II. DESCRIPTION AND METHODOLOGY OF THE STUDY

A.   Conceptual Framework of the Study

1.   *Iterative Stages of Activities In a Contaminated Community*

Drawing upon earlier work at MIT (Ashford et al.,1991), we found it useful in this study to describe the evolution of activities at a particular contaminated site as a series of iterative stages: from discovery of contamination or health problems to more in-depth investigation and characterization of the site to cleanup and remediation of the contamination to ultimate re-development or revitalization of the site/area/community. It is argued that optimal community involvement may take different forms, and may utilize different vehicles or mechanisms, at the various stages. It is generally thought that earlier participation is "better." The stages thought appropriate for the cases investigated in this study are presented in Table 2-1.

TABLE 2-1: POSSIBLE STAGES IN THE CASE HISTORIES

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1. Initial recognition of problems at the site and early history
2. The decision to study/investigate the site
3*. The choice of investigators
4*. The design of the study/investigation (who, what, how)
- health endpoints of concern
- contamination/exposures of concern
5. The conduct of the study (sampling, measurements)
6. Evaluation/presentation of results
7. Communication of the results to the community
8. The decision to Act
- no further action
- further study (reiterating stages 3-7)
- remediation (see stage 10 which reiterates stages 3-7 in the context of remediation)
9^{+}. Choice of the remediation contractor
10^{+}. Identification, evaluation, and choice of options for remediating the contaminated site
- identification of options (similar to stage 2)
- evaluation of options in terms of residual contamination/health risk (reiterating stages 3-7)
- choice of option(s)
11°. Remediation of the site
12°. Concurrent and post-remediation monitoring of the site (reiterating stages 3-7)
13°. Concurrent and post-remediation monitoring of health indicators in the community (reiterating stages 3-7)

Legend:* At some sites, stages 3 and 4 were reversed.
$^{+}$ At some stages, stages 9 and 10 were reversed
^{o} Most cases had not completed stages 11, 12, or 13 at the end of our site interviews. Most sites involved interviews when the process was at stage 10.

2.   *Vehicles for Public Participation*

We investigated a variety of vehicles or mechanisms for public participation that fell into one or more of the categories of initiatives mentioned earlier. These include mechanisms used to:

     a. Focus attention on broad-based outreach to, communication with, and education of the community (i.e., more, or more predictable, and better communication)

     b. Build skills and capability in the community

     c. Provide for increased community participation in, and access to, government decisions

Obviously, a vehicle such as participation in a citizens' advisory committee (category c) can also build longer-lasting capacity for future participation (category b), as well as empower citizen participants in a current dispute. The usefulness of categorizing vehicles or mechanisms in this way is to invite focused thinking or critiques about policies for their enhancement, according the functional goal desired.

3. *Important Elements for Characterizing or Evaluating Public Participation Mechanisms*

An aim in this research was to identify the factors and criteria most important to and essential for successful public participation processes and outcomes. Based on our prior work (Ashford et al., 1991), we began this study with a set of criteria, which was expanded in the course of doing the site investigations. This expanded list guided our *initial* analysis *within the case studies themselves* (see IIB). The factors include:

- !   access to information
- !   financial and intellectual/technical resources
- !   openness
- !   trust [between citizens and government (overseeing the PRPs), or between citizens and contractors (where government is the polluter)
- !   trustworthiness [of individual actors acting in an honest, truthful manner faithful to their announced or perceived roles]
- !   respect
- !   accountability [of both government to stakeholders and individual participants to their constituencies]
- !   appropriate balance of power [sufficient autonomy of participants from government, and balance of power among participating interests]

Ultimately, however, consideration of additional factors enriched the *cross-case comparison*, which is the focus of this report.   Subsequent analysis relevant to the

lessons learned about specific vehicles, or combinations thereof, in the different communities revealed the importance of:

- ! communitarian vs. utilitarian outcomes
- ! fairness of outcome and process
- ! public involvement as a means to facilitate continuous change
- ! community awareness, education, and empowerment (mobilizing the entire community)
- ! stronger interpersonal relationships and social fabric
- ! legitimacy of views and interests (possible related to, but not identical with respect)
- ! encouragement of discourse to facilitate both shared understanding and shared values.

4.   Focus of Our Analysis: Important Definitions and Distinctions

In our view, the success of public participation processes needs to evaluated both in terms of the "democratic"nature of those processes and in terms of distributive justice concerns raised by, among others, John Rawls in his Theory of Justice (1971). Distributive justice focuses on ensuring that the least advantaged members of society (here the contaminated community) are made relatively better off as a result of government action.

For the purposes of this work, we distinguish the terms:

Community: the individuals, groups, or small business owners affected by the contamination, either directly or indirectly, as defined below.

Stakeholders: the full range of individuals and groups with health, welfare, economic, and other interests related to the contaminated site. These include those involved in regulating, overseeing, and remediating and revitalizing the site; developers; and those concerned with the environment and the welfare of future generations.

Public: a broader collection of individuals and groups, including those not necessarily directly or indirectly affected by the contamination.

