

Innovative Stakeholder Involvement
Processes in Department of Energy
Programs
A Selective Accounting

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April, 2011
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Blue Ribbon Commission on America’s Nuclear Future: Disclaimer

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Acknowledgements

Thanks go to several people who helped with this paper, particularly those who contributed their thoughts through interviews and comments on the paper. Jim Williams, Western Interstate Energy Board, Alex Schroeder, Western Governors Association, Lisa Janairo, Council of State Governments Midwest Regional Office, and Cort Richardson, Council of State Governments Northeastern Regional Office who have all been wise and thoughtful participants in Department of Energy transportation programs and stakeholder involvement processes and who helped me focus this paper. Don Hancock, Southwest Research and Information Center, who has reviewed every WIPP permit and is a great source of information and history on the program and provides well reasoned arguments about needed improvements in DOE technical and policy approaches to waste management programs. Judy Treichel, Nevada Nuclear Waste Task Force provided insights into the NGO communities in Nevada and their reasons for their positions on nuclear waste management and Mary Olson, Nuclear Information Resource Services, for comments about the need for clear definitions (the language) of the problem so that everyone is on the same page when deliberations occur. Rick Moore and Elizabeth Helvey have been outstanding contributors to DOE programs and provided helpful program history and policy comments to me. Seth Kirshenberg and his colleagues, Allison Doman, and Kara Colton, Energy Communities Alliance, who have a good understanding of local government issues, were instrumental in getting me information about the process they supported with volunteer communities for siting potential research and processing facilities for spent fuel. Thanks to Catherine Morris, Keystone Center, who provided the right language for the FERC transmission line development project and who has a successful history with stakeholder collaboration on highly controversial issues of all sorts, including nuclear waste management. As always, thanks to Hank Jenkins-Smith, who clearly articulates social science research and the role it can play in policy deliberations and for his survey research on the nature of public concerns about radioactive materials management. Thanks to Alex Thrower and Mary Woollen, BRC staff, who provided encouragement and support for the paper.

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I. INTRODUCTION

The Blue Ribbon Commission staff requested this paper cataloging innovative stakeholder involvement programs within the Department of Energy (DOE). I reviewed a variety of material on public involvement, including papers and presentations on stakeholder involvement in DOE programs, published presentations and comments to the BRC, and research reports on stakeholder and public involvement. The process also included interviews with selected stakeholders, including representatives of non-governmental organizations, state regional group staff and former and current DOE contractors and researchers. The paper is written from a practitioner's perspective and is based on my experience with transportation stakeholder involvement programs as a DOE employee working in the Civilian Radioactive Waste Management (OCRWM) and the Environmental Management (EM) Programs from 1985 until 2007. The DOE programs selected for this paper illustrate principles and themes documented by the National Research Council (NRC) and have elements that could serve as models or cautionary tales for future spent fuel management programs. The definition of stakeholders used in this paper is "interested and affected parties (state, local, tribal officials, nongovernmental organizations, industry and labor representatives and interested members of the public) impacted by a government program and who have something aside from a financial stake in public policy outcomes."

In the United States, federal agencies have developed programs to involve citizens, key stakeholders, and other governmental entities in order to accomplish program goals and mandates. In 2008, the NRC produced a voluminous report, *Public Participation in Environmental Assessment and Decision Making*, which describes research and policy efforts in public involvement in a number of federal agencies, suggests the need for more rigorous attention to public involvement in future federal programs, and recommends future research into public participation methods and results. This report has been a valuable source of information about principles and "best processes" (NRC 21) for public involvement. I used the following best processes identified by NRC to assess the programs discussed in this paper:

1. diagnosis of the context, 2. collaborative choice of techniques to meet difficulties expected because of the context, 3. monitoring of the process to see how well it is working, and 4. iteration, including changes in tools and techniques if needed to overcome difficulties. (21)

This paper is organized into four Sections, beginning with this Introduction. The Background provides a brief history of the legislation and policies on which public involvement activities are built. The section on Examples of Stakeholder Involvement in Department of Energy (DOE) Programs describes the stakeholder involvement processes used in selected DOE programs. The Office of Civilian Radioactive Waste Management

(OCRWM), the Environmental Management (EM) program, the Nuclear Energy Program's (NE) Global Nuclear Partnership Environmental Impact Statement (EIS), and the Federal Energy Regulatory Commission (FERC) broad-based consensus process to develop and implement long-term, policy-driven transmission line options illustrate different approaches to stakeholder involvement in siting projects. Transportation stakeholder involvement examples include OCRWM transportation planning processes, WIPP transportation, and the EM National Transportation Program and its campaign-specific shipping activities for spent fuel and other radioactive materials shipments. Section IV considers lessons learned from DOE programs and provides a series of options for stakeholder involvement processes for future spent fuel management programs.

II. BACKGROUND

Stakeholder involvement in government programs has been advocated by agencies, social science researchers, and practitioners for a variety of reasons. NRC suggests that some reasons for involvement include the essentially democratic nature of public input into governmental decisions, the need for policy transparency, and the values brought to the table by citizens affected by government programs and decisions. Effective stakeholder involvement processes in controversial government programs can result in improved decisions, legitimize the process or decision, and increase capacity of all parties for future understanding, deliberations and discussions, particularly in very technical or science-based actions (NRC 2). Cort Richardson, Council of State Governments Eastern Regional Office staff, suggested that one reason to collaborate is to reach agreement on siting and shipment activities and to limit litigation or other interventions. In addition, collaboration allows discussions and decisions on how best to manage risk.

General policies and rules for involving the public in federal program activities have been in place for a number of years. The Administrative Procedure Act (APA), enacted in 1946, set forth general procedures that all agencies must use in developing policy, promulgating rules, notifying the public and other agencies of their intentions, requesting public information and disseminating information to the public, and receiving comments from the public and other agencies (NRC 73). The 1969 National Environmental Policy Act (NEPA) required public involvement in environmental assessments. The 1972 Federal Advisory Committee Act (FACA) mandates standards and uniform procedures to ensure that advisory committees serve public rather than private interests. The 1976 enactment of the Resource Conservation and Recovery Act (RCRA) legislation mandated public involvement in planning for clean-up at industrial sites. "The Council on Environmental Quality (CEQ), in 1978, required agencies to engage in scoping processes early in an agency's assessment of the environmental impacts of options to ascertain what issues the public wished to see addressed in that assessment" (NRC 38).

The Environmental Protection Agency (EPA) led the way for government agencies and other organizations with the development of a series of guides and training in public involvement and risk communication. EPA developed some of the early materials and highlighted the range of citizen concerns which needed to be considered when siting municipal waste facilities. One of the important contributions of the EPA work was to articulate that different publics require different kinds of involvement. General information dissemination, while useful to some people, is not the only process that needs to occur. EPA and its consultants recognized that some stakeholders had more interest in actions for site clean-up and environmental decisions and needed to have institutional structures that could address those actions. Not only were technical issues important for the public in siting municipal waste facilities, the authors also pointed out that values and ultimately politics play a role. (Regan, Desvousges, and Creighton 29). Recommended activities ranged from general information provision through public meetings or other venues to creation of deliberative bodies such as advisory boards and committees to engage stakeholders in programmatic, scientific or technical discussions and decisions. A systematic approach to stakeholder identification and plans to engage those stakeholders has been suggested by public participation practitioners.

The 1982 Office of Technology Assessment report, “Managing Commercial High-Level Radioactive Waste,” includes specific recommendations for public involvement in the radioactive waste management program. The report concluded a three year study and provided a basis for the Nuclear Waste Policy Act of 1982. It recommended that public involvement plans and funding be included in management plans, and that peer reviews, coordinated review of regulatory requirements, and formal roles for state and local governments in siting decisions would all help demonstrate that equity and attention to safety were a key part of the federal government’s program (59-63). In 1985, OTA updated their report and provided additional recommendations to add staff with expertise in intergovernmental relations, stakeholder involvement and public outreach to the technical program staff in order to be more responsive to state, tribal and local concerns. In 2011, the recommendations in the OTA reports are still salient.

The Nuclear Waste Policy Act (NWPA) established OCRWM in 1982 and provided guidance to include state, tribal and local governments in siting decisions related to repositories, interim storage sites and research programs. Congress provided further direction in 1987, with the Section 180(c) provisions of the NWPA amendments which require DOE to provide funding for training for local emergency responders. Benefits packages were also specified for state, tribal, and local governments which accepted a repository or monitored retrievable storage site; however, with acceptance, the state, tribal or local government waived rights to veto any facility. The 1987 amendments were controversial, however, as Congress directed DOE to focus its characterization activities on a single site—Yucca Mountain.

After years of investigation into the feasibility of a salt repository in various states for defense waste, the Waste Isolation Pilot Plant (WIPP), located in Carlsbad, New Mexico, was authorized in 1979. The legislation required DOE to enter into a consultation agreement with the state of New Mexico. In December 1982, a Supplemental Stipulated Agreement was signed to address state issues, including transportation and emergency preparedness. Later amendments to the Agreement expanded public disclosure of information and established processes for public comment on WIPP activities. The 1992 Land Withdrawal Act clarified the oversight role of the state and codified transportation and emergency response requirements.

In 2003, DOE issued its public participation and community relations policy. DOE also issued guidance and policy addressing formal consultation with American Indian Tribes and recognizing the unique standing of Tribal governments as sovereign nations (DOE O 1230.2). Government-to-government relationships are discussed and mechanisms to address tribal involvement in programs are outlined in the policy.

The basis for stakeholder involvement in DOE programs is well established and some programs have been more systematic in their approach to involvement than others. Some DOE programs have developed involvement processes that have resulted in increased trust among participants and increased the capacity of all participants to understand technical and social issues resulting in development of options to resolve those issues. According to program evaluations and participant comments the SSAB process has produced effective technical and programmatic decisions for particular programs.

