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Mechanisms for Industry Consortia and the DOE Focus Areas

SOUTHERN STATES ENERGY BOARD
6325 Amherst Court
Norcross, GA 30092
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EXECUTIVE SUMMARY

The Southern States Energy Board (SSEB) is working with member Governors, legislators and regulators to build consensus on streamlining the permitting process for new and innovative technologies for addressing the legacy of environmental problems from 50 years of weapons research, development and production. The objective of this effort is to assist the Department of Energy (DOE) in streamlining the environmental technology permitting process site-to-site, state-to-state, and industry-to-industry to achieve remediation and waste processing faster, better and cheaper.

This report reviews mechanisms whereby industry consortia and DOE have been working with State regulators and other officials in technology deployment decisions within the DOE complex.

The report also reviews Industry Programs and Focus Areas and notes changes in the roles following a Top-to-Bottom Review of Environmental Management (EM) Programs. Energy Secretary Abraham has stated repeatedly in announcements of cleanup agreements that, “(w)orking with the states and other regulatory agencies, DOE is proposing a new way of doing business, leading to greater accountability, responsibility, and opportunities for both this Department and the states.”

In the past 12 years a series of mechanisms has evolved that enable DOE to partner with industry groups and individuals. This has allowed DOE to take advantage of investments and expertise that exist outside the government; thereby focusing internal efforts on high risk-high return cleanup problems. The Department also has developed the capacity to provide technical assistance to sites and regulatory agencies to assist in deploying new and innovative cleanup technologies at DOE facilities. Technical assistance programs are being reorganized under DOE’s National Energy Technology Laboratory (NETL) and key mechanisms must be fine-tuned in order to expedite regulatory processes and facilitate accelerated cleanup at DOE sites.

Other mechanisms have evolved that assist in the demonstration of innovative technologies for site cleanup. DOE’s five Focus Areas and NETL have linked industry partners, research institutes and the national laboratories with the DOE end-users and regulators from numerous states and federal regions. This has been especially useful in cases where an innovative technology can be applied to multiple sites across the DOE complex. NETL must continue to leverage its capability for providing technical assistance on solutions that can have a positive impact at more than one site.

A 1994 GAO report recommended, among other things, that regulators and stakeholders be involved in technology deployment decisions. Regulatory restrictions are often viewed as substantial barriers to the deployment of new technologies. To address regulatory issues DOE has been working with regional consortia of states organized by SSEB and its sister organization, the Western Governors Association (WGA).
By working with consortiums of states, DOE is able to leverage single-site trials into multi-state demonstrations. The success of this approach has lead to the establishment of the Interstate Technology & Regulatory Council (ITRC). Participants in ITRC include 35 states, DOE, SSEB, WGA, Environmental Council of States (ECOS), U.S. Environmental Protection Agency (EPA), and the Department of Defense (DOD). In addition, SSEB has maintained a Permitting Leadership in the United States (PLUS) program that is geared towards State regulators in host-states that have DOE facilities that are undergoing cleanup.

A reorganization initiative in 1999 brought about increased emphasis on project completion and site closure. On February 4, 2002 Secretary of Energy Abraham directed Assistant Secretary Roberson to “(i)mmediately begin discussions with stakeholders, communities, regulators, State and local elected officials, and Members of Congress, to discuss appropriate ways for us to refocus our efforts and resources so as to accomplish these objectives”.

The detailed Top-to-Bottom evaluation of the Environmental Management program has set the stage for pending change. This will modify State regulator and stakeholder involvement in technology deployment decisions and place new demands upon NETL for technical assistance. NETL will need to leverage resources in a manner that enables the laboratory to address the needs of state and local officials who have a stake in site-specific cleanup actions. Cases where a technical solution is a “one-off” event will require individual attention. However, there are other technical solutions that will continue to have complex-wide applicability. NETL can leverage its resources for the complex-wide applications by refocusing existing EM efforts to host states and DOE sites where the technology may be suitable.

Under the proposed FY03 Budget, funds will be made available to those sites that can – in partnership with their regulators, their contractors and their communities – change their way of doing business to provide more tangible progress towards cleanup and risk reduction. This approach does not preclude the ability to leverage a technology application from one site to another. In fact it is logical to conclude that such leveraging will increase tangible progress towards cleanup and risk reduction.

Cleanup solutions for expedited site closure at Rocky Flats and the Ohio sites by 2006 are the highest priority within DOE EM’s FY03 Budget. Additional agreements are pending and DOE has signed Letters of Intent with the U.S. Environmental Protection Agency and state officials and regulators from eight states. NETL should view the regional EPA participants and state officials/regulators as a unique class of customers. While their focus may be site-specific, they have common needs and expectations. Working with them in groups (i.e., host-states within an EPA region) will enable NETL to optimize delivery of its technical services. In addition, complex-wide opportunities often manifest themselves within these regional settings.
There is merit in a results-oriented project approach that holds the sites, State and local officials, and contractors accountable for tangible site-specific closure success. However, steps must be taken to ensure that the advances made within Industry Programs and within technical assistance services are not lost in the realignment of mechanisms for working with industry consortiums, State regulators, and other state/local officials. The relationships that have been developed with host-state regulators and officials are a significant asset to DOE and should be blended with the site-specific approach.

As a regional compact commission of Southern States, SSEB provides a direct linkage to regulators and stakeholders in the DOE host-states of Kentucky, South Carolina, Tennessee and Texas. In addition, SSEB has arranged invitational travel and conducted technology training for regulators from Ohio, Colorado and other DOE host locations. SSEB can work with NETL to facilitate the delivery of technical assistance to host-state regulators to clearly target and reduce the greatest health and environmental cleanup risks at DOE sites.

The summary reached by the EM Top-to-Bottom Review Team stated, appropriately, that “the EM mission cannot be accomplished by continuing ‘business as usual.’ There must be changes in all elements of the EM program. Once the necessary consensus for this approach has been achieved with regulators, stakeholders, and Congress, risk reduction will be accomplished …” The summary recognizes that achieving site-specific results will require close cooperation with regulators and other decision-makers in DOE host-states. SSEB’s Permitting Leadership in the United States can provide the foundation for a technical assistance program specifically aimed at regulators and other decision-makers within DOE host-states.
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MECHANISMS – INDUSTRY CONSORTIUMS & FOCUS AREAS

INTRODUCTION

In accordance with the Southern States Energy Board (SSEB) proposal, as incorporated into NETL/DE-FC26-97FT34199, the objective of this agreement is to streamline the environmental technology permitting process site-to-site, state-to-state, and industry-to-industry to achieve remediation and waste processing faster, better and cheaper. SSEB is working with member Governors, legislators and regulators to build consensus on streamlining the permitting process for new and innovative technologies for addressing the legacy of environmental problems from 50 years of weapons research, development and production.