The *community* is composed of some, but not all, distinguishable subsets of stakeholders. It is also a subset of the greater public. In this report, we often use the term *public participation* in a general way as an umbrella term encompassing both stakeholder processes and community involvement activities.

The *directly affected* community includes residents whose health is at risk and/or whose property or property values are adversely affected by the contamination. These are individuals who live in the contaminated areas, individuals whose properties abut the contaminated area and whose property values decrease as a result, and individuals who live outside the contaminated area, but who may be personally affected, e.g., through contamination of their water supplies. *Indirectly affected* members of the community include those citizens and community-based small business owners who may experience an economic/social burden by virtue of living or owning a business in a community whose image/reputation is tainted by the contamination. They also include individual citizens/taxpayers whose health is not at risk, but who may shoulder some of the economic burden associated with cleanup. All are affected more or less personally and thus are members of the community as we define the term. They also comprise part, but not all, of the larger public.

Stakeholders, on the other hand, encompass more than the affected community members as defined above. They include government and agency officials, PRPs, cleanup contractors, developers, investors, and the corporate business community. While corporate officials, persons with commercial/professional interests, politicians, and government officials may live in the community, their interests in the contamination are usually (but not always) related to their functional, organizational, or official capacity rather than their membership in the community *as individuals*. When we use the term "community," we mean individuals and groups whose "stakes" are *personal* (e.g., *their* heath and the health of their family, *their* places of residence, *their* [personal] economic losses; *their* businesses, etc).

The reasons for these distinctions will become clearer, but they are motivated by our concern that the least advantaged, most affected individuals are treated justly and fairly, especially if they have had a prior history of environmental injustice. A concern with justice and fairness requires that public participation and stakeholder involvement processes be evaluated in terms of the distributional effects on these special groups. When these groups are also environmental justice (EJ) communities, i.e., poor or minority communities that have borne a disproportionate share of environmental risk, we argue that justice requires special attention to their future burdens and benefits.

Some of the participatory mechanisms observed in the course of our research are structured stakeholder involvement processes. Others are unstructured public and community participation mechanisms. Some are deliberate attempts to involve and empower the community most directly affected. We have argued that the *combination* of how the government views its role and how the participants of stakeholder and community involvement processes view theirs is especially important. Where the government retains decision-making authority, it could act as a trustee for the affected community, ensuring in the Rawlsian sense, that the least advantaged are made relatively better off -- and the next most adversely situated are made next better off, etc. -- as a result of the decisions government makes. Alternatively, government could vest

decision-making authority in the participatory process, but provide procedural guarantees of sufficiently heavy influence of the least advantaged and most adversely affected members of the community.

Theoretically, stakeholder involvement processes can operate at any point along a continuum, that at one end is driven by the sum of the self-interests of the participants resulting in utilitarian/majoritarian outcomes, and at the other end seeks to promote fairness for the least advantaged and operates to achieve the greater public good.

Even in the absence of government commitment to Rawlsian-type outcomes, it has been argued that the participants themselves could evolve from utilizing a process which is utilitarian and in the nature of a consensus -- based on a compromise of demands/needs -- to a process which reaches a "normative consensus" (English, et al., 1993; Fiorino, 1989 and 1990) where the participants themselves promote decisions for "the common good", based on their commitment to "civic virtue" (Sandel, 1996). Normative consensus has been described as an example of "communitarian" participation (English et al., 1993). It could be viewed as a kind of embodiment of the participants' concern for distributive justice and a *tilt* towards Rawlsian outcomes, but without any clear rights-based formalism (Rawls, 1971) or intentional procedure imposed on the decision-making process in the stakeholder involvement process. Normative consensus, in which the participants take "moral action" and act on "higher" motives than their own self-interest, is the hallmark of a civic society, characterized by self-governance (Sandel, 1996).

The extent to which stakeholder [or even community involvement] processes can naturally or easily be encouraged to evolve into reaching normative consensus, or whether, in contrast, strong government influence is required, is certainly situation- and context-specific. While we would not argue against the importance of stakeholder involvement to the resolution of environmental problems and disputes, we argue that it may not be an adequate substitute for other forms of public and community participation, or for a strong government role in protecting the rights and interests of the most adversely affected members of the community. We are concerned that exclusive reliance on stakeholder involvement processes or on non-inclusive community involvement mechanisms may dilute the influence and voice of the most adversely affected members of the community. In our view, achieving a normative consensus is often too difficult and imprecise a process to be an adequate substitute for a rights-based approach embodied in, and enforceable under, law by government acting as a trustee for those rights (see Sandel, 1996).

For these reasons, the mechanisms for community and stakeholder involvement uncovered in our research are analyzed according to the different modes of operation of the stakeholder participants (either achieving compromise or a normative consensus) *and* government (acting either as a facilitator of dispute resolution or a trustee for the disadvantaged).