III. Selected Examples of Stakeholder Involvement in DOE Programs

The examples of stakeholder involvement processes and activities in DOE siting activities have been selected because of lessons they provide on use of innovative techniques, breadth of scope in terms of stakeholders involved, and complexity of the siting or transportation activity from technical and political points of view.

A. Siting

1. Spent Fuel and High-Level Waste Repository and Monitored Retrievable Storage (MRS)

The Department of Energy and its predecessors (the Atomic Energy Commission and the Energy Research and Development Administration) have used varying degrees of public involvement in the quest for a solution to management of radioactive waste, including high-level waste and spent fuel. T. F. Lomenick, in *The Siting Record*, provides an account of efforts from 1955 through 1994 to site repositories in the United States. Lomenick breaks waste management activities into five periods: 1954-1961, 1962-1972, 1973-1975, 1976-1982, and 1983-1987. He notes that the program had a policy of active

participation by state and local organizations from the early years and cites the work of the state geological surveys in the 60's and 70's as active participants in site investigations. He observed that in the 70's and 80's the role of tribal, state, and local governments increased in both technical as well as environmental and sociopolitical work (Lomenick 37). In the early period of the Waste Management Program (1976-1987), states and tribes with potential repository sites were consulted and funded for participation in technical studies, consultation and membership on a variety of work groups, including the State Planning Council (1978) and the State Working Group (1980), (Lomenick 43). The interim storage facility siting effort (NWPAA, Section 135, 35-43), including the MRS, proved to be impossible to complete because of fears that the facility would become a de facto permanent storage site. The MRS and the siting activities of the Office of the Nuclear Waste Negotiator established in 1987 were subsequently abandoned after attempts to find volunteer sites could not obtain needed state and local approvals. In 1995, The Office of the Negotiator was not reauthorized by Congress and was terminated.

The NWPA Amendments in 1987 specifying the selection of Nevada as the only site to characterize for the repository and the pitfalls inherent in that decision have been well-documented and examined by policy experts and others. Some experts in public involvement processes and most critics of the OCRWM program note the decision to only characterize one site was flawed from the outset by its political nature and by not allowing the scientific investigation of other possible repository sites for spent fuel and high-level waste to play out. The Congressional decision was, for some, the worst case of federal over-reach.

However, others have argued that Congress, in its role as the policy-making and legislative body in the United States, was the proper forum for debating and deciding critical national issues such as nuclear waste policy. The 1987 amendments had established a Nuclear Waste Technical Review Board of scientists and engineers to oversee the program and OCRWM funded local government officials in Nevada for consultation and technical analysis related to Yucca Mountain impacts on their communities as part of the Act's mandate to consult with affected local governments. The state received funds for technical oversight and monitoring of the project. DOE made extensive use of the NEPA process to inform citizens nationally and locally of risks and possible mitigation strategies as it developed the Yucca Mountain site with Environmental Impact Statement (EIS) issued in 2002 and an updated Supplemental EIS in 2008 which also included a supplemental analysis for a rail corridor across Nevada (DOE/EIS-0250, 2002 and DOE/EIS2052-FS1 and FS-2, 2008). OCRWM also developed national outreach efforts through information dissemination, tours of the site and a project for educators which resulted in a science curriculum that was widely used around the country and in Nevada, particularly in the early years of the program. The National Association of Regulatory Utility Commissioners and the National Conference

of State Legislatures were funded to follow the progress of the program and inform and educate its members about the program. Three tribes in the Northwest were funded during the site evaluation activities at Hanford but when the site was cancelled with the enactment of the NWPAA in 1987, funding was terminated. In the last years of the Yucca Mountain effort, one Indian Tribe, the Timbisha Shoshones, was granted “affected” status by the Bureau of Indian Affairs in 2007, after years of petitions to the BIA.

These efforts were ultimately not sufficient to overcome the “credibility gap” the Yucca Mountain project sustained. In a presentation before the BRC Subcommittee on Transportation and Storage, Mr. Cash Jaszak (a consultant for Nye County, Nevada and former DOE contractor) noted that Nye County (the host county for Yucca Mountain) could not “go it alone” despite DOE’s efforts to work with the counties and to fund independent technical analysis. He suggested that “DOE routinely ended up with suboptimal decisions because of political expediency and following the path of least resistance.” DOE’s adversarial relations with the State made productive relationships with affected units of local governments increasingly difficult. (Jaszak, September 2010)

The message from observers, NGOs, and some in the program has been that stakeholder relations were flawed from the outset because of an historic DOE culture of secrecy derived from its main mission as a weapons production agency, the prescriptive set of requirements and schedules for the program as established in the NWPA, and the federal imposition of a site through direction rather than scientific investigation. According to the State of Nevada, DOE interference with the state’s oversight work contributed to the sense of distrust. (Breslow 2010)

Inherent internal conflicts in the repository program due to bi-furcated management between the Nevada Office and Headquarters in Washington, conflicts over funding for various elements of the program and varying degrees of support for stakeholder involvement programs resulted in inconsistent programmatic approaches to involvement activities. In some years, an aggressive public involvement program was evident. In other years, program priorities and funding dictated a much reduced level of outreach and involvement. Internal conflicts impact external participants and hobble the ability to have consistent approaches to stakeholder involvement. Although conflict and difference of opinion are helpful when deliberating technical and societal issues, agreement about what is the exact problem being solved is necessary in order to move forward with productive deliberations. Judy Treichel, an organizer of the Nuclear Waste Task Force, in correspondence and a telephone interview suggested that “only when everyone can agree on the problem can you have widespread official and public cooperation on the possible solutions and which might be best. Officials and the public would be expected to cooperate in working out a least risky and most affordable solution.” (Treichel 2011) Those representing groups most opposed to the Yucca Mountain site acknowledge that a new process to involve a broad range of stakeholders in

discussions about options, to build trust and accountability for future approaches and to clearly define what is meant by storage and disposal is needed. (Olson, Nuclear Information Research Services, telephone interview 2011). What lessons can be learned from the processes used to site a repository in Nevada? The suggestion of the National Research Council panel report, *One Step at a Time: The Staged Development of Geologic Repositories for High-Level Radioactive Waste* (2003), is to have a more transparent process that involved stakeholders in decision points along the way. The panel noted that the DOE program in 2002 lacked transparency of some decision points and was driven more by schedule and meeting milestones, which inhibited adjustments and continuous learning. A more structured and systematic approach to identify stakeholders, defined goals for engagement, and openness to suggestions as the program proceeded might have assisted with credibility and trust.

2. Waste Isolation Pilot Plant (WIPP)

In contrast to the Yucca Mountain project, WIPP is widely viewed as the model to follow in order to site and construct a repository. One fundamental difference between WIPP and OCRWM was that Carlsbad, New Mexico was a willing host community that had significant political support locally and nationally. The site had been reviewed and analyzed with the help of the state resource agencies and universities. Western states with facilities with waste destined for WIPP could support the facility in principle and that created a different dynamic than that for Yucca Mountain. The western states have few nuclear utilities, but do have most of the defense waste.

After five years of characterization, WIPP was authorized by Congress in 1979 as an R&D facility and a pilot project, another significant difference from the approach Congress used for OCRWM. Congress clarified the intent of the WIPP facility with the DOE National Security and Military Applications for Nuclear Energy Authorization Act of 1980 (Public Law 96-164), which stipulated that WIPP could not be used for permanent disposal of spent fuel and high level waste and prevented New Mexico from having veto power over the site, but granted “consultation and cooperation” rights to the state. The law also removed the project from Nuclear Regulatory Commission licensing. The state did not get oversight of the facility in the law and subsequent disagreements led to a lawsuit in 1981. The state sued DOE and the Department of Interior in 1981 and settled out of court with a formal Consultation and Cooperation Agreement which provided for: further study of the site, increased communication between state and federal officials, independent technical evaluation of the project and emergency response provisions. DOE agreed the waste would be retrievable for a certain time after emplacement.

The WIPP Land Withdrawal Act of 1992 was a turning point for WIPP because it designated EPA as the regulatory authority to certify that WIPP met disposal standards and, most importantly, that WIPP fell under RCRA for mixed waste. (Public Law 102-579) This provision allowed the state to regulate mixed waste at WIPP and required

WIPP to obtain state permits in order to operate. EPA certified WIPP in 1998 and it opened in 1999. An independent technical review group funded by DOE and managed by the state was also established in 1978 to oversee the development of the facility. That group was disbanded after WIPP received state permits and EPA certification and the state became the main oversight along with EPA for the facility.

Citizens in New Mexico were not as enthusiastic as the local officials about the prospects of Transuranic Waste being sent to the state. WIPP did have extensive public outreach related to its environmental assessments, public meetings for permits and EPA certifications and engagement with NGOs. According to Don Hancock, Southwest Research and Information Center, the role of NGOs, particularly environmental interest groups in New Mexico, has been to provide public comment to WIPP and its regulators on permitting questions. Environmental groups have provided comment and input on every permit application and issue and routinely receive permit notices from WIPP. Recertification for the RCRA permit is the process where stakeholders (NGOs in particular) have input and use that process rather than lawsuits. The downside is that no formal, compensated mechanism for their role is in place. Recently, WIPP has developed a new Community Relations Plan which is on the internet for review and comment. WIPP also has had a long-standing site tour program and extensive public information and outreach activities for educators and the public across the state.