This report reviews mechanisms whereby industry consortiums and the Department of Energy (DOE) have been working with State regulators and other officials in technology deployment decisions within the DOE complex. The historic development of relationships with State regulators is reviewed and the current nature of the relationships examined. The report contains observations from internal DOE reviews as well as recommendations from the General Accounting Office (GAO) and other external organizations.

The report discusses reorganization initiatives leading up to a DOE Top-to-Bottom review of the Environmental Management (EM) Program and highlights points of consideration for maintaining effective linkages with State regulators. It notes how the proposed changes will place new demands upon the National Energy Technology Laboratory (NETL) and how NETL can leverage its resources by refocusing existing EM efforts specifically to states that have DOE facilities within their borders (host-states).

Finally, the report discusses how SSEB’s Permitting Leadership in the United States (PLUS) program can provide the foundation for elements of NETL’s technical assistance program that are delivered to regulators and other decision-makers in host-states. As a regional compact commission, SSEB provides important direct linkages to regulators and stakeholders who need technical assistance to evaluate DOE’s cleanup plans. In addition, the PLUS program has facilitated the involvement of key regulators from host-states beyond the Southern region.
HISTORIC DEVELOPMENT OF LINKAGES

Over the past 12 years a series of mechanisms has evolved that enable EM and NETL to partner with industry groups and individuals engaged in the development and deployment of innovative cleanup technologies. This has been an effective way for DOE to address the “make or buy” question. In this approach NETL can effectively partner with the private sector to take advantage of investments and expertise that exists outside the government (the “buy” scenario). That allows EM to focus its internal research, development and deployment efforts (the “make” scenario) on high risk-high return cleanup problems that are not addressed by industry partners.

Other mechanisms have evolved that facilitate the demonstration of innovative technologies and the flow of information from researchers to DOE end-users (the decision-makers who are responsible for cleanup at individual sites within the DOE complex). These mechanisms enable the site end-users to interact with technical experts and resources available within DOE and the national laboratories system. For the past several years five technical groupings, called “Focus Areas” have been central to the cleanup process within the DOE complex. NETL has played a key role in linking industry partners, research institutes and the national laboratories with the Focus Areas and DOE end-users.

As the name “Focus Areas” suggests, the mission of the five groups has focused on areas of need within the DOE complex. The Focus Areas have looked for solutions for DOE problems that are (1) high-risk and unique to a DOE facility, or (2) promise a high return on investment and address risk issues that exist at multiple sites, complex-wide. In the first case, the Focus Areas facilitate the delivery of technical assistance to specific sites within the DOE complex. In the later case, DOE and the Focus Areas have taken a complex-wide approach to basic stakeholder and regulatory issues.

Regulatory restrictions are often viewed as substantial barriers to the deployment of new technologies. This is true for a wide array of technologies, aimed at solving a host of very different needs. It has been especially pertinent in the area of contaminated site cleanup and site closure. In order to address regulatory issues that exist at federal facilities in a number of host-states, DOE has been working this past decade with regional consortiums of states. The consortiums are lead by the Southern States Energy Board in the south and eastern regions, and the Western Governors Association in the western region.
STATE REGULATORY INITIATIVES – SOUTHERN REGION

In 1994 SSEB began a regional state regulatory initiative with DOE’s Savannah River Site and two Focus Areas. The two Focus Areas would later merge to become the Subsurface Contaminants Focus Area (SCFA).

SSEB is a nonprofit, interstate compact organization created in 1960 to enhance the quality of life in the South through innovations in energy and environmental programs and technologies. Sixteen southern states and two territories comprise the membership of SSEB: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas, U.S. Virgin Islands, Virginia, and West Virginia. The governor and a legislator represent each jurisdiction from the House and Senate. A governor serves as chairman and legislators serve as vice chairman and treasurer. Ex-officio, non-voting board members include a federal representative appointed by the President of the United States, the Southern Legislative Conference Energy and Environment Committee Chair and SSEB’s executive director, who serves as secretary.

The Southern States Energy Board’s unique structure, composed of governors, state legislators, and industrial affiliates, supports state regulators in their efforts to safely and efficiently remediate and restore the region’s natural resources while protecting the health and safety of its citizens.

In 1996 SSEB launched the Permitting Leadership in the United States program as part of its state regulatory initiative. The purpose of the PLUS program is to find ways to streamline the environmental technology permitting process site-to-site, state-to-state, and industry-to-industry to achieve remediation and waste processing faster, better and cheaper. Since 1996 SSEB has worked with NETL, the Focus Areas, and EM Headquarters to facilitate the involvement of host-state regulators and other state/local officials in the review, selection and permitting of innovative cleanup technologies.
STATE REGULATORY INITIATIVES – WESTERN REGION

In 1991 DOE developed a memorandum of understanding (MOU) with the Western Governors Association. WGA is a regional association that examines policy issues and technologies that are of interest to its member states. The member states include Alaska, American Samoa, Arizona, California, Colorado, Guam, Hawaii, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Northern Mariana Islands, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.

The mission of WGA is to identify and address key policy and governance issues in the West; advance the role of the Western states in the federal system; and strengthen the social and economic fabric of the region. To accomplish this mission, WGA develops policy and carries out programs in the areas of natural resources, the environment, human services, economic development, international relations and state management. Included in the five high priority areas for FY2002 are Strengthening State and Federal Energy Policy & Systems and Creating More Workable Environmental and Natural Resources Management Systems.

The 1991 WGA-DOE MOU outlined a cooperative effort involving DOE, other federal agencies, local, state and tribal groups. Its enabled the WGA, as a regional organization and DOE to address information needs of citizens and regulators concerned with the cleanup and closure of DOE sites in the west.
INDUSTRY CONSORTIUMS AND FOCUS AREAS

Information below provides a brief chronological view of the evolution of DOE’s Environmental Management program and its various mechanisms for industry consortia and technical areas of focus.

