommended that DOE look for a long-term disposal strategy and local processing options for recyclable materials. DOE has accepted the recommendation.

Portsmouth (Ohio)

The Portsmouth Gaseous Diffusion Plant, which is located in southern Ohio near Piketon, was constructed in the mid-1950s to enrich uranium for fueling military reactors and for nuclear weapons production. Later, the Piketon plant, like its sister enrichment plant in Paducah, Kentucky (see above), changed missions to the production of low-enriched uranium for commercial nuclear power plants. In May 2001, the private firm that operates the facility, ceased uranium enrichment operations in Piketon and consolidated operations at Paducah. The following year, transfer and shipping operations were also consolidated at Paducah. DOE, which owns both sites, oversees site remediation and is responsible for the cleanup of numerous depleted uranium hexafluoride cylinders as well as hazardous chemicals at Portsmouth.

Local citizen interest in work on the site led DOE to establish a local board with up to 20 members under the EM SSAB charter in July 2008. The board has begun holding public meetings and has completed a retreat, where work plans for the year ahead were formulated.

The Portsmouth site's on-going mission is hosting the privately operated American Centrifuge Demonstration Facility and the future American Centrifuge Plant, but EM will not have a role in that mission.

Savannah River Site (South Carolina)

The Savannah River Site (SRS) was constructed during the early 1950s to produce basic materials for use in the fabrication of nuclear weapons, primarily tritium and plutonium-239, for national defense programs. Environmental cleanup began on the site in 1981, and in 1983, construction of a waste processing facility began. Waste processing continues at the site, which is located on the Savannah River along the South Carolina-Georgia border. Also located there is DOE's Savannah River National Laboratory, which conducts research in areas, such as the cleanup of contaminated groundwater and soils, the development of hydrogen as an energy source, the safe management of hazardous materials, and the detection of weapons of mass destruction.

The SRS Citizen's Advisory Board (SRS CAB) was formed in early 1994, following a year-long public involvement effort that included 20-plus public meetings and that generated more than 250 applicants from South Carolina and Georgia for the 25-member board. The board has provided 158 recommendations since its founding, including some on highly technical subjects. The continuous strong support of the SRS CAB for a permit change that allowed for salt processing was a key factor in the final issuance of the permit, which had been opposed by several environmental groups and stalled by legal proceedings initiated by them.

The SRS CAB received the EPA National Citizen's Award in 2007 for its dedication and commitment to the residents around the Savannah River Site, in particular the SRS CAB's public education efforts on a variety of topics related to transportation, treatment and final disposition of spent fuel, among other subjects. Also noted were the CAB's outreach efforts, especially the *Board Beat*, a semi-annual community newsletter about the SRS and CAB activities, and the piloting of E-Meetings (Internet-based) to reach and inform a larger audience [18].

"I cannot overstate the value of the EM SSAB to the Office of Environmental Management. In 2008, we have received more than 60 recommendations from the boards. Since I came to DOE in 2005, we have received approximately 250 recommendations from the Board. The EM SSAB chairs have submitted 10 recommendations in the past three years, perhaps the most valuable being the recommendation concerning EM SSAB input into the budget process." Assistant Secretary, Office of Environmental Management, James A. Rispoli to the EM SSAB Chairs' Meeting, September 17, 2008.

THE CHALLENGE OF ASSESSMENT

Numerous measurement criteria have been offered by researchers for evaluating the effectiveness of citizen advisory boards. Discussed here is one set of characteristics that was offered by the U.S. National Research Council (NRC) Panel on Public Participation in Environmental Assessment and Decision Making, after an extensive study that was supported by DOE and other federal agencies [19]. The Panel, which reviewed volumes of literature on advisory board assessment, described three goals of public participation:

- **Quality** refers to assessments or decisions that (1) identify the values, interests and concerns of all who are interested in or might be affected by the environmental process or decision; (2) identify the range of actions that might be taken; (3) identify and systematically consider the

effects that might follow and uncertainties about them; (4) use the best available knowledge and methods relevant to the above tasks, particularly (3); and (5) incorporate new information, methods, and concerns that arise over time.