At the local level, WIPP has consistently received support and approval for its relations with the local government and community. One notable activity involving local community members is the radiation monitoring program managed by the Carlsbad Environmental Monitoring and Research Center (CEMRC) run by New Mexico State University. The laboratory is an independent research group which is funded by DOE, but does not provide input into any permitting activities. It monitors soil, air, water, plants and animals and makes the collected data known on its web site. In addition, a program called "Lie Down and be Counted" is a long-term research project that measures internal radiation doses of volunteers from the community. This research process uses counters to measure the tiny amounts of radioactive material typically found inside the human body. Over 3,000 measurements (some of the same individuals) have been taken since 1997. The Center also conducts other environmental research for DOE and other agencies. The laboratory fulfills one of the reported preferences shown by Dr. Hank Jenkins-Smith in his survey research in which people are more likely to approve a facility like a repository if it is co-located with another facility, such as a research laboratory (Jenkins-Smith 2010). Frequent public policy surveys in New Mexico by the Institute for Public Policy at the University of New Mexico showed increasing support for the program as more information was provided and as permits were received.

WIIPP also benefited from DOE's decision to move all management responsibility from the Albuquerque Operations Office to the Carlsbad Office. The Carlsbad community pushed for more authority for the site and in the mid-1990's, prior

to WIPP opening, managers and staff in Albuquerque, New Mexico were relocated to Carlsbad. Functions transferred included contracting authority, emergency response, public information, and management reporting. The office subsequently became a field office reporting directly to EM management rather than through the DOE Albuquerque Operations Office.

3. Site Clean-up Stakeholder Involvement

Although site clean-up is not the same type of siting activity as a repository, the EM program's experience of involving stakeholders in decisions about what kinds of technologies to use, how much material to dispose on-site or remove, and the uses for a site after remediation is complete have helpful lessons for how to establish and maintain long term stakeholder participation. After participating in the 1992 EPA sponsored Federal Facilities Environmental Restoration Dialogue Committee, EM established a Site Specific Advisory Board (SSAB) composed of stakeholders from communities adjacent to clean-up sites at former nuclear weapons facilities. The SSAB, which is comprised of the local boards at clean-up sites, is chartered through FACA and is the largest FACA group in the country. The SSAB is the only directly funded citizen advisory board for EM planning and decisions related to clean-up of the nuclear weapons sites (Nielson and Brennan 1). Other groups and organizations are funded by EM for different kinds of input, including the National Association of Attorneys General (NAAG), the EM Advisory Board (EMAB), and the Energy Communities Alliance (ECA).

Significant results from the SSAB process include local recommendations on site activities and cross-site sharing of strategies and technologies that have been effective. Local boards are composed of people directly affected by site activities and who typically bring diverse views to the group. Individuals represent business, education, local governments, environmental organizations, civic groups, labor and interested citizens. The group provides input to DOE as consensus recommendations. SSAB charters are renewed every two years and each board reviews its progress annually, which contributes to continuous improvement and helps maintain the SSAB. The Board just celebrated 15 years of working together in 2009 (Nielson and Brennan 1).

In a review of the EM SSAB presented at the Waste Management Conference in 2009, Nielson and Brennan provide examples of contributions made by local boards which numbered up to 11 at one time. Three examples - the Fernald Citizens Advisory Board formed in 1993 and disbanded in 2006 with the closure of the Fernald site, the Nevada Test Site Community Advisory Board, and the Rocky Flats Board - are discussed here to show how local board deliberations can be effective. In each of the cases, the collaboration between DOE site managers and the boards impacted the clean-up work. Each board was organized differently based on local needs.

The Fernald Board worked for two years to develop its "balanced approach" to site clean-up. The Board met monthly for two years to debate, analyze and discuss what to do with the large volume of waste at Fernald. As told by John Applegate, the former

chair of the Board, the recommendation was to keep 85 percent of the waste (lower level wastes) on site and ship the other 15 percent off-site. The approach is estimated to have saved several hundred million dollars and accelerated the clean-up significantly. Transportation issues were a major concern of the community and the Board worked with DOE to make siting decisions about the waste and on decisions to move material by rail rather than truck. The Board accomplishment is documented in an Oral History project which can be accessed through the Fernald Community Alliance web page. The Alliance is a follow-on organization to the SSAB and is establishing a museum on the site, which is now a nature center.

Although the work of the Board was exemplary for Fernald site clean-up, and the Fernald office worked with stakeholder groups in Nevada and with the Nevada Low Level Waste disposal site at the Nevada Test Site, some stakeholders viewed the fact that some of the waste went to another facility, not in Nevada was an accomplishment for Nevadans (Treichel). Fernald had a staff person stationed in Nevada to assist with community involvement about the shipments of Fernald waste to Nevada. The Nevada stakeholders pressed the Nevada Test Site (NTS) to fully disclose what kind and how many shipments of low level waste were being sent to Nevada for disposal. That information which includes waste from all DOE sites is now available on the NTS web site.

The Nevada Test Site Board developed a subcommittee to address groundwater contamination from underground nuclear tests. The board conducted extensive studies, worked with scientists and expert geologists, hydrologists and regulators. It held public meetings on the subject. In 2002, the DOE asked the Board to select a new location for a characterization well and it ultimately selected one of three locations to drill a well. It was the first time and the only time a groundwater well was sited by an EM advisory board (Nielson and Brennan 7).

The Rocky Flats Citizen Advisory Board was unique among the other SSABs because it was incorporated as a non-profit organization and funded with a grant from DOE. The most significant achievements were decisions related to soil clean-up levels for plutonium and long-term stewardship of the site. The board also contributed ideas for accelerating the time-frame for clean-up which resulted in savings of \$7 Billion, compared to estimated costs for longer-term clean-up (Nielson and Brennan 6).

The SSAB effectiveness was documented over several years of evaluation. Studies conducted in 1996 and 1997 measured outcomes and 1998 and 2002 studies measured board effectiveness and general public outreach (Bradbury 2005). A later summary developed for the NAS indicated that the DOE process, which provided local Board's autonomy to select members and set agendas for issues as long as they adhered to the general goals established by the program, was effective for Board management. EM Headquarters contribution was to provide opportunities for cross-board communication and learning and to assist with problems. Some challenges identified by

Bradbury included “achieving balance between activist groups who had opposed DOE in the past and business or other groups supportive of DOE, maintaining ethnic diversity, and ensuring representation and engagement of non-technical affected parties.” (Bradbury 2005, 8) Another issue early in the SSAB process was the concern by elected officials who questioned that Board members were really representative of the community, suggesting that that was the responsibility of the elected officials. Those concerns were ultimately mitigated by the SSABs by working with local officials and including them on the board.

The SSAB appears to have met the goals outlined by the NRC for public participation:

1. Quality of decisions that: identify values and concerns of those affected, systematically identify the range of actions available, identify and consider effects resulting from actions and uncertainties, use best available knowledge and incorporate new information
2. Legitimacy: the process is seen as fair and follows governing rules
3. Capacity: participants become better informed, are better able to engage the scientific knowledge and information about diverse values, interests and concerns, develop shared understanding, and improve communications with each other (NRC 1&2).

By having a clearly defined set of goals with a basis in requirements for public involvement and advisory boards, EM was able to clearly articulate the rules and still maintain flexibility at the local level. The SSABs found their own ways to organize themselves to address local values and concerns. The EM management invested local authority in the site manager, which allowed quick resolution of conflicts and reinforced the ability for decisions made locally to be implemented. According to program evaluations and participant comments the SSAB process has produced effective technical and programmatic decisions for particular programs.

4. Global Nuclear Energy Partnership (GNEP)

GNEP was formed to support international and domestic expansion of safe, secure and sustainable nuclear energy. The program included goals of changing from a once-through nuclear fuel cycle to a closed cycle which could recover energy bearing components through recycling. An EIS was developed to assess potential environmental impacts of expanding nuclear power either through the current fuel cycle or alternative open and closed cycle technologies. As part of the program, DOE announced on August 3, 2006, that it would issue financial assistance grants to public or commercial entities interested in hosting GNEP facilities. Applications from interested entities resulted in 11 grants being awarded on January 30, 2007. Part of the analysis for the EIS included several rounds of public meetings and discussions at the various communities around the

country that were selected as part of the grant process. DOE ultimately decided to not make a decision about either technologies or locations for the proposed program. (DOE/EIS-0396)

The GNEP example is included because it illustrates a process in which DOE requested volunteer sites to host facilities and awarded grants to those who volunteered to participate. The use of a grant was consistent with recommendations from stakeholders and researchers for volunteer host sites to be able to fully engage in analysis in order to make informed decisions about whether they wanted to proceed with a project. In addition, the GNEP contracted with an organization that represents local governments around DOE facilities, the Energy Communities Alliance (ECA), to help convene and communicate with local officials about the program. ECA has a long-standing relationship with local officials and is experienced in framing issues in order to have an effective discussion between federal program officials. Having a trusted third party convene local officials (or other stakeholders) can provide credibility for a program and assure that the right parties come to the table.

B. Transportation Stakeholder Involvement

Transportation is the one activity in a controversial program that is able to reach beyond a single site and involve stakeholders and interested parties along shipment routes. When transportation involves radioactive material, it tends to raise public concern. Those concerns have in the past been mitigated by:

- collaboration with key stakeholders on shipping activities that are carefully planned and follow specific procedures
- operational protocols that may be extra-regulatory
- providing benefits through emergency preparedness training and exercises with state, tribal, and local officials
- maintaining formal agreements and funding which are evaluated periodically to improve the transportation process with state and tribal government partners.

1. OCRWM

In 1985, the OCRWM Transportation Office issued a Draft Transportation Institutional Plan which outlined stakeholder outreach and involvement process and defined key issues which needed to be resolved in order to develop the proposed transportation system. A stakeholder workshop was held in Atlanta in September 1986 to receive comments on the Plan. The preface to the final Plan articulated the need to combine both safety and technical activities with broad public understanding and confidence in the program and established the basis for all transportation institutional activities that persisted throughout the life of the program. When OCRWM funding was cut for transportation from 1994-2004, the EM National Transportation Office assumed

responsibility for these stakeholder involvement activities until funding was restored and the OCRWM program revisited transportation planning in 2004.