In November of 1989, Secretary of Energy Watkins organized the Department of Energy’s Office of Environmental Restoration and Waste Management. The new office, later designated Environmental Management or EM, was charged with reducing waste at the source and disposing of defense wastes within the DOE complex. At that time, DOE set a goal of cleaning up its wastes within 30 years. Within EM, the Office of Waste Management, Office of Environmental Restoration, and Office of Facility Transition & Management implemented cleanup activities at DOE facilities and the Office of Technology Development (OTD) was responsible for R&D to accelerate the development and deployment of innovative technologies. Internally, this DOE office worked with national laboratories, universities and the private sector on research and development. R&D programs that achieved a readiness state were continued within the Demonstration, Testing and Evaluation division. DT&E encompassed (1) groundwater and soils cleanup, (2) waste retrieval and process, and (3) waste minimization and avoidance.

OTD recognized the need for stakeholder input to the development and acceptance of innovative environmental technologies. As OTD interacted with public interest groups and regulators it became aware of the significance of the local, state and federal regulatory processes. This was especially true for new and innovative technologies. DOE was finding it necessary to develop a number of new technologies in order to achieve timely and cost-effective cleanup and closure of numerous sites. Since the public and host-state regulators were not familiar with the emerging technologies, it was found that regulatory reviews often could be extremely lengthy with frequent failures in obtaining permits. The failure to obtain permits often was a result of the public, local officials and host-state regulators not having experience with the innovative technologies.

In an effort increase stakeholder and regulatory awareness to innovative cleanup technologies, the DOE in 1991 developed a memorandum of understanding (MOU) with the Western Governors Association (WGA). The MOU outlined a cooperative effort involving DOE, other federal agencies, local, state and tribal groups. Its enabled the WGA, as a regional organization and DOE to address information needs of citizens and regulators concerned with the cleanup and closure of DOE sites in the west.

In 1992 DOE established its Industry and University Programs (IUP) where DOE’s National Energy Technologies Laboratory, formerly know as the Federal Energy Technology Center, partners to develop innovative environmental technologies for cleanup at DOE sites. The IUP’s Industry Programs foster private sector companies to develop, demonstrate and deploy cost-effective technologies to solve DOE problems. The IUP’s University Programs seeks out research institutes and universities to supplement the R&D efforts of the private sector (NETL 2002). From 1992 to 2002, IUP
has worked extensively with DOE’s environmental management organization and with federal and state regulators to accomplish complex-wide deployment of innovative technologies coming from the private sector, research institutes, and universities.

In 1994 DOE OTD realigned its programs around five areas to solve environmental problems. The five areas or Focus Groups were:

- Contaminant Plume Containment and Remediation (Plumes)
- Landfill Stabilization (Landfills)
- Decontamination and Decommissioning (D&D)
- Mixed Waste Characterization, Treatment, and Disposal (Mixed Waste)
- Radioactive Tank Waste Remediation (Tanks)

Later, the Plumes and Landfill focus areas were combined to form the Subsurface Contaminants Focus Area (SCFA or SubCon); the Decontamination and Decommissioning Focus Area became the Deactivation and Decommissioning Focus Area; Mixed Waste became the Transuranic and Mixed Waste Focus Area, and a Nuclear Materials Focus Area was added. The D&D Focus Area was placed under the direction of NETL, and other DOE facilities took the lead for the other four Focus Areas.

In 1994 DOE EM entered into an agreement with the Southern States Energy Board to begin a regional state regulatory initiative (SSEB 1996). The agreement was with DOE’s Savannah River Site and the two focus areas responsible for contaminated plumes and landfills. SSEB worked to facilitate multi-state participation in field reviews and demonstrations of innovative cleanup technologies. These efforts enabled DOE to leverage single-site trials into multi-state demonstrations. With the assistance of SSEB, key host-state regulators (who have permitting oversight for DOE facilities within their borders) were able to obtain first-hand information from projects being conducted in other states. In addition, the regulators were given the opportunity to talk with their peers from others states who had experience with the emerging technologies. This important interaction proved to be extremely valuable in expediting the permitting process whenever a technology developed at one DOE site was applied to another site within the DOE complex.

Beginning in 1994, OTD and the Focus Areas developed partnerships with national laboratories, universities and industry to promote the deployment of innovative environmental technologies. The FETC/NETL Industry Programs provided a mechanism for getting private sector information to the Focus Areas and DOE end-users. Additionally, the Consortium for Risk Evaluation with Stakeholder Participation (CRES), formed in 1995 with ongoing NETL support, assists DOE in selecting cleanup options while addressing an earlier (1994) GAO concern about stakeholder involvement (NETL 2002).
A 1994 GAO report *Management Changes Needed to Expand Use of Innovative Cleanup Technologies: Report to the Secretary of Energy* recommended, among other things, that regulators and stakeholders be involved in technology deployment decisions (GAO 1994). DOE’s agreement with the Southern States Energy Board and an expanded program with the Western Governors Association enabled it to respond to stakeholder and regulatory concerns. The SSEB PLUS program provides DOE with a mechanism for working with host-states’ regulators, executive offices and state lawmakers to facilitate site specific and multi-site deployment of innovative cleanup technologies. Another regional program, the WGA’s DOIT (Develop On-Site Innovative Technologies) Federal Advisory Committee provided a western forum for expanding multi-state involvement.

In 1995, the cooperative efforts started with SSEB and WGA evolved into the Interstate Technology and Regulatory Cooperation Work Group (ITRC). This has expanded into a nation-wide forum of state regulators. In parallel to this effort, SSEB worked directly with the Subsurface Contaminants Focus Area on host-state regulatory reviews of SCFA field demonstrations.

The ITRC (now know as the Interstate Technology and Regulatory Council) later affiliated with the Environmental Research Institute of the States (ERIS), a non-profit arm of the Environmental Council of the States (ECOS). The ECOS affiliation provided a linkage to the leadership of all state environmental agencies. However, the ECOS agenda is, by necessity, much broader than cleanup of the DOE complex. ITRC has a well-developed committee structure that prepares guidance documents and conducts training courses aimed at defining regulatory requirements for a wide range of state issues.