- **Legitimacy** refers to a process that is seen by interested and affected parties as fair and competent and that follows the governing laws and regulations.
- **Capacity** refers to participants, including agency officials and scientists, (1) becoming better informed and more skilled at effective participation; (2) becoming better able to engage the best available scientific knowledge and information about diverse values, interests, and concerns; and (3) developing a more widely shared understanding of each other and of the issues; and (4) improving their ability to communicate with each other [19, p. 1-2].

Not all participants in the advisory board processes may agree with those measures. As the NRC report suggests, the various stakeholder groups, including government, often have different priorities and expectations and may perceive and value outcomes differently: "...there are many goals for public participation processes and thus many criteria for what constitutes a 'good' or 'effective' outcome and a 'good' or 'effective' process. Goals include both those focused on the quality of environmental assessments and decisions and those focused on the relationships among the participants." No set of "best practices" captures the goals and values of each citizens' group and participating stakeholders [19, p. 225].

When done well, public participation improves the quality and legitimacy of a decision and builds the capacity of all involved to engage in the policy process. It can lead to better results in terms of environmental quality and other social objectives. It also can enhance trust and understanding among parties. Achieving these results depends on using practices that address difficulties that specific aspects of the context can present. *Public Participation in Environmental Assessment and Decision Making*, National Research Council [19, p. 2].

To guide evaluation of advisory boards, DOE requires an annual assessment of the effectiveness of advisory boards relative to the government investment in them [DOE Manual 515.1-1, §VII-3(b)]. Compliance and measurable outcomes also are addressed by FACA, which does not prescribe specific outcomes or establish specific thresholds for effectiveness, but does define broad areas for evaluation:

- *The committees must carry out "the purpose for which they were established. FACA § 2. (b)(3) and § 7 (b)(1).*
- *The committees must be "fairly balanced in terms of points of view represented and the functions to be performed by the advisory committee." FACA § 5. (b)(2).*
- *The functions of the advisory committee's "cannot be performed by the agency, another existing committee, or other means such as a public meeting." 41 CFR § 102-3.60 (b)(2).*
- *Committee input is "advisory only, and all matters under [board] consideration should be determined, in accordance with law, by the official, agency, or officer involved." FACA § 2 (b)(6).*
- *"...advice and recommendations of an advisory committee will not be inappropriately influenced by the appointing authority or by any special interest, but will instead be the result of the advisory committee's independent judgment." FACA § 5. (b)(3).*

FACA further sets out requirements for an annual report and for advisory board charter renewal or elimination every two years, [FACA, §2. (b)(3)]. Annual reports are to include the number of meetings held by a board, diversity of representatives, recommendations and responses to those recommendations, as well as subjective reporting of "the impact the Board has had on DOE activities during the past fiscal year is required (e.g., the HAB recommended that the Department reduce indirect costs, saving more than

\$200 million; the NTS CAB supported the decision to apply for a Resource Conservation and Recovery Act (RCRA) Part B permit that will enable the site to accept mixed low-level waste from throughout the DOE complex).” The FACA annual reports are posted on the websites of the local advisory boards.

The EM SSAB local boards also evaluate how they are functioning. All local boards hold an annual retreat to discuss the previous year and create a work plan for the following year. Evaluations look at results vis-à-vis the board work plans, as well as member assessments of satisfaction with process and membership on the board.

As indicated in the board summaries above, EM SSAB local boards have received national recognition through several prestigious awards. Since its creation, the EM SSAB has also been the subject of numerous evaluations by researchers.