The 1986 Transportation Institutional Plan focused on process, OCRWM and stakeholder roles and responsibilities, the intersection between the technical and institutional program elements and described in detail the issues needing resolution in order to establish the transportation system for the repository. The Plan also differentiated between communications and public information and stakeholder involvement. It described which organizations were to be engaged in deliberations on the specific issues listed below:

- Transportation of Defense Waste
- Prenotification
- Physical Protection Procedures
- Highway Routing
- Rail Routing
- Inspection and Enforcement for Highway and Rail Shipments
- Emergency Response
- Liability Coverage for Transportation to NWPFA Facilities
- Cask Design and Testing
- Overweight Truck Shipments
- Rail Service Analysis
- Mixture of Transportation Modes
- Transportation Infrastructure Improvements
- OCRWM Training Standards
- Transportation Operational Procedures
- State, Tribal, and Local Regulation of Transportation

The Transportation Institutional Plan provided a starting point for discussions and debate on how OCRWM transportation would be organized and performed. Lisa Janairo and Melissa Bailey, Council of State Governments suggested that:

The publication of the Transportation Institutional Plan in 1986 ushered in a period of nearly 10 years of intense activity. Starting in the mid-1990s, the level of activity began to drop until 1998, when the transportation program was abruptly terminated as a result of the redirection of the OCRWM program to place all emphasis on Yucca Mountain site characterization. In 2003, after five years of virtual inactivity, the institutional program struggled to restart, never quite managing to hit its stride. As a result, the program's final years were marked by few real accomplishments. There are some obvious lessons learned emerging from this recurring theme. First, given the history of the transportation

institutional program, it is clear that the federal program would benefit by returning to its roots. While much of the factual information in the Transportation Institutional Plan is out of date, the plan's inclusive approach to stakeholder consultation and cooperation in developing the transportation system stands as a model that the states and others stakeholders would likely continue to support. A good first step in resuming the transportation program, therefore, would be to update the Transportation Institutional Plan while retaining its underlying philosophy (Janairo and Bailey 5).

For national deliberation on the issues, OCRWM established the Transportation Coordination Working Group (TCG) composed of a broad set of stakeholders to address the issues and resolve them; however, with changes in the overall program, reduced funding in the 1990s and other program concerns, the institutional coordination efforts faltered. The TCG was active from 1985 until 1995. In 1992, OCRWM teamed with EM and established the Transportation External Coordination Working Group (TEC) which continued to address the issues outlined in the Transportation Institutional Plan. OCRWM once again assumed management of TEC in 2004, after EM and OCRWM decided that the TEC was needed to focus on OCRWM issues again. The TEC process evolved to focus on issues being discussed through "topic groups" which functioned as sub-committees of the whole group. Participants self-selected themselves by interest or expertise they brought to a group. Strict notes and summaries were captured and disseminated after meetings for comment and posted on a TEC website.

One of the most successful topic groups was that for the development of the Section 180(c) policy for funding states and Indian tribes for emergency preparedness training. In addition to the main topic group, TEC established a tribal topic group with tribes along prospective transportation routes for OCRWM. The result of consultation on Section 180(c) of the NWPA was a different approach to funding for tribes than that for states. Elizabeth Helvey described the effort in her summary of the history of Section 180(c) in OCRWM:

To ensure tribal issues were fully addressed OCRWM formed, in 2007, a separate topic group focused on Native American concerns. This group only dealt with the issue of how to allocate funds among eligible tribes and the prevailing view of all parties was that a needs assessment conducted with technical assistance from DOE was the best option. The Tribal Topic Group would have continued its work on more intractable issues if the OCRWM program had not been defunded (Helvey 8).

Other stakeholder arrangements included a series of cooperative agreements with state regional groups, state safety officers, highway department planners, and legislators. Each group was tasked with assisting with a specific issue that fell into their area of expertise.

State Regional Groups (SRGs) were a key feature of the OCRWM transportation stakeholder activities because the states were responsible for public safety and enforcement. Cooperative Agreements with four SRGs - the Western Interstate Energy Board (WIEB), the Southern States Energy Board (SSEB), the Council of State Governments' Midwestern and Northeastern Regional Offices (CSG-MW and CSG-NE) were maintained by OCRWM from 1984-2009 even though minimal or no funding was provided during the times transportation was in a hiatus. These groups worked on safety programs, emergency training and planning, communications, routing and inspections, tracking, transportation operations and strategic planning.

The Commercial Vehicle Safety Alliance, an association of state highway vehicle inspectors, was engaged by OCRWM in 1986 to develop procedures for "safe, routine transportation" that led to the Enhanced Inspection Standard or Level VI inspection program. The inspection protocol is now part of the Department of Transportation regulations. The CVSA formed a special committee of state inspectors who were from the highway patrol hazardous material inspection cadre. The criteria to be applied for spent fuel shipments went beyond existing inspection protocols for other vehicles in order to assure the best maintained vehicles were being used. The inspection procedure envisioned that vehicles and drivers would be inspected prior to leaving a facility, encouraged reciprocity among the states to avoid multiple and duplicative en-route inspections, and established a special decal to indicate the truck had been inspected at point of origin and declared "defect free." At the same time procedures were being developed, CVSA developed and tested a training program for state inspectors on the new procedures. When funding for transportation was reduced in the period from 1992-1998, the EM National Transportation program funded CVSA and developed a pilot project to test the procedures. WIPP adopted the CVSA program, ultimately taking over funding and management responsibility and using the process for its shipments. The validation from state inspectors that WIPP shipments are among the safest trucks and drivers on the road assisted the program's credibility. WIPP truck drivers and some DOE shipping site personnel participated in the CVSA training program which created positive communications and working relationships on the CVSA safety project.

OCRWM funded the Association of State Highway Transportation Officials (AASHTO) to review truck size and weight requirements to determine permitting issues related to overweight trucks. For highway shipments, the "legal" weight truck maximum weight is 80,000 pounds. Due to infrastructure issues (bridges, tunnels, and highway pavement) trucks over that weight required special permits and routing. AASHTO surveyed highway, toll road and bridge and tunnel authorities and determined that a truck with certain configuration could be readily permitted in all but one state.

OCRWM issues on which some progress had been made by 2009 through work with TEC, CVSA and the State Regional Groups included enhanced inspection procedures for truck shipments, a policy decision to use special or “dedicated trains” for OCRWM shipments, and agreement on a funding approach and policy to satisfy the emergency planning and training requirements under Section 180(c) of the NWPA. Liability coverage for spent fuel shipments was addressed with the 2005 reauthorization of the Price-Anderson Act (Public Law 109-5) and an approach to routing was re-started in 2008 (Thrower, 2008).

The OCRWM Transportation program developed relationships and some levels of trust among DOE, state, tribal, and local officials, the transportation industry, utilities to a certain extent, and other federal agencies. State Regional Groups were the backbone of the transportation stakeholder program in OCRWM and continue have the capability to address future transportation needs. According to Rick Moore, a former Wyoming representative to the WIEB, one of the best efforts to emerge from the Yucca Mountain transportation program was the TEC, which provided a safe place to debate issues and come to agreement among the participants. Transportation tended to be ahead of the repository program in some areas because it was an established commercial function with a robust industry base. Inconsistent funding for transportation affected the program’s credibility with stakeholder groups who had become invested in the program through years of work to resolve issues. DOE introduced legislation in 2006 and 2007 to basically preempt state regulation which further eroded stakeholder confidence in OCRWM’s ability to follow through on its commitments. Concerns that the transportation stakeholder involvement program was not in line with the rest of OCRWM’s progress also created tension internally. The last few years of the OCRWM transportation effort was more productive because senior management recognized the value of having a more integrated program and understood that transportation by its nature had a national scope with the opportunity to engage many stakeholders.

2. WIPP Transportation

WIPP began to address transportation after the site was selected, which assisted the planning process – policy debates about the site were more or less settled (Moore 2011). The Department of Transportation funded the WGA in 1988 to develop a report on transportation issues in the west related to WIPP and the governors mandated that their state officials work to develop safe, routine, transportation for WIPP. Following the report to DOT, the WGA WIPP Technical Advisory Group in 1989 was funded by DOE to cooperatively develop a WIPP safety program. A formal agreement on the role of the states and a set of procedures that the states and WIPP would follow were documented in the *Waste Isolation Pilot Plant Program Implementation Guide*. The procedures included: emergency preparedness and training, public information, vehicle inspections, routing, satellite tracking and notification, and other operational activities, including

“extra-regulatory measures.” An example of an extra-regulatory procedure was WIPP’s agreement to follow the DOT regulation for shipments of highly radioactive material like spent fuel (49 CFR 397), even though Transuranic waste shipments were not subject to the requirement. Memorandums of Agreement were signed in 1995 and 2003 between DOE and the Western States to formalize the procedures and the cooperative work process. Other guides and cooperative agreements were also developed with the other three state regional groups.