In December of 1995 the White House announced the creation of the Rapid Commercialization Initiative (RCI) as part of the National Environmental Technology Strategy (SSEB 1995). DOE, Commerce Department, SSEB, WGA and several federal and state agencies embarked on the RCI to demonstrate rapid deployment of innovative environmental technologies. One key component of RCI was the aspect of multi-state verification of technologies. In this approach, state regulators and regional EPA regulators were brought together to review innovative technologies and to participate in field demonstrations of the technologies. The idea behind the concept was that valuable time and money could be saved in the deployment of the innovative technologies if regulators were able to interact with their peers in assessing new technologies. RCI used a third party verification process that was modeled after work being done by the California EPA’s Hazardous Waste Technology Certification Program and U.S. EPA’s Environmental Technology Verification Program.

One underlying premise of the RCI work was that multi-state involvement of regulators in the verification of innovative technologies would accelerate the issuance of demonstration & testing permits. This would enhance the ability of technology vendors to provide services to multiple sites within the DOE complex, at Department of Defense (DoD) installations, and other federal facilities undergoing environmental remediation.
Initially the RCI process was aimed at obtaining a broad reaching sign-off by regulators on a technology. The idea was that regulators would view a field demonstration of a technology in another state and they would be able to certify the technology for use in their respective states. This initial concept proved to be unworkable and created some tension with regulators. It was later determined that regulatory reviews could benefit from early involvement and multi-state demonstrations. But the process needed to be broken down to three elements: (1) general performance review and regulatory checklist; (2) assessment of state-specific requirements; and (3) assessment of site-specific aspects of the technology applied to the site and case conditions.

In 1996 DOE’s Office of Science and Technology (OST) was created to replace OTD. OST set up the Environmental Management Science Program (EMSP) to conduct basic science that was needed in support of accelerated site cleanup. The role of EMSP is to advance the basic understanding of DOE’s most difficult cleanup issues and to foster emerging technologies that may provide solutions. In accordance with concerns raised by GAO in 1994, EMSP established a dialogue with State regulators and stakeholders. State regulators and stakeholders have participated, on a regular basis, in EMSP functions since its inception. The exchange with the regulators and stakeholders is two-way; EMSP investigators provide information about their technologies, while the state officials provide feedback on the types of data they would need for a permitting review and public acceptance.

In 1996, DOE developed a Ten Year Plan (later called the 2006 Plan) to reduce the risk and costs, and to accomplish cleanup at many sites by 2006. In 1997 the DOE sites identified 537 remaining technology needs that had to be addressed to cleanup most sites within a decade (EM 1997). By grouping the technology needs, it was determined that a number of the needs were common to multiple sites within the DOE complex.

Despite extensive efforts at complex-wide deployment of technologies that could serve multiple cleanup problems, some criticism continued. As an example, during 1997 the House Commerce Committee, Subcommittee on Oversight and Investigation was critical with the slow rate of deployment of cleanup technologies. Again in 1998, the National Research Council reviewed D&D technology development programs and expressed concern that the programs did not meet objectives of promoting DOE site-wide deployments (NRC 1998).

To stimulate rapid technology deployments DOE set up in 1997 the Technology Deployment Initiative (TDI). TDI was established to encourage multi-site deployments. In FY1998 Congress funded the project, which became know as Accelerated Site Technology Deployment (ASTD). ASTD provided a means and incentive to promote multi-site deployment of innovative technologies and processes to accelerate cleanup throughout the DOE complex. Projects selected for ASTD were required to have a comprehensive plan for deploying an innovative technology on an expedited schedule and at measurable cost savings. The plans included roadmaps for obtaining regulatory and stakeholder acceptance in host-states.
In June of 1998, DOE Environmental Management published *Accelerating Cleanup: Paths to Closure* as its new blueprint to cleanup at the DOE complex. It provided a schedule for cleanup at most of DOE’s 53 sites by 2006, along with a scope of the technology needs for some 350 projects (EM 1998).

The notion of complex-wide cleanup strategies and multi-state verification and acceptance of innovative technologies has continued as a priority with DOE. In 1999 DOE’s Environmental Management Advisory Board (EMAB) Technology Development and Transfer (TD&T) Committee passed a resolution recommending that DOE EM expand its definition of technology deployment success to capture qualitative aspects of multiple deployments, such as schedule reduction and cost saving (EMAB 1999). As noted later, there has been criticism of the metrics for gauging deployment success.

Also at this time DOE turned attention to the need for long-term stewardship to address technical issues such as monitoring and surveillance, land use controls and ownership. It was pointed out that the sites DOE intended to cleanup by 2006 and many other sites would require long-term monitoring and control. It was projected that over 100 sites in the DOE complex could not undergo cleanup to the point where they could be turned over to others or to where DOE could close down and walk away. The issue of long-term stewardship raised many questions within host-state circles. Regulators and stakeholders in host-states expressed concern about the ability of existing institutions to monitor and secure sites for many decades and, in some cases, centuries. They were concerned with issues of who would bear costs; who would implement improved technologies as they emerged; and who would respond to environmental health and safety concerns that could emerge in the future. Discussions continue with local officials and host-state regulators on a number of scientific and technical issues.

An EM reorganization initiative in 1999 brought about increased emphasis on project completion and site closure. The former Office of Waste Management and former Office of Environmental Restoration were renamed and reorganized as the Office of Site Closure and Office of Project Completion, respectively. The Office of Site Closure was assigned responsibility for DOE sites in Ohio, the Oak Ridge site in Tennessee, the Rocky Flats site in Colorado, and several other small sites. The Office of Project Completion was assigned responsibility for DOE sites in Idaho, the Savannah River site in South Carolina, and both the Richland Office and River Protection Office at Hanford in Washington State.

In 2001 ITRC and SSEB, in cooperation with DOE, established a series of training programs for innovative cleanup technologies. The training programs were offered to DOE end-users, State and federal regulators, technology vendors and consultants. The faculty for the program consisted of academic experts in the respective area, State regulators with related technical backgrounds and responsibilities, and national laboratory researchers. The goal of the program was to provide each of these interested parties with a common reference base and common decision tools. In that manner, State and federal regulators could explain their concerns and outline their data needs; DOE end-users’
requirements could be outlined; and vendors and consultants would be better prepared to address user needs and regulatory requirement.

During the period 1989 – 2001, DOE was able to account for accomplishments in addressing end-user needs, developing cleanup technologies and establishing mechanisms to involve regulators and stakeholders in technology deployment decisions. However, a Top-to-Bottom review of EM concluded that more needed to be done to expedite actual cleanup and closure of DOE facilities.