Within the scope of this paper, it is not possible to convey the breadth of findings and recommendations from these various studies. Nonetheless, five cross-site studies of the EM SSAB are provided here for reference:

- *The Politics of Cleanup: Lessons Learned from Complex Federal Environmental Cleanups*. S. Kirschenberg, P. Kalomiris, D. Abelson, S. Synwelski. Energy Communities Alliance, Inc. 2007 [study of three boards, including those at two closure sites], <http://www.energyca.org/>
- *Evaluating Public Participation in Environmental Decisions; Working Draft Prepared for the National Research Council’s Panel on Public Participation in Environmental Assessment and Decision Making*. J.A. Bradbury of Pacific Northwest National Laboratory. February 2005 [study of eight DOE EM SSAB local boards], <http://www7.nationalacademies.org/hdgc/Bradbury%20Text.pdf>
- *An Evaluation of DOE-EM Public Participation Programs*. J. A. Bradbury, K. M. Branch, E.L. Malone of PNNL-14200, Pacific Northwest National Laboratory. February 2003 [study of seven boards], http://www.pnl.gov/main/publications/external/technical_reports/PNNL-14200.pdf
- *An Evaluation of the Effectiveness of Local Site-Specific Advisory Boards for the U.S. Department of Energy Environmental Restoration Programs*. J. A. Bradbury, K. M. Branch of Pacific Northwest National Laboratory. February 1999 [study of nine boards], http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=4269
- *Performance Measures for Evaluation of Public Participation Activities in DOE’s Office of Environmental Management*. S. A. Carnes, M. Schweitzer, E. B. Peele, A. K. Wolfe, J. F. Munroe of Oak Ridge National Laboratory. August 1996 [study of attributes and indicators of public participation success at nine DOE sites with local EM SSAB boards or other public participation activities], http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=366507

Each report acknowledges the differences in remediation needs, local issues, board membership and various dynamics at the various sites. The studies have identified practices that the researchers believe contribute to the successes and problems at the various sites. There also appears to be unanimity among the reviewers that the EM SSAB is contributing significantly to the efficient cleanup of the nuclear legacy waste sites and that DOE has demonstrated commitment and responsiveness to the advice and recommendations of the local boards. The Office of Public and Intergovernmental Accountability will be evaluating recent studies and other relevant research in working with the local advisory boards toward improving EM SSAB processes and outcomes.

CONTINUOUS IMPROVEMENT

“...at the three sites ECA examined, the common denominator underlying why conflict arose was that local governments and other members of the community were not engaged in the process and/or these parties and the decision makers (DOE and the regulatory agencies) could not come to agreement on levels of risk.” *The Politics of Cleanup: Lessons Learned from Complex Federal Environmental Cleanups* [17, p. 13].

From the various assessments over the life of the EM SSAB, EM notes several ongoing challenges for the local boards. Most boards, for instance, report difficulty in engaging a diverse membership. Some of the obstacles have to do with the level of involvement required of members; most boards report that members devote at least 10 hours per month to board activities, must attend six to 12 meetings per year, depending on the board, and commit to ongoing education due to the complexity and highly technical nature of the site cleanup information. In addition, some sites are quite remote, with limited population in the affected area. Maintaining membership diversity can be a problem in these areas, despite vigorous recruitment efforts that include direct mailings as well as print and electronic media advertisements.

As Judith A. Bradbury noted in her work for the NRC, differences in points of view and expectations, levels of trust, as well as cultural and personality differences, can cause frustration among members and thus difficulty in member retention. Analyzing data collected between 1996 and 2002, Ms. Bradbury reported, “Oak Ridge and Savannah River, for example, were unable to maintain representation by activist groups who resigned from the board after the first two years [20, p. 9].” She attributed that “to a perception that the boards were captive to DOE. At the time of the studies, Paducah was able to recruit and maintain participation by activist groups, but experienced difficulty in recruiting representatives from the business and local government. The board was perceived as an activist board... [20, p. 9].” Nonetheless, as Ms. Bradbury also noted, the credibility of citizen advisory boards is largely dependent on the diversity of members [20, p. 8].