The WIPP State and Tribal Emergency Preparedness (STEP) program was developed and implemented years before WIPP opened. WIPP provided training directly to local officials along the eventual shipping routes. At the same time training occurred, a public information event was held with the local elected officials, the public and DOE representatives. A truck with an empty container was used for both training and display and information products were disseminated. The emergency preparedness training provided to local officials by WIPP was eventually transferred to state trainers after negotiations with WIPP. Due to delays in opening WIPP, the transportation program had 10 years to prepare state, tribal and local officials along routes that had been negotiated with the states. The training program expanded knowledge about the overall WIPP program and served as a public information dissemination point. In addition to receiving training for WIPP shipments, the curriculum provided basic information about radioactive materials response. Full-scale exercises were conducted prior to WIPP opening, which provided additional assurances that the state and local responders were prepared to manage a WIPP accident. States along each shipping route in the west formally acknowledged they were prepared for shipments before WIPP opened. WIPP also strategically “opened” routes from shipping sites in a phased roll-out, which allowed resources to be concentrated along single corridors at a time and to gain experience along the way. WIPP directly funded tribes with routes through their lands to develop emergency preparedness plans and information. Tribes also participated in training and exercises with WIPP, both individually and in conjunction with the states.

According to Alex Schroeder, WGA staff, constancy of funding, regional coordination among the states, familiarity with DOE and state staff, and renewal of the MOA with DOE when administrations turned over help maintain the program even with political transitions at the state and federal level. By having good working relationships, trust is gained so that when problems occur the parties work out mutually acceptable solutions. “When minor accidents have happened involving WIPP shipments, states have generally handled incident the like any other traffic event” (Schroeder, 2011).

3. The National Transportation Program Office

The EM National Transportation Program Office manages hazardous materials policies and procedures for DOE non-classified shipments, manages the Transportation Emergency Preparedness Program (TEPP), and provides certification services for some

DOE packaging. In 1992, the EM Transportation Program launched the Transportation External Coordination Working Group with the support of the OCRWM Transportation office. OCRWM did not fund the TEC, but did co-chair it and contributed staff and contractor support for the work of the group. TEC “members” were composed of organizations responsible for, or with an interest in radioactive materials transportation: rail and trucking industry; state, local and tribal government; emergency planners, trainers and responders; utilities; highway and rail enforcement; vehicle inspectors and law enforcement officials; and DOE programs. Other federal agencies also participated, including the Department of Transportation and the Nuclear Regulatory Commission.

A TEC Charter and a Memorandum of Understanding between the OCRWM Program Director and the Assistant Secretary for EM was approved by the Secretary of Energy. The group was not organized as a FACA group because its charter was to assess options for issue resolution, not to make consensus recommendations. The TEC usually met twice a year from 1992-2008. The TEC process was discussed previously in the OCRWM transportation section.

In 1996, Judith Bradbury and Kristi Branch of Pacific Northwest Laboratory conducted an evaluation of the TEC which showed that the working group was considered valuable to the participants based on outcomes which included: improved communications, product development, building relationships and networking, building better understanding and increased trust of DOE, increased coordination across DOE programs, provision of information and increased understanding of other organizations (Bradbury and Branch, v). As a result of evaluation feedback, the TEC implemented small work groups called Topic Groups. Topic Groups were short term work groups or subcommittees of the larger TEC. When an issue was considered “resolved,” the topic group disbanded and members could join another group. Topic groups included work in issues such as rail operations and regulations, tribal issues, communications, emergency preparedness and DOE-wide transportation protocols (procedures).

The emergency preparedness topic group focused on developing training materials (Modular Emergency Radiological Response Training [MERRT]) for the EM Transportation Emergency Preparedness Program (TEPP). The topic group was composed of local responders and state emergency managers, who developed and tested the curricula, which added credibility to the material and assured that it was workable. The MERRT materials have been widely adopted by the states and are used by WIPP for its training. MERRT was expected to be used in conjunction with training required under the Section 180(c) requirements of the NWPA, should states and tribes choose to use them.

The Protocols topic group work was initiated in 1999 by the DOE Senior Executive Transportation Forum (SETF). SETF was organized to better integrate and communicate across DOE programs internally and was composed of senior managers from DOE programs with major transportation activities. The protocols development was

in response to concerns from stakeholders about inconsistent shipping procedures for similar materials in various DOE programs. (TEC Meeting Summary, 1999) The protocols group worked for two years to develop a set of operations protocols that outlined how all DOE programs would conduct shipments and was codified as policy in DOE Order 460.2M, *Radioactive Material Transportation Practices Manual* issued in 2002 and updated in 2008.

The NTP employed a series of surveys from 1994-1997 to better understand public sentiment about radioactive materials shipments: where people obtained information, which agents were trusted and what kinds of information led to “public acceptance” or at least tolerance of the action. Pre- and post-shipment surveys regarding cesium capsule shipments from Northglenn, Colorado to the DOE Hanford facility in Washington State were conducted in 1994 by Hank Jenkins-Smith, then at the University of New Mexico. Shipments of Foreign Research Reactor Fuel into Wilmington, North Carolina and Concord, California were also studied. Focus groups were held in four regions of the country to determine if regional differences mattered when radioactive materials were involved. TEC participants beta tested the surveys at one meeting and provided comments on language in the survey instrument.

The survey responses provided useful information for program implementation, including: understanding how a particular demographic (gender, age, education level) was correlated to strength of concern; the importance of having third party regulators oversee transportation activities; and learning that most people received their primary information from the media, even if it was not viewed as the most trustworthy information provider. The surveys validated that the most trusted entities for the public were local emergency responders, including fire services. DOT and DOE were acknowledged primarily for their having technical competence to carry out transportation safely. An important finding was that transportation program design, transparency of information about the design, and the provisions of reasons for the shipping activity could all impact the level of support for shipments. Providing assurances of safety from trusted communicators (fire and emergency personnel) and giving states local control over shipment timing were important program features (Jenkins-Smith 1995).

In response to the survey findings, DOE developed a transportation plan for the Cesium shipments that used protocols similar to WIPP (similar enough that the states and WIPP agreed to use the cesium shipments to test implementation of the WIPP procedures) and was reviewed by states involved in the shipment. (We think this was the first DOE operational transportation plan shared with state and tribal officials) For the cesium shipments, DOE worked with state and tribal emergency managers to develop training materials, conducted train-the-trainer sessions and funded training officials to train local responders along the shipment route. This was slightly different from the WIPP program approach which initially used contractors for the training. The states and DOE coordinated development of information materials, including press releases and fact

sheets on the safety features of the shipment. The states had the authority to inspect the truck prior to shipment and to delay a shipment based on weather. A satellite-based tracking system was used. Technical problems with the system were identified based on system testing during pre-shipment exercises. The resulting shipments were completed in 22 months, a significant improvement over earlier estimates. The cesium shipment was essentially a pilot test for WIPP, particularly the test for the satellite tracking system, TRANSCOM, according to Rick Moore, then the Wyoming representative to the WGA WIPP Technical Assistance Group (Moore 2011).

Similar protocols were followed for the Foreign Research Reactor (FRR) Urgent Relief spent fuel shipments on the east coast in 1994 and the later Concord, California FRR shipments to Idaho National Laboratory. EM funded the four state regional groups to participate in planning for shipping campaigns from 1994-2004. A shipment of foreign spent fuel from the army munitions depot at Wilmington, North Carolina to storage at the DOE Savannah River Site was planned and executed with the help of the Southern States Energy Board. DOE's Savannah River Site developed the Transportation Plan and managed the operations of the shipment. The other three regional groups sent representatives to observe and learn from the shipping approach being developed. The process included having the Southern States Energy Board (SSEB) transportation work group convene planning sessions for table-top planning exercises and after shipment reviews with the stakeholders, including state environmental, emergency management and security staff, Coast Guard and Weapons Station personnel, shipping brokers and carriers, NRC staff, DOE headquarters and field office staff and contractors (SSEB 1999). These activities provided clear communications; opportunities to learn about the various agencies involved, increased the capacity of all parties to understand roles and responsibilities and enabled effective planning, in spite of an ongoing lawsuit by the governor of South Carolina. The focus was on shipment safety and principles of no surprises. One helpful finding from the survey research on the east coast was that people were more inclined to have a positive outlook on the shipment when they learned that the action was part of treaty commitments made with foreign nations under the Atoms for Peace program. The United States furnished nuclear fuel rods for civilian use to countries that agreed they would not develop nuclear weapons. Part of the Treaty agreement was for the U. S. to take back the used fuel for storage and eventual disposal.

A major difference between FRR and other shipping programs at the time was the use of ship and rail and intensive coordination with the Naval Weapons Stations and Coast Guard on the east and west coasts. For all these shipments, a minimum of a two-year lead time was needed to prepare. A number of public meetings were held on the west coast due to concerns about the shipment and because DOE announced selection of the port of Concord as the arrival point for the shipment before it contacted the local officials it had been working with for many months during development of the EIS and Record of Decision on which ports to use. Local officials were caught off guard by the

announcement and that precipitated months of public meetings to explain the rationale for the port selection decision. State and local officials held the meetings and DOE managers participated to provide information about the shipments. The major lesson from Concord was that once you have established a relationship with a key stakeholder (local officials), it is important not to erode the trust by blindsiding them with public announcements of policy decisions. Complete transparency and open communications are critical.

After 2001, a major change both within DOE and with state and tribal officials was the concern for security of shipments and how to address the tension between the need for transparency and the need for security. DOE and the states resolved that dilemma by using escort and security protocols similar to NRC security requirements. Security plans were developed by DOE security officers and only shared with other federal or state security officers.

C. Eastern Interconnection-wide Transmission Planning Project

DOE/ FERC initiated three Interconnection-wide Transmission Planning projects in 2009. The objective stated in a 2009 Funding Opportunity Announcement (FOA) was “to facilitate the development or strengthen capabilities in each of the three interconnections serving the lower 48 states of the United States, to prepare analyses of transmission requirements under a broad range of alternative futures and develop long-term interconnection-wide transmission expansion plans. The interconnections are the Western Interconnection, the Eastern Interconnection, and the Texas Interconnection.” Goals included having diverse interests represented and a transparent process in which the public could participate.