In a February 4, 2002 memo from EM Assistant Secretary Jessie Roberson to the Secretary of Energy, the Assistant Secretary stated that, “If the program is left on its current path, it will never complete its cleanup mission” (EM 2002a). The memo noted that in the two-year period between 1998 and 2000, one-third of the EM sites slipped their cleanup schedules by more than one year. A detailed evaluation of EM has set the stage for pending change. As a result, the programs and projects initiated within Industry Programs and the Focus Areas are undergoing change. This will result in changes in the way host-state regulators and stakeholders are involved in technology deployment decisions.
EM CLEANUP REFORM (FY03 PROPOSAL)

On February 4, 2002, a Top-to-Bottom Review Team presented its findings on A Review of the Environmental Management Program, United States Department of Energy. The Review Team noted that the EM program is responsible for cleaning up 114 sites involved with research, development, production, and testing of nuclear weapons. Taken together, these sites encompass an area of over 2 million acres. The report went on to note that without breakthrough business processes, the EM cleanup program cost estimate could easily increase to $300 billion. Additionally, it was stated that today, only about one-third of the EM program budget is going to actual cleanup and risk reduction work (EM 2002a). The Review Team came up with four major findings:

- The manner in which EM develops, solicits, selects, and manages many contracts in not focused on accelerating risk reduction and applying innovative approaches to doing the work.

- EM’s cleanup strategy is not based on comprehensive, coherent, technically supported risk prioritization

- EM’s internal business processes are not structured to support accelerated risk reduction or to address its current challenge of uncontrolled cost and schedule growth

- The current scope of the EM program includes activities that are not focused on or supportive of an accelerated, risk-based cleanup and closure mission

The Review Teams recommended course of action includes:

- Improve DOE’s Contract Management

- Move EM to an Accelerated, Risk-Based Cleanup Strategy

- Align DOE’s Internal Processes to Support an Accelerated, Risk-Based Cleanup Approach

- Realign the EM Program So Its Scope Is Consistent with an Accelerated, Risk-Based Cleanup and Closure Mission

The Review Team added that “Once the necessary consensus for this approach has been achieved with regulators, stakeholders, and Congress, risk reduction will be accomplished…” (EM 2002a).

In response to the findings and recommendations of the Top-to-Bottom Review, Secretary of Energy Spencer Abraham noted that a special “Expedited Cleanup Account” was included in the President’s Budget for FY2003 request. He noted that the Account,
if established, would be a major tool for implementing the approach recommended by Assistant Secretary Roberson (EM 2002b).

In his response, Secretary of Energy Abraham directed Assistant Secretary Roberson to do the following:

1. Immediately begin discussions with stakeholders, communities, regulators, State and local elected officials, and Members of Congress, to discuss appropriate ways for us to refocus our efforts and resources so as to accomplish these objectives;

2. Work with appropriate Members of Congress to implement the new “Expedited Cleanup Account” proposed in the President’s Budget;

3. Immediately begin the process of undertaking any internal reforms necessary to remove self-imposed EM barriers to success;

4. Report to me any Secretarial actions, orders or legislative requests that need to be undertaken to execute the policy approach outlined above (EM 2002b).

In testimony before the Subcommittee on Energy and Water Development, of the House Committee on Appropriations, Assistant Secretary Roberson addressed the FY2002 Budget Request proposal for an Expedited Cleanup Account (EM 2002c). The Assistant Secretary noted that the $6.714 billion request for EM, “provides base funding to ensure safety and security, and to support on-going cleanup activities at the sites. But it also includes a new and separate $800 million EM Cleanup Reform account. These funds will be made available to those sites that can – in partnership with their regulators, their contractors and their communities – change their way of doing business to provide more tangible progress towards cleanup and risk reduction” (EM 2002c).

Under the proposal, to have access to the Expedited Cleanup Account, a site and DOE will have to reach an agreement on an expedited schedule that shows measurable gains in addressing cleanup and important risks. A site that agrees to participate in the new expedited cleanup plan will receive more resources in the near term than in previous years. After the level of funding ramps up at one of these sites and problems are addressed, the level of funding will ramp back down. Once an agreement is reached there will be a roadmap for activity and budgets through Fiscal Year 2009, leading to predictable funding levels which the Department and the White House will consent to submit to Congress for the entire period of these agreements (DOE 2002a).

Secretary Abraham stated that, “Working with the states and the regulatory agencies, DOE is proposing a new way of doing business, leading to greater accountability, responsibility, and opportunities for both the Department and the States” (DOE 2002a).

Secretary Abraham cited the expedited cleanup plan for Rocky Flats as an example of what the DOE wants to accomplish at other sites. He noted that, “Years ago, skeptics predicted that the cleanup of the Department’s Rocky Flats site would take 65 years and
cost more than $36 billion. Through innovative reforms, like those embraced in our plan, the Rocky Flats site will be cleaned up and closed 55 years ahead of schedule in 2006 for about $7 billion – saving taxpayers nearly $29 billion” (DOE 2002a).
IMPLEMENTATION OF EXPEDITED CLEANUP PLANS

As noted by Secretary of Energy Abraham, implementation of expedited cleanup plans will require discussions with stakeholders, communities, regulators, State and local elected officials, and Members of Congress, to discuss appropriate ways for us to refocus our efforts and resources so as to accomplish these objectives (EM 2002b). Over the past several years SSEB has worked with NETL’s Industry and University Programs and with the Focus Areas to develop the mechanisms for communications with host-state regulators and state/local elected officials.

DOE’s Expedited Cleanup Account is currently undergoing Congressional review as part of the FY03 Budget process. In the interim, DOE EM has initiated discussions with several sites on expedited schedules:

- Rocky Flats: Funding has been identified within the FY03 Budget for the expedited cleanup of Rocky Flats. Within DOE’s Office of Site Closure, the Rocky Flats Office mission is to support closure of the Rocky Flats Environmental Technology Site in a manner that is safe, cost effective, and coordinated with stakeholders. The goal of the Office is to remove obstacles which increase costs and prevent schedule acceleration. The Rocky Flats Office’s function, among other things, is to develop a site closure strategy, develop policy and guidance, establish and monitor program performance metrics (RF 2001).