Another challenge for the EM SSAB are resource uncertainties and budget limitations, over which local stakeholders have little control—and which, of course, are set by Congress. EM’s cleanup operation currently is a \$5.5 billion/year effort. While that is a large sum of money, the cleanup process is ongoing, and funding is not available to remediate all sites immediately.

A further challenge is the volume and complexity of information that a board member must understand in order to engage in deliberations and make informed recommendations to EM. In addition to highly technical information, each board member also must understand applicable law, regulations, orders and policy involved in the cleanup process, as well as those that apply to the operations of citizen advisory boards, such as FACA. By the time board members complete their terms, they are usually familiar with assessment, remediation, and restoration legislation, such as the National Environmental Policy Act (40 CFR Parts 1500-1508), which requires public involvement in the Environmental Impact Statement process; Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act; the National Oil and Hazardous Substance Pollution Contingency Plan; and, significantly for many sites, multi-party agreements among DOE, state agencies and EPA.

CONCLUSION

Public participation is an iterative process—communities inform technical decisions, and technical decisions and new findings affect public deliberations. In the 15 years since its creation, the EM SSAB has brought community values to EM decision-making processes at its various sites, with their different cleanup challenges and community dynamics.

Ultimately, perceived outcomes weigh heavily in judgments regarding how successful the EM SSAB has been. For the community, primary determinants of success might be cleanup levels achieved and future land-use; the government and taxpayers also weigh heavily whether the projects were completed on time and at the best possible cost. Since 1994, the local site boards have met numerous times, providing DOE with hundreds of recommendations. Many of these recommendations have proven highly effective in redirecting EM efforts in ways that have saved taxpayers hundreds of millions of dollars. Communities are pleased that the sites near them are being cleaned up, although many continue to call for more money and better communication, among other things.

Overall, EM greatly values its public outreach and stakeholder programs and believes public involvement has been critical to its successes in recent years. When conducted in an open, responsive, and accountable manner, public participation results in substantive input to EM decision-making processes, which in turn leads to improved trust and confidence in the EM Program among stakeholders.

DOE and the EM SSAB plan continual improvement through sharing lessons learned, ongoing self-assessment by local committees, external evaluation and social science research on best practices for citizen advisory boards.

Using these tools [of public engagement], we will engage in meaningful dialogue with regulators, stakeholders, and Tribal Nations to assess existing priorities and mutually identify opportunities to complete cleanup. EM Assistant Secretary James A. Rispoli, 2008 [21].

REFERENCES

1. Federal Facilities Environmental Restoration Dialogue Committee (1996). <http://www.epa.gov/EPA-IMPACT/1996/April/Day-18/pr-16488.html>
2. DOE Office of Environmental Management, Office of Intergovernmental and Public Accountability, U.S. Department of Energy Amended Charter: Environmental Management Site-Specific Advisory Board (2008). <http://www.em.doe.gov/pdfs/2008%20EM%20SSAB%20Charter%20Final%20041108.pdf>
3. Federal Advisory Committee Act, 5 U.S.C. App. 2 (1997) (original version at Pub. L. No. 92-463, 86 Stat. 770 (1972)). http://www.gsa.gov/Portal/gsa/ep/contentView.do?programId=9149&channelId=-13174&ooiid=9761&contentId=11635&pageTypeId=8203&contentType=GSA_BASIC&programPage=%2Fep%2Fprogram%2FgsaBasic.jsp&P=MC
4. H. O'Leary. U.S. Department of Energy Policy, DOE P 1210.1 (1994). <http://www.directives.doe.gov/pdfs/doe/doetext/oldord/1210/p12101.html>
5. Federal Advisory Committee Management, General Services Administration 41 Code of Federal Regulations Parts 101-6 and 102-3; Federal Advisory Committee Management, Final Rule. See also: 52 Fed. Reg. 45926 (1987). http://www.access.gpo.gov/nara/cfr/waisidx_99/41cfr105-54_99.html
6. Federal Advisory Committee Management, Final Rule, 41 CFR Parts 101-6 and 102-3 (2001). http://www.gsa.gov/gsa/cm_attachments/GSA_DOCUMENT/FACAFinalRule_R2E-cNZ_0Z5RDZ-i34K-pR.pdf
7. U.S. Department of Energy Manual 515.1-1, Office of Human Resources and Administration, U.S. Department of Energy, Pub. No. DOE M 515.1-1. Advisory Committee Management Program (2007). <http://www.em.doe.gov/pdfs/m5151-1.pdf>