The Eastern Interconnection effort, which includes 26 principle transmission planning authorities and 42 states from the Atlantic to the eastern edge of the Rockies and Canada, has developed a consensus-making body that may be unique in its breadth, make-up, and goal of complete transparency in its deliberations. Following the grant award in September, 2009, a straw proposal for the make-up of the Steering committee and selection process was issued in December 2009. Webinars and face to face meetings were held to discuss the proposed approach. In April 2010, a stakeholder steering committee was proposed with mandates that it be a geographically and sector diverse body that provides consensus on various issues including the development of a long-term, stakeholder-driven planning process for the interconnected region and modeling of eight policy-driven resource plans and three detailed transmission plans. A first meeting was held in June 2010 where the Charter (shown in full in the Appendix) was developed (Morris 2011).

The process of selecting the steering committee is interesting because 29 members were selected across different sectors. States were one sector and received 10 seats on the Steering Committee. Canada has one seat. The other six sectors with three members each represented transmission owners and developers, generation owners and

developers, other suppliers, transmission-dependent utilities (TDUs), public power and coops, NGOs, and ex officio members from U.S. DOE and U.S. EPA. The group created ten regional sector caucuses across the eastern area, including Canada. Each regional caucus- nominated representatives to serve on an Eastern-Interconnection-wide Sector Caucus and as candidates for the Stakeholder Steering Committee. This was followed by a sector-by-sector election to select three individuals from each sector to serve on the steering committee. Most sectors and regions chose to use a transparent, on-line selection process. The states had a separate selection process. This process may be a model for the BRC to consider because of the diverse interests represented, the geographically-wide area covered, the relatively quick convening of the group (approximately four months) through a structured process, the transparent nature of the discussions via webinars and on-line discussions, and selection of members of the Steering Committee by virtual elections.

IV. Options for Future Stakeholder Involvement

The lessons learned and options presented here for future stakeholder involvement in spent fuel and high level waste management are not unique to these particular materials. When a government program or project is seen as being unfair, not open to alternative views or perceived as highly risky, the need is even greater to engage people affected to come to common understanding of the issues and values on all sides of the issue. The 1982 OTA report recommended similar institutional and stakeholder arrangements as those presented here. The lessons from the few examples of DOE programs described in this paper and best processes from the NRC study have been used to inform the options.

A. Lessons Learned

Process: The lessons from prior siting and transportation experience shows that lip service to stakeholder involvement by just doing required activities, providing information or engaging in “compliance behavior” such as public meetings to satisfy a mandate is not adequate for controversial and highly technical actions. Specific plans need to be developed to think through the proper approach to engage stakeholders, to develop the goals and objectives for involvement and to identify the issues needing resolution. Processes that have formal bases like a FACA group may have more ability to sustain themselves over time because the rules are clear on how the process is to work. If a FACA process is not used, other examples show that the group can establish its rules within an overall structure and goals for the activity being addressed, similar to the Eastern Interconnection Transmission Planning Stakeholder Steering Committee and the TEC work group. Maintaining agreements through formal MOUs, helps sustain long – term programs. Including key groups of stakeholders, whether self-selected, elected, or appointed is necessary to achieving diversity and breadth of opinion in the group.

Consistent funding for stakeholder activities to allow participation is critical to maintain fairness, credibility and viability of the enterprise. In spite of the lawsuits by the utilities, a mechanism for productive involvement with them is important for any fuel management solution. Clearly defining the problem, identifying when stakeholders can be engaged and for what purpose, and adhering to transparent information exchange should be built into any process.

Management: A management structure that encourages decision-making and implementation at the lowest level in the organization has been effective in the EM examples with the SSAB and at WIPP. Bi-furcated and competing management creates issues within the line and contractors, as seen in OCRWM. In its last few years, OCRWM had a senior manager who understood the need and dynamics for an integrated program and focused his lead staff on developing a culture that promoted integration. In addition, Jim Williams, in a 2000 doctoral seminar at the University of Colorado suggested that receptiveness to public involvement was a key organizational factor for both siting and transportation. Management attention and support through adequate staff funding, hiring or contracting the right kind of staff with the capacity to engage in stakeholder processes, having the right technical support for understanding the technical dimensions of the problem, and having the ability and will to resolve conflicts internally and with external parties is critical. As Peter Sandman noted in an interview with the Hanford Reach in 1994 “if top management is not tolerant of conflict inside the organization, there’s no way you’ll be able to do it (or manage it – my note) outside.” Having flexible program policies in place to guide rather than direct the goals of stakeholder processes is also useful. Social science research can help gauge public concerns about a program and suggest methods to address those concerns. Social scientists can assist with framing institutional and stakeholder programs, guide program evaluation approaches to monitor process and outcomes, and assist with societal values and concerns issues.

Communications: Keeping commitments is essential to maintaining trust, so policy certainty about program requirements, what can be agreed to with stakeholders, clearly articulating details about program features, and letting the public and key stakeholders know when and how to participate is important. Open and honest communication, even when bad news is delivered is critical to maintaining credibility. Being open to criticism and stakeholder suggestions is also important to clearly understand values and concerns. Communications requires an active listening on the part of all parties. Public interest and concerns evolve over time and new methods of communication through technology need to be recognized and explored as useful tools. Internal communications to have the organization aligned with management expectations, goals and objectives is as important as external communication and should not be overlooked.

Transportation: Lessons learned from prior transportation examples indicated that transportation needs to be integrated with other program elements (storage or disposal) for logistics and operational efficiencies and treated equitably in terms of funding and management attention. Partnerships with state, tribal and local officials are critical to transportation planning and implementation and need to be initiated early in any program. Allowing enough time to complete plans and consult with states and tribes is necessary for a long-term, controversial shipping campaign. Preparations with state and tribal governments for routing, emergency training and exercises, and other operational features take approximately eight years if starting from the beginning, especially if pilot projects to test the system, including implementation of Section 180(c) emergency preparedness grants, are included. Having local authority to make agreements with transportation stakeholders is essential to program credibility and trust as was shown by WIPP.

Agreements with states, tribes and local governments need to be formalized through Memoranda of Understanding or other formal agreements for maintenance of those agreements. Third party regulation of transportation packaging and transportation operations is essential for both credibility and operational consistency with the commercial world.

B. Planning and Siting Options

The options assume some role for the federal government in future program actions because of the inherently intergovernmental nature of relationships with state, tribal and local governments. Also, although credibility and trust in government is consistently rated as low, particular agencies such as DOE can gain trust and credibility as shown by survey results for EM and WIPP. In each option, funding participation by the various stakeholders is crucial for effective and diverse representation.

1. Publish an opportunity notice that requests stakeholder organizations indicate their interest in participating in a national forum to define the problem to be solved, recommend siting criteria, and establish a grant approach for volunteer sites. This group's work could be an extension of the BRC recommendations and would move toward national implementation of a program. A third party would convene the forum. This would be similar to the Transmission Line Planning group.

2a. The Commission or another organization like the National Academies of Science recommends a set of individuals representing various stakeholders from which a steering committee is selected and which includes technical experts, NGOs, states, tribes, local communities, social scientists, and utilities to work with DOE or a new organization to develop an approach to siting, including establishing stakeholder involvement rules.

2b. Selection of the “right” participants to represent a set of interests can also be done through an assessment process – collecting information through interviews with a broad range of stakeholders. The interviews should be structured to both identify the expectations and concerns of each interest group as well as the individuals that the group thinks can credibly represent their interests. This approach has the benefit of finding the people who are most respected and trusted rather than just the ones that are the most well-known and vocal to sit on a steering committee.

The steering committee could be chartered under FACA, which provides clear rules of conduct and time frames for work products. This would be similar to the early conference convened by the Keystone Center prior to DOE establishing the SSAB. The steering committee could both be convened and managed by DOE or by a third party convener. Conversely, not chartering under FACA and using a third party allows the government agency more flexibility in how to handle recommendations or deliberations. Frank discussions can be held and it can still adhere to the formal rules of conduct and schedules. The approach used by TEC is more like the non-FACA approach; however, it was convened by DOE.

3. Develop a phased approach to siting facilities, which recognizes the different nature of issues to be addressed at different time in the program.

Phase One: Convene host communities and states and tribes with existing storage of spent nuclear fuel and high-level waste, NGOs, utilities, and DOE into a steering committee managed through a third party to discuss preferences for a siting approach and to establish site selection criteria, to arrive at a common understanding of the problem, and to define terms so that all parties have a clear understanding of the issues being addressed. Additional criteria may be developed to show that community leaders have engaged their community members in the decision-making process. Potential volunteer communities would also be solicited to participate. Include discussion of all possible options, including on-site storage, regional storage and repositories. Include social science researchers early in project to establish evaluation guidelines.

Phase Two: Use the product from Phase One to establish criteria for a grant process to solicit volunteer sites. The steering committee would function through the point of site selection. Funding would allow volunteer communities to participate in siting criteria development and to assess possible sites. This would be similar to the GNEP grant and assessment process. Continue to use a third-party to convene the group and to work with local communities. Allow local communities to opt out of the program at any point in the process.

Phase Three: Once a site (or sites) is identified, establish a Technical Review Board for the overall program and a SSAB with community representatives, including state, tribal and local government officials, NGOs and other local organizations for each site. Support the SSABs with funding for them to hire independent technical experts to

assist their deliberations. Provide grants to local governments and the impacted tribes and state(s) to have independent technical reviews and oversight of the technical work for the site. This approach is a combination of the NWPA provisions and the SSAB approach.