- Ohio: Funding has been identified within the FY03 Budget for the expedited cleanup of several sites within the State of Ohio. Within DOE’s Office of Site Closure, the Ohio Office mission is to achieve closure of sites within the purview of the Ohio Field Office in a manner that is safe, cost-effective and coordinated with stakeholders. The goal of the Office is to remove obstacles which increase costs and prevent schedule acceleration. The Office provides site guidance and direction, resource allocation, site analysis, site advocacy, and other functions for the Fernald Environmental Management Project, Miamisburg Environmental Management Project, RMI, West Valley Demonstration Project, and Battelle King Avenue and West Jefferson Sites (OH 2001).

Cleanup solutions for expedited site closure at Rocky Flats and the Ohio sites by 2006 are the highest priority (“Thrust 1”) within DOE EM’s FY03 Budget. Additional agreements are pending and under development. These “Thrust 2” Alternative Projects will be site-specific and aimed at solving high-risk closure issues at each of several designated sites within the DOE complex. DOE has signed Letters of Intent (LOI) with some of these DOE sites and their respective State regulators:

- State of Washington: Following a series of meetings between the DOE, the EPA, and state of Washington officials, Energy Secretary Abraham announced on March 6, 2002, that a LOI has been signed to accelerate cleanup of the DOE Hanford operations. DOE has set aside an additional $433 million for expedited
cleanup at Hanford. Under the plan, the parties will work to complete cleanup operations at Hanford 35 to 45 years sooner than the current estimated completion date of 2070 (WA 2002). Under the Office of Project Completion, the Office of River Protection and Richland Operations Office (both located at the Hanford site) have provided programmatic guidance and direction (PC 2000).

- State of Tennessee: Following a series of meetings between the DOE, EPA and the State of Tennessee officials, Energy Secretary Abraham announced on May 15, 2002, that a LOI has been signed to enter into an agreement to accelerate cleanup at the Oak Ridge site. DOE has set aside an additional $105 million for accelerated cleanup at Oak Ridge. Under the plan, the parties will work to complete cleanup operations at Oak Ridge by 2016, with high-risk cleanup by 2008 (TN 2002). Under the Office of Site Closure, the Oak Ridge Office has provided programmatic guidance and direction (OC 2001).

- State of Idaho: Following a series of meetings between the DOE, EPA and the State of Idaho officials, Energy Secretary Abraham announced on May 15, 2002, that a LOI has been signed to enter into an agreement to accelerate cleanup at the Idaho National Engineering and Environmental Laboratory (INEEL). DOE has set aside an additional $110 million for accelerated cleanup at INEEL. Under the plan, the parties will work to complete cleanup operations at INEEL by 2020 (IN 2002). The Office of Project Completion provides programmatic guidance and direction INEEL (PC 2000).

- State of Nevada: Following a series of meetings between the DOE, EPA and the State of Nevada officials, Energy Secretary Abraham announced on May 31, 2002, that a LOI has been signed to enter into an agreement to accelerate cleanup at the Nevada Test Site (NTS). DOE has set aside an additional $33 million for accelerated cleanup at NTS. Under the plan, the parties will work to complete cleanup operations at NTS by 2010, instead of the previously planned 2020 (NV 2002). The Office of Site Closure provides programmatic guidance and direction INEEL (PC 2000).

- State of New Mexico: Following a series of meetings between the DOE, EPA and the State of Nevada officials, Energy Secretary Abraham announced on May 31, 2002, that a LOI has been signed to enter into an agreement to accelerate cleanup at DOE facilities in New Mexico. DOE has set aside an additional $76 million for accelerated cleanup in New Mexico. Under the plan, the parties will work to complete cleanup operations at Sandia National Laboratories in Albuquerque by 2006 and at Los Alamos National Laboratory by 2015 (NM 2002). The Albuquerque office of the Office of Site Closure provides programmatic guidance and direction for New Mexico sites (OC 2001).

- State of South Carolina: Following a series of meetings between the DOE, EPA and the State of South Carolina officials, Energy Secretary Abraham announced on July 12, 2002, that a LOI has been signed to enter into an agreement to
accelerate cleanup at the Savannah River site. DOE has set aside an additional $216 million for accelerated cleanup at Savannah River (SC 2002). Under the Office of Project Completion, the Savannah River Office has provided programmatic guidance and direction (OC 2000).

- State of Texas: Following a series of meetings between the DOE, EPA and state of Texas officials, Energy Secretary Abraham announced on August 8, 2002, that a LOI has been signed to enter into an agreement to accelerate cleanup at the Pantex Plant in Amarillo, Texas. Under the plan, the parties will work to complete cleanup activities by 2008. DOE has set aside an additional $5 million for accelerated cleanup at Pantex (TX 2002).

- State of Alaska: On June 12, 2002 EM Assistant Secretary Jessie Roberson signed a LOI documenting the commitment by the State of Alaska, Department of Environmental Conservation and the DOE National Nuclear Security Administration, Nevada Operations Office (NNSA/NV) Environmental Management program to achieve closure and long-term stewardship for the Amchitka Island Site. Under the agreement NETL’s Consortium for Risk Evaluation and Stakeholder Participation will develop a plan that will be agreed to and accepted by the signing parties (AK 2002).

The structural changes to EM that DOE is proposing, and has presented to Congress during its FY03 Budget review, strongly realign EM’s programs to focus on site-specific tasks. DOE EM has identified a series of site-specific Alternative Projects and is assessing the roles of many current programs, including Industry and University Programs, and the Focus Areas.
REALIGNING MECHANISMS FOR INDUSTRY CONSORTIUMS

Realignments are being considered within the EM program that will affect the way Industry Partners interact with host-state officials and end-users at DOE sites. Secretary Abraham stated that, “Working with the states and the regulatory agencies, DOE is proposing a new way of doing business, leading to greater accountability, responsibility, and opportunities for both the Department and the States” (DOE 2002a). Also, the Top-to-Bottom Review Team stated as a recommendation that DOE “Realign the EM Program So Its Scope Is Consistent with an Accelerated, Risk-Based Cleanup and Closure Mission”.

Over the past several years, DOE programs have been evolving in response to internal and external drivers. This includes, among other things, responses to directives that are designed to achieve complex-wide, multi-site deployment objectives. Industry partners have found out that cleanup costs can be reduced and cleanup schedules expedited when an innovative technology can be applied to multiple sites. Information that is gained at one DOE facility can be made available to stakeholders and end-users at other DOE sites, thereby leveraging initial investments in the new technology.