8. U.S. Department of Energy, Environmental Management Site-Specific Advisory Board Guidance. Office of Public and Intergovernmental Accountability (2008). http://www.em.doe.gov/pdfs/EMSSABGuidanceNovember2008_110408.pdf
9. U.S. Department of Energy Public Participation and Community Relations Policy, DOE P 141.2 (2003). <http://www.directives.doe.gov/pdfs/doe/doetext/neword/141/p1412.pdf>
10. T. P. Grumbly. "Closing the Circle on the Splitting of the Atom." U.S. Department of Energy, Office of Environmental Management (1995). <http://www.em.doe.gov/Pages/publications.aspx>
11. History and Accomplishments of the Fernald Citizens Advisory Board, 1993-2006. <http://www.fernaldcab.org/FCABHistory/index.html>
12. Rocky Flats Citizens Advisory Board, "Our Legacy Report to the Community" (June 2006). http://www.rockyflatssc.org/rfcab_legacy_report.pdf
13. Hanford Advisory Board Annual Report (2007). http://www.hanford.gov/hanford/files/HAB_07_PReport.pdf
14. Stakeholder Summation, Recommendations for Proposed Well Locations in the Pahute Mesa Area at the Nevada Test Site, the Community Advisory Board for the Nevada Test Site Programs (September 2007). <http://www.ntscab.com/Documents/CAB%20Produced%20Reports/UGTA%20Stakeholder%20Summation%20CO MBINED%20FINAL.pdf>.
15. S.R. Reid, H.R. Neill, Department of Environmental Studies, University of Nevada Las Vegas. "Well Siting Recommendation to DOE from the Nevada Test Site Community Advisory Board: A Case Study on Public Involvement." Waste Management Symposium (2006). <http://www.wmsym.org/abstracts/2006/prof6170.html>
16. K.A. Bitner, Neptune and Company; C. Nylander, Los Alamos National Laboratory. "The Evolution of Public Participation in Groundwater Protection at Los Alamos National Laboratory." Waste Management Symposium (2005). <http://www.wmsym.org/abstracts/2005/prof5483.html>
17. S. Kirschenberg, P. Kalomiris, D. Abelson, S. Szyrwelski. *The Politics of Cleanup: Lessons Learned from Complex Federal Environmental Cleanups*. Energy Communities Alliance, Inc. (2007). <http://www.energyca.org/>
18. Savannah River Site Citizen Advisory Board. "Board Beat" (Fall 2007). <http://www.srs.gov/general/outreach/srs-cab/newsletter/fall07.pdf>
19. T. Dietz, P.C. Stern, Editors. *Public Participation in Environmental Assessment and Decision Making*. National Research Council, National Academies Press (2008). http://www.nap.edu/catalog.php?record_id=12434.
20. J.A. Bradbury, K.M. Branch, E.L. Malone. *An Evaluation of DOE-EM Public Participation Programs* [study of seven boards]. PNNL-14200, Pacific Northwest National Laboratory, Richland, WA (February 2003). http://www.pnl.gov/main/publications/external/technical_reports/PNNL-14200.pdf.
21. J.A. Rispoli, EM Assistant Secretary. *EM Cleanup Progress and FY 2009 Budget* (presentation) (2008). <http://www.em.doe.gov/pdfs/EM%20Progress%20and%2009%20Budget%20Final.pdf>.