C. Transportation Options

1. Develop a process like TEC under a FACA charter. Include the same organizations (states, tribes, local government representatives, industry, federal agencies, and technical experts) as the prior working group but add NGO's and social scientists. Have the group go back to basics and update the 1986 Transportation Institutional Plan. The group would address unresolved issues in order to develop a safe, secure transportation system that has public confidence. Build in a formal evaluation of the group's effectiveness. The FACA designation could build in rigor and accountability for progress on resolving issues.
2. Fund State Regional Groups and Tribes to engage in a TEC-like process, to participate in routing deliberations and decisions, and to develop pilot projects for emergency preparedness training and a 180(c) grant application process. Conduct a pilot shipping program. Plan for and conduct formal evaluations of the pilot projects. Enter into formal agreements about the role of states and tribes in transportation planning and implementation similar to the WIPP MOU with the Western States. Establish a process with states, tribes and local governments for safety and security procedures that is integrated across all jurisdictions.
3. Designate transportation sub-sections in the three siting options and the program phases and engage transportation stakeholders through those venues. When timing is right for pilot projects for transportation, combine Transportation Options 1 and 2. Build in formal program evaluation of the pilot projects for transportation and emergency planning and training.

These options are not new ideas - they have been advocated in prior OCRWM documents and earlier reviews of the program, including several OTA reports and the National Academies of Science report, *Going the Distance? The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States*. The difference is that now we do have models against which to judge various processes specific to DOE and a body of research into the range of stakeholder involvement goals, processes and lessons learned. The test for the options suggested here is whether, in the view of the stakeholders involved, they contribute to meeting the values and principles of fairness, transparency, increasing trust, increasing capacity, improved communication and understanding, and contribute to improved decision-making by all parties involved.

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APPENDIX

Charter of the Stakeholder Steering Committee (SSC) Eastern Interconnection Planning Collaborative (EIPC)

From EIPC Web Page

http://www.eipconline.com/Resource_Library.html

**Charter of the Stakeholder Steering Committee (SSC)
Eastern Interconnection Planning Collaborative (EIPC)
Purpose and Responsibilities**

The Department of Energy (“DOE”) Funding Opportunity Announcement (“FOA”) calls for the creation of a stakeholder steering committee to “provide strategic guidance to the Applicant’s analysts on the scenarios to be modeled, the modeling tools to be used, key assumptions for the scenarios, and other essential activities.” The SSC will gather input from stakeholders, represent their constituents’ interests in deliberations, and strive to achieve consensus on aspects of the transmission planning studies and reports by the EIPC.

The primary responsibilities of the SSC include:

1. Approve, and amend as necessary, the SSC Working Charter.
2. Represent the viewpoints and interests of multiple organizations within their sector and meet regularly with their Sector Caucus and Regional Representatives.
3. Make every effort to arrive at SSC decisions through consensus and determine an alternative decision-making process should efforts to reach consensus fail. If requested when consensus is not reached, minority views on substantive issues should be identified and described in the meeting and summaries posted on the EIPC website.
4. Attend all SSC meetings. There may be up to four 2-day SSC meetings each year, as well as conference calls and/or webinars on a monthly basis between these meetings. Membership on the SSC will require a significant commitment of time and effort through June 2012 and is intended to reside with the individual elected to the position.
5. Conduct all meetings and activities with transparency. All meetings of the SSC will be open to all and any interested individuals. Open meetings will be facilitated by professional facilitators and held in large venues where possible. EIPC will also provide live visual and audio (webinar) accessibility for interested stakeholders who cannot attend. All agendas, relevant documents, and work products will be posted on the EIPC website.
6. Participate in one or more Stakeholder Regional Workshops (SRWs) each year to inform and gather input from the broader Stakeholder community. There may be as many as eight SRWs each year.
7. Develop a process for how the SSC will collect input from stakeholders.
8. Establish and appoint individuals to the stakeholder Work Groups (WGs) that reflect balanced stakeholder participation.
9. Develop roles and responsibilities and deliverables for the various stakeholder Work Groups formed.
10. Ensure appropriate open communications between the SSC and stakeholders for receipt of input and feedback, as well as synthesize stakeholder input on the assumptions used to evaluate resource futures.
11. Review with EIPC the development of the “roll-up” case, and provide feedback.
12. Provide information to all stakeholders on the macroeconomic Futures, transmission build-out Scenarios, and related sensitivities.
13. Work with the Eastern Interconnection States Planning Council (EISPC) to develop the eight (8) macroeconomic Futures (as outlined in the May 14th SSC Decision document)¹ and related sensitivities, with input from other stakeholders and the recommendations of relevant Work Groups, consistent with DOE-approved project schedules.
14. Develop criteria to determine the choice of the eight (8) macroeconomic Futures and three (3) transmission build-out Scenarios.
15. Work with EISPC to develop the three (3) transmission build-out Scenarios to be submitted for detailed transmission expansion and reliability analysis (as outlined in May 14th SSC Decision document), with input from other stakeholders and the recommendations of relevant Work Groups.
16. Within the bounds of the FOA and EIPC’s proposal, review the analyses and reports of the EIPC Analysis Team and provide consensus direction and input. The EIPC Analysis Team shall follow and incorporate such SSC strategic guidance on the macroeconomic and transmission analysis of the eight (8) macroeconomic Futures and three (3) transmission build-out Scenarios.
17. Request help and information from EIPC Analysis Team as needed to fully understand the tools and analyses.
18. Work with EIPC Analysis Team to establish communication protocols between the two groups.

SSC Membership and Governance:
Criteria for SSC Selection and Membership

The criteria for being selected for the SSC include the following:

- Have seniority, stature and credibility within one's organization and sector
- Have the demonstrated ability to represent the interests of multiple organizations within the sector
- Have broad support of organizations and constituency groups within the sector
- Will keep sector participants across the EI informed about the SSC activities and solicit input throughout the project
- Have demonstrated the ability to work collaboratively with others with whom one disagrees
- Have a strong understanding of resource and transmission planning in the electricity industry, including technology and policy considerations
- Have the time, commitment and resources to participate fully

Term Limit: Two non-rotating Members selected for the SSC will serve for at least one year. If a member cannot complete his/her term, the replacement will be selected by the sector or subsector caucus representatives in a manner consistent with the original selection process.

Rotating SSC member seat: The sector may, acting through its interconnection-wide caucus, initially and as needed thereafter, designate different people to serve as its other SSC member for each meeting, or may designate all SSC members for longer periods, at its option. Such appointments shall follow the SSC selection process set forth in the EIPC proposal.

SSC Sectors and Seats

- o (3) Transmission Owners and Developers
 - o (3) Generation Owners & Developers (minimum 1 renewable, minimum 1 non-renewable)
 - o (3) Other Suppliers (e.g. Power Marketers, Energy Storage, Distributed Generation, minimum 1 Demand-side Resources representative)

 - o (3) Transmission-dependent utilities (TDUs), Public Power, & Coops (e.g. Municipal utilities, Rural Co-ops, Power Authorities, minimum 1 public power or coop TDU)
 - o (3) End Users (e.g. Small consumer advocates, large consumers – minimum 1 state consumer advocate agency)
 - o (3) NGOs (e.g. climate change & energy, land and habitat conservation)
 - o (10) State Representatives
 - o (1) Canadian Provincial representative
 - o Ex Officio Members: U.S. DOE, U.S. EPA
- TOTAL:** 29 members

Regional Representatives: Each Caucus will have the opportunity to appoint 1 up to 7 additional representatives to attend meetings who may be seated with their sector SSC members for at least the first 6 months of the project.

Alternates: It is very important for the development of consensus that the designated members of the SSC participate consistently. Every effort will be made to provide adequate notice of SSC member meetings and events so that the SSC member can participate. The Sector or Subsector Caucus representatives as is appropriate may designate one alternate to represent the SSC member at specific meetings and events if he/she is unable to attend. The SSC member must notify the Chair and Vice-Chair in the event he/she wishes to send the alternate. However, absence from two or more in-person SSC meetings in a year will be cause for the member to be replaced by the Sector or Subsector Caucus.

Leadership: The SSC, at its second meeting, will select two individuals to serve as Chair and Vice-Chair. In the event that there are more than two candidates, the selection process will be as follows: A single voting round will be held, in which each SSC member shall vote for the two (2) candidates they prefer. The votes will be submitted privately, on-paper. The top vote-getter will be named as the SSC's first Chair, and

the second-highest vote getter will be named Vice-Chair. After six (6) months, the Chair and Vice-Chair will swap roles – with the Chair moving into the role of Vice-Chair, and the Vice-Chair being the new Chair – and serve in these roles for the subsequent six (6) months. Approximately ten (10) months after the initial Chair and Vice-Chair is selected, the SSC will determine how to select the Chair and the Vice Chair for the following year.

The Chair and Vice-Chair, in cooperation with the EIPC project manager and the Facilitator, will have the following duties: 1) serve as a point of contact for EIPC, while ensuring that the entire SSC is engaged in discussions relating to critical administrative matters and substantive issues; 2) serve as a point of contact for Work Groups (WGs) and help facilitate coordination and communication among the WGs; 3) serve as an internal monitor of the progress of the SSC and WGs, and help ensure tasks/goals/objectives are met on deadline; 4) encourage cooperation and support consensus-building in an open and transparent manner; 5) help develop meeting agendas and locations, with input from the SSC; and 6) assist with administrative matters, and help SSC stay on task during SSC meetings. The Chair and Vice Chair will determine how these duties will be shared, and will communicate this information to the SSC.

Any concern with the performance of the Chair or the Vice Chair by five or more SSC members will be addressed by the Stakeholder Steering Committee.