Implementation of the Thrust 1 (closure of Rocky Flats and Ohio sites by 2006) and Thrust 2 (site-specific Alternative Projects) initiatives is realigning EM’s activities and will require adjustments in the way DOE and the sites work with industry partners, states officials/regulatory agencies, and site end-users. There is merit in a results-oriented project approach that holds the sites, State and local officials, and contractors accountable for tangible site-specific closure success. At the same time, Congress and the GAO have been critical of EM for not achieving complex-wide results from its investments in innovative technologies. Steps must be taken to ensure that the advances made with technology developers in the private sector are not lost in the realignment of mechanisms for working with industry consortiums. The relationships that have been developed with industry partners and host-state regulators are significant assets to DOE and should be blended with EM’s site-specific approach to expedited cleanup.

As a historical perspective, a year-2000 review of the nine RCI (Rapid Commercialization Initiative) projects found that results were not particularly favorable, with only three of nine technologies permitted or deployed after six years (RCI 2000). SSEB and WGA conducted interviews with the principal investigators (private sector representatives) for each of the technologies reviewed under RCI.

- The principal investigator for Monsanto (LASAGNA in situ remediation technology) noted that, at one point during testing, regulators were prepared to move forward on finalizing a record of decision for the Kentucky project but that two site contractors could not come to an agreement on protocols and procedures. Subsequent to the RCI project the Company decided to focus deployment of its technology to the private sector and reduced its interactions with DOE.
• The Principal investigator for Bladon International (Cone Penetrometer and Suction Lysimeter technology) pointed out that small businesses have a difficult time trying to demonstrate and deploy their technologies on federal facilities. Blandon was delayed on several occasions by contractor environmental health and safety (EH&S) questions and site-access protocol which was far beyond what the company had encountered with private-sector clients. Furthermore, the EH&S questions and site-access protocol varied dramatically from one DOE site to another. This required a nearly complete restart of documentation for each potential site application.

• The principal investigator for Bio-Imaging Research (Waste Inspection Tomography technology) noted that state regulators were not hindering the ability to get through the front gate, but that other factors associated with providing services at DOE facilities had negative impacts on the company. Issues with EH&S questions, site-access and union procedures hampered the ability of the company to position itself for complex-wide services of its mobile imaging technology.

A central theme of the RCI lessons learned was that the private sector needed assistance in order to make its technologies available to DOE. Furthermore, the process of gaining acceptance at a single DOE site and subsequently having to “reinvent the wheel” at other sites in the DOE complex is difficult for the private sector. As noted above, these industrial partners were looking for opportunities to provide services to DOE on a complex-wide basis. The technologies that were reviewed have the potential of solving high-risk problems but the technology vendors had problems with site access and protocol.

Maintaining mechanisms for assisting industry partners will have a positive impact on businesses that have cleanup technologies that are useful to DOE. Under the realignment, such mechanisms will need to consider the Secretary of Energy’s statement regarding working with host-state regulators and stakeholders. Also, DOE must balance its results-oriented focus on site closures with earlier GAO concerns regarding the lack of focus on complex-wide cleanup solutions (GAO 1994).
REALIGNING MECHANISMS FOR DOE FOCUS AREAS

Since the inception of the five Focus Areas in 1994 there has been a systematic and evolving interaction between these groups, regulators, and state/local elected officials. The mechanisms being utilized by the two regional organizations (SSEB and WGA), the ITRC and individual states have resulted in a complex-wide, multi-state approach to demonstrating and implementing innovative cleanup technologies that are being supported by the Focus Areas. As noted above, an understanding that cleanup costs must be reduced and cleanup schedules expedited drives these mechanisms. Complex-wide gains are made whenever cleanup information from one DOE facility can be made available to host-state and EPA regional regulators, state/local elected officials and DOE site end-users at other DOE locations.

Implementation of the Thrust 1 (closure of Rocky Flats and Ohio sites by 2006) and Thrust 2 (site-specific Alternative Projects) initiatives is redirecting EM efforts that, historically, have been the responsibility of the Focus Areas. Under the proposed realignment there will be changes in the way DOE and the sites work with host-state/regional regulators and state/local elected officials. This realignment should take into account relationships that have been established with host-states. Where possible, the realignment should appear seamless to host-state stakeholders. Where changes in the relationships are required, DOE and NETL must take steps to ensure that the reasons for change are communicated to its state and local partners. SSEB has played an important role in facilitating such change in the past.

Since 1996 SSEB has co-hosted (often with DOE and ITRC) numerous conferences and training sessions to facilitate deployment of cleanup technologies. Additionally, SSEB has arranged for the participation of host-state regulators in field demonstrations of innovative cleanup technologies. Examples of the mechanisms that have been used to date include:

- Since 1997, SSEB has actively partnered with the ITRC, the Remediation Technologies Development Form, DOE Subsurface Contaminants Focus Area, and U.S. EPA to offer training programs. The first course, Natural Attenuation of Chlorinated Solvents in Groundwater, defined the working relationships of the co-sponsors. Since that time additional training courses have been offered in Accelerated Bioremediation of Chlorinated Solvents, In situ Bioremediation of Nitrates, Permeable Reactive Barriers, Phytotechnologies, In situ Chemical Oxidation, and others.

- SSEB has arranged for the participation of key host-state regulators in program reviews, such as the July 2002 VOC/DNAPL Workshop held at Savannah River for DOE and contractor personnel from Oak Ridge, Portsmouth, Paducah and Savannah River. SSEB assisted in facilitating the participation of EPA Region IV regulators, and respective host-state regulators from Tennessee, Ohio, Kentucky and South Carolina.
• SSEB has assisted SCFA in working with host-state regulators and stakeholders in the deployment of reactive treatment barrier technologies. Reactive barriers were installed at Rocky Flats with SCFA support to address three groundwater contamination plumes. The reactive barrier technology has much lower operating and maintenance costs that the traditional pump and treat method, saving Rocky Flats about $105 million (SCFA 2002).

Work done by SSEB has resulted in institutional mechanism that can facilitate the involvement of host-state regulators in field demonstrations of innovative cleanup technologies. In addition SSEB was instrumental in establishing a web-based training system that enables state regulators, industry vendors, DOE end-users and others to “work from the same sheet music” in proposing, verifying and reviewing the application of innovative technologies. These mechanisms are assets that NETL and EM need to maintain and further develop. They have proven to be effective outreach tools for providing useful technical assistance.