Decision Making

Consensus

The SSC members will make decisions based on consensus. Consensus will be defined as none of the 29 members objecting to a proposal moving forward. Unanimity and complete agreement are not required to achieve consensus – consensus means that all the parties can live with a particular decision and the ultimate outcomes of the SSC process. While adhering to the definition of consensus set forth in this section, the SSC may further define consensus in the context of a particular proposal to be decided by the SSC. In its deliberations, the SSC shall use appropriate tools for developing consensus, and shall seek to exhaust every reasonable and practicable effort to reach consensus within the time constraints of the EIPC schedule for deliverables to DOE. If SSC members or their designated alternatives are not present when a consensus decision is made, they may sign on or submit separate comments. Consensus decisions of the SSC are final. A reasonable amount of time as determined by the SSC will be provided throughout SSC meetings to allow SSC and sector caucus members to discuss proposals in order to inform SSC members in decision making.

Alternative to Consensus

After significant discussion and debate, if at least 19 of the members present at a meeting (either in person, electronically, via telephone, or through their alternates) decide that it is impossible to reach an agreement where no one objects to the proposal moving forward, then the SSC will strive to reach an agreement that is supported by at least 23 members. In the case of the states voting as a block with 10 votes, the SSC will have reached an agreement when a proposal is supported by at least 19 members. No one sector shall be able to unilaterally initiate this voting process or block agreement on a proposal.

Each sector (or subsector) will define for itself how its SSC members will take positions in the SSC consensus process. Additionally, each sector will have the opportunity to caucus in real-time to establish its position(s) on the issue at hand.

EISPC Role in Defining Modeling

EISPC is recognized by all SSC members as reserving the right to define four (4) of the eight (8) macroeconomic Futures and one of the final three (3) transmission build-out Scenarios in accordance with the following:

EISPC will work in good faith with the SSC, through the process it creates, to define eight macroeconomic Futures, four of which will be designed to meet EISPC's requirements, and define three transmission build-out Scenarios, one of which will be designed to meet EISPC's requirements. As the SSC process draws to conclusion, the EISPC may, at its sole discretion, modify the four state macroeconomic Futures, and the one state build-out Scenario, to better meet EISPC requirements, but shall provide advanced notice and

explanation of the required changes to the SSC at least two weeks in advance of meetings where final decisions are made on the eight macroeconomic analyses and three transmission build-outs. However, regardless of the timing of the process, EISPC is assured of at least four macroeconomic Futures, and one transmission build-out Scenario that meets EISPC requirements.

Meetings of the SSC

- All meetings of the SSC are open for attendance by interested stakeholders and will be accessible remotely by webinar (combined visual and audio), the link for which will be posted at least one week in advance of the meeting date.
- Draft agendas for all meetings and all materials and presentations related to proposed action/decision items, including materials submitted by Work Groups to the SSC, should be distributed to SSC members two weeks in advance. This requirement may be waived, under extraordinary circumstances, by the consensus of the SSC. All such materials must be distributed no later than one week in advance.
- In the interim between in-person SSC meetings, the SSC will hold regular (up to once per month) conference calls and/or webinars, in order to hear reports from the WGs, receive status and progress updates, and make any necessary process- or substance-related decisions.

Ground Rules

The SSC and Table Representatives agree to abide by the following ground rules:

- Meetings should be characterized by SSC members listening carefully to the concerns of others and working to address the concerns of all involved to the extent possible.
- SCC members should be prepared to work constructively with other members. Deliberations should focus on interests, thereby creating opportunity for joint, interest-based problem solving.
- Each meeting will include a time-limited open comment period, during which 1 non-SSC members may speak on the issues listed on the meeting's agenda. The non-SSC members sitting at Sector Tables will have the first opportunity to speak during the Open Discussion Period. After that, other non-SSC members will be able to speak during the open discussion period.
- SCC members should commit to participate in good faith and to expend the time necessary to meaningfully participate in and contribute to the process.

Table Arrangements and Meeting Participation

The SSC will initially utilize the following table arrangements and meeting rules:

- Each sector will have a round table at the SSC meeting that would accommodate 10 seats ("Sector Tables"). These Sector Tables will be arranged in a large circle. There will be additional seating elsewhere in the room for others to sit. Each sector shall determine who will sit at its Sector Table. For example, the TO sector has stated it will have ten regional representatives sitting at its table from the following regions: ISO-NE, NYISO, SPP, SIRPP, Florida, MAPP, PJM (2), MISO (2). Other sectors may choose to have only their SSC members sitting at the Sector Tables. Participation at the tables should reflect regional balance where regional differences, in the opinion of that sector's participants, may be relevant to the SSC's deliberations. Regional representatives at a table for a given sector may assign their seat to a region-wide organization with the voting role of such entities to be decided by the table representatives. Such assignment may be made on a meeting-by-meeting basis or on a continuing-until-further-notice basis.
- The SSC members for these sectors will be chosen by the respective 27-member interconnection-wide caucuses described above voting as a whole, except as otherwise provided herein.

The SSC shall, as part of its procedures, develop procedures to semiannually review the effectiveness of its meeting format after taking comments from all stakeholders. The above procedures shall remain in effect for at least six (6) months. If at that time a change is desired by one or more sectors of the SSC, those sectors are required to offer an alternative approach that ensures regional representation, openness, and the ability of non-SSC members to be heard. Any such proposal shall need the approval of members of the SSC. If such approval is not obtained, the above procedures shall continue in effect. At all times, the SSC shall work with the EIPC to ensure that meetings are run in a way that ensures openness, transparency, consensus building, and timely decision-making. Facilitation will be provided consistent with budget limitations to ensure such outcomes.

SSC MEMBER DISCUSSION: After this open comment period, the 29 members of the SSC will lead the discussion at the SSC meeting. All 29 members should have equal opportunity to speak at the meetings. A reasonable amount of time as determined by the SSC will be provided throughout SSC meetings to ensure non-SSC members have the opportunity to talk with their or other sector representatives to discuss proposals and to inform SSC members in decision-making.

AGENDAS:

- i.** Draft agendas for all meetings and all materials and presentations related to proposed action/decision items, including materials submitted by Work Groups to the SSC, should be distributed two weeks in advance. This requirement may be waived, under extraordinary circumstances, by the consensus of the SSC. All such materials must be distributed no later than one week in advance.

- ii.** While any non-member of a sector may suggest agenda items, the final agenda will be established by the SSC Chair(s) and in consultation with SSC members, the EIPC and the Facilitators. Any additional agenda items supported by five or more SSC members shall be added to the agenda.

Role for Sector Caucus and Regional Representatives

28 Caucus members and regional representatives, by virtue of their nomination, have credibility with their stakeholder sectors and represent a broader range of interests than the SSC members can. Therefore, the Caucus members will continue to play a significant role:

- Serve as a designated alternate to the SSC to participate when an elected SSC member cannot attend a meeting or steps down from the position.
 - Serve on the Stakeholder Working Groups as core members.
 - Work with the SSC to achieve consensus. To be effective the Sector Caucus and Regional representatives will need to actively track the issues before the SSC by attending the SSC meetings in-person or by webcast.
 - Seek input from the larger stakeholder community on key issues before the SSC (via formal webinars and informal outreach to fellow stakeholders)
 - Provide advice to the SSC representatives based on input from the larger stakeholder community.
- In addition:
- The EIPC will strive, within the funding limitations of the FOA, to provide technology resources to ensure prompt and thorough communication of views within sectors. SSC members should be required to consult with their caucus representatives regularly.
 - A Sector Caucus may establish additional procedures to govern the participation of its elected SSC representatives, e.g. rules of approval, so long as such procedures do not run afoul of the provisions of the FOA or otherwise unduly delay or frustrate timely action by the SSC.

Stakeholder Work Groups (WGs)

The SSC may create and populate one or more stakeholder Work Groups to facilitate the completion of SSC responsibilities. To achieve balanced representation on the WGs, SSC members, working with their Sector Caucus and Table Representatives, will appoint no more than three official members to each WG. These official WG members may be SSC members, Regional or Sector Caucus Representatives, or other qualified non-Caucus individuals, as determined by the SSC members from each sector. The SSC may also name additional participants (e.g. technical experts) to be involved in WGs, as appropriate. The WG may be charged to:

- Prepare recommendations for SSC's review, including draft work products. WG recommendations should be based on consensus of a balance of sector interests. If consensus is not achieved, the WG may submit alternative recommendations for SSC consideration.
- Perform delegated tasks on behalf of the SSC including process and substantive issues.

Each WG will appoint a leader to outline objectives, tasks and schedules for the WG. The Facilitator will help arrange WG meetings, conference calls and webinars, and will facilitate the discussions of WG as

needed. All WG meetings, conference calls and webinars will be open to interested stakeholders as observers.

Communication

The overall EIPC process is designed to allow for input from all stakeholders whether or not they are chosen to serve on the SSC, the Regional representatives or the Sector Caucus. To facilitate communication:

- All SSC meetings are open for attendance by any interested stakeholder. The SSC meetings will be structured to allow interaction between the attendees and the SSC members.
- Written comments may be submitted at any time. Provisions will be made to solicit and take into account written comments from all interested stakeholders on EIPC reports.
- SSC members, Sector Table representatives and Sector Caucus representatives need to reach out to the organizations within their sector to assure their views are represented in the deliberations. They must also establish communication plans to keep organizations and interested stakeholders informed of upcoming and final decisions of the SSC.
- All scheduled meetings, agendas, background materials, meeting decisions and action items, webinar recordings, draft and final reports of the SSC and Workgroups will be posted on the EIPC website in a timely manner. Draft agendas for all meetings and all materials and presentations related to proposed action/decision items, including materials submitted by Work Groups to the SSC, should be distributed two weeks in advance. This requirement may be waived, under extraordinary circumstances, by the consensus of the SSC. All such materials must be distributed no later than one week in advance. Formal communication of deliberations or decisions by the SSC will be represented publically as SSC positions only. Without prior approval, no SSC member will characterize the position of any other member in public statements or in discussions with the press, even if that party withdraws from the SSC.

Finalized by the SSC - 10/12/10