During the next several weeks, with the adoption of a FY03 Budget, the direction of the expedited cleanup plan will become clearer. NETL will be part of a realigned program for delivery of technical services in support of Thrust 1 (closure of Rocky Flats and Ohio sites by 2006) and Thrust 2 (site-specific Alternative Projects) activities. DOE EM’s realignment will emphasize site specific opportunities but also must address complex-wide opportunities:

• As noted in the first example above (training programs), it is important to ensure that technology vendors, host-state and regional EPA regulators, and DOE site end-users continue to have access to common training tools. This will facilitate communications, reviews and verification of innovative technologies used at DOE sites.

• As noted in the second example above (four DOE sites reviewing technologies), the need remains for mechanisms for interactions between DOE end-users and host-state regulators with respect to implementing cleanup technologies that are capable of addressing high-risk problems that exist at more than one site in the DOE complex.

• As noted in the third example above (Reactive Barrier Technology), one of the keys to the expedited closure and cost reduction at Rocky Flats is an SCFA technology that has implications complex-wide. It is important to continue fostering the implementation of such technologies from one site to another, and therefore, important to continue the dialogue with host-state regulators in each of the respective states where implementation can occur.
CONCLUSIONS

SSEB is working with member Governors, legislators and regulators to build consensus on streamlining the permitting process for new and innovative technologies for addressing the legacy of environmental problems from 50 years of weapons research, development and production. The objective of this effort is to assist the DOE in streamlining the environmental technology permitting process site-to-site, state-to-state, and industry-to-industry to achieve remediation and waste processing faster, better and cheaper.

A series of mechanisms has evolved that enable DOE to partner with industry groups and individuals (engaged in the development and deployment of innovative cleanup technologies) to address the “make or buy” question. In this approach DOE can take advantage of investments and expertise that exists outside the government, thereby allowing DOE to focus its internal efforts on high risk-high return cleanup problems.

Other mechanisms have evolved that facilitate the demonstration of innovative technologies to DOE end-users and decision-makers responsible for site cleanup. DOE’s five Focus Areas and NETL have linked industry partners, research institutes and the national laboratories with the DOE end-users and regulators from numerous states and federal regions. NETL must continue to leverage its capability for providing technical assistance on solutions that can have a positive impact on expedited site closure, while continuing to leverage technologies that have complex-wide applications.

A 1994 GAO report *Management Changes Needed to Expand Use of Innovative Cleanup Technologies: Report to the Secretary of Energy* recommended, among other things, that regulators and stakeholders be involved in technology deployment decisions (GAO 1994). Regulatory restrictions are often viewed as substantial barriers to the deployment of new technologies. In order to overcome these barriers DOE has been working this past decade with regional consortiums of states. This regional approach can continue to serve NETL in providing technical assistance to host-state regulators and stakeholders involved in deployment decisions.

Under the regional approach, host-state regulators have the opportunity to talk with their peers from others states that have experience with the emerging technologies. This important interaction is extremely valuable in expediting the permitting process whenever a technology developed at one DOE site can be applied to another site within the DOE complex.

A reorganization initiative in 1999 brought about increased emphasis on project completion and site closure. On February 4, 2002 Assistant Secretary Jessie Roberson stated that, “If the program is left on its current path, it will never complete its cleanup mission” (EM 2002a).
In response, Secretary of Energy Abraham directed Assistant Secretary Roberson to “immediately begin discussions with stakeholders, communities, regulators, State and local elected officials, and Members of Congress, to discuss appropriate ways for us to refocus our efforts and resources so as to accomplish these objectives”. The detailed Top-to-Bottom evaluation of EM has set the stage for pending change. This will modify State regulator and stakeholder involvement in technology deployment decisions.

Under the proposed FY03 Budget, funds will be made available to “those sites that can – in partnership with their regulators, their contractors and their communities – change their way of doing business to provide more tangible progress towards cleanup and risk reduction” (EM 2002c).

Cleanup solutions for expedited site closure at Rocky Flats and the Ohio sites by 2006 are the highest priority within DOE EM’s FY03 Budget. Additional agreements are pending and DOE has signed Letters of Intent with the U.S. Environmental Protection Agency and state officials and regulators from eight states. NETL should view the regional EPA participants and state officials/regulators as a unique class of customers. While their focus may be site-specific, they have common needs and expectations. Working with them in groups (i.e., host-states within an EPA region) will enable NETL to optimize delivery of its technical services. In addition, complex-wide opportunities often manifest themselves within these regional settings.

The structural changes that DOE EM is proposing, and has presented to Congress during its FY03 Budget review, strongly realign EM’s programs to focus on site-specific tasks. DOE EM has identified a series of site-specific Alternative Projects and is assessing the roles of many current programs, including Industry and University Programs, and the Focus Areas.

There is merit in a results-oriented project approach that holds the sites, State and local officials, and contractors accountable for tangible site-specific closure success. It is essential to demonstrate to U.S. citizens that progress is being achieved in reaching site cleanup and closure. However, steps must be taken to ensure that the advances made within Industry Programs and within technical assistance services are not lost in the realignment of mechanisms for working with industry consortiums, State regulators, and other state/local officials. The relationships that have been developed with host-state regulators and officials are a significant asset to DOE and should be blended with the site-specific approach.

As a regional compact commission of Southern States, SSEB provides a direct linkage to regulators and stakeholders in the DOE host-states of Kentucky, South Carolina, Tennessee and Texas. In addition, SSEB has arranged invitational travel and conducted technology training for regulators from Ohio, Colorado and other DOE host locations. SSEB can work with NETL to facilitate the delivery of technical assistance to host-state regulators to clearly target and reduce the greatest health and environmental cleanup risks at DOE sites.
The summary reached by the EM Top-to-Bottom Review Team stated, appropriately, that “the EM mission cannot be accomplished by continuing ‘business as usual.’ There must be changes in all elements of the EM program. Once the necessary consensus for this approach has been achieved with regulators, stakeholders, and Congress, risk reduction will be accomplished …” The summary recognizes that achieving site-specific results will require close cooperation with regulators and other decision-makers in DOE host-states. SSEB’s Permitting Leadership in the United States can provide the foundation for a technical assistance program specifically aimed at regulators and other decision-makers within DOE host-states.