B.   Case History Investigation

1.   Criteria for Selection of the Cases

The study was designed to investigate seven ongoing, relatively successful examples of community participation in a broad spectrum of communities, with different geographical, racial, ethnic, socioeconomic, and degree-of-urbanization characteristics. The sites included were either (1) listed on the National Priorities List (NPL) under Superfund, (2) listed as both NPL and RCRA sites, or (3) not listed, but involved in state-administered voluntary clean-up efforts. Communities selected for the study had either a history of environmental contamination or of adverse health effects (whose origins were thought to be associated with environmental exposure to toxic chemicals) -- or both. Candidate cases were restricted to those which (1) involved at least two of the three sponsoring agencies (EPA, DOE, and ATSDR) and (2) were regarded as relative successes by both the federal agencies (at the regional office level) and by some members of the involved community groups. The "site worksheet" used to investigate candidate cases is found at Appendix A.

In the first phase of the project, three sites at three locations were investigated. In order of investigation, they were Rocky Flats, St. Louis (the FUSRAP site), and Bartlesville, OK. During the second phase, four sites at three locations were investigated. These were Albuquerque (both the South Valley and Sandia sites), Chattanooga Creek, TN, and Saltville, VA. While attempts were made to include as large a range of different sites as possible, communities of predominantly Native American or Asian makeup were absent. This was the result of the application of screening criteria *other than* racial or ethnic character. Of course, the small number of communities investigated in this study precludes drawing any definitive conclusions about the importance of many of the different characteristics of the various communities represented in our sample. What were trying to avoid was a distinctly white, middle-class bias in our investigation, which we believe was achieved.

2.   Activities Undertaken and Interviews Conducted at the Sites

Considerable field work was done during the first two phases of the project. The purpose of the field work was to develop an in-depth understanding of the purposes, goals, and activities of the existing public participation and interagency coordination activities at each site and to examine the roles of trust, trustworthiness, openness, information, resources, and respect from the perspectives of different players involved. Using an unstructured interview format (see Appendix B), we interviewed as many as 30 people at each site. Using a "snowball" method, we first identified and spoke to key

informants prior to visiting the site and once there, expanded our list of interviewees on their recommendations and also upon learning of others whose views were likely to be important. Persons interviewed were promised confidentiality, but a list of the organizational affiliations/types of persons interviewed at each site accompanies the brief case history descriptions found in Part Two of this report.

We also attended meetings and other public involvement activities at some sites. Our presence at each site spanned a continuous period of 3-7 days. We collected substantial background materials on the different community involvement mechanisms at the sites, including contemporaneous accounts in the local press.

## 3.	The Case Histories

Each of the case histories (found in their entirety in a separate volume) consists of: (1) a brief "Site Summary," (2) a set of diagrams and visuals depicting the time line of important events, community involvement mechanisms, actors involved, and other information, (3) a "Site Profile" consisting of two parts: a narrative describing the evolution of events at the site and a section analyzing the most important community involvement mechanisms, and (4) a bibliography. The reader is cautioned that detailed analysis leading to policy conclusions will not be found in the case histories, *per se*. Rather, a comparative analysis and discussion of lessons learned about successful community participation in contaminated communities is found in the main body of this report, especially in Part Three. Brief descriptions of the case histories and case-specific lessons learned are found in Part Two.

## 4.	Feedback on the Initial Drafts of the Case Histories From Government and Community Members

Initial drafts of each case history were circulated to many of the individuals who graciously had shared their knowledge, experience, and perceptions with our research team during the site investigations. These include members of the community, as well as local and regional governmental officials. Their feedback was incorporated into the final versions of the full case histories that appear in separate volume.

C.   Analytic Methodology Used in the Case Histories

As discussed in Section III below, there is a substantial literature on what constitutes successful community involvement and stakeholder involvement. There are different ways to formulate success from the community's perspective.

1.   *Satisfaction of the Community with the Outcomes*

Of most immediate concern to the community is the outcome of government intervention to address its perceived needs: (1) assurance that no adverse health consequences will result from past or continued exposures -- or alternatively that their health will be monitored and appropriate care rendered, (2) cleanup or remediation of the site to the extent necessary for good health, as well as for aesthetic reasons, and (3) development of opportunities for employment, economic advancement, and enhancement of the economic and social status of the community. Much to the frustration of the scientific and engineering "experts" who render opinions on the extent of existing or future risk (before and after remediation), the communities often do not accept the proffered expert opinions for a variety of reasons. Community members frequently experience the contamination as an "assault." Their communities have been contaminated without their permission and/or knowledge and often without any discernable benefit accruing to those who live there. These factors influence the extent to which the community views the risks as "acceptable." Acceptability of risk is indeed socially constructed [Krimsky and Plough, 1988; Fischhoff, 1985]. The public may be more willing to accept the risk when some of its other needs are met, e.g., those related to economic development, job creation, and beautification.

2.   *Satisfaction of the Community with the Process and Conflict Resolution*

In an effort to get the community to articulate its needs or to persuade the community that it will be heard and/or have a major voice in deciding the outcomes, a great deal of attention is paid to ensuring the fairness of participatory processes. However, not all of the approaches that put such processes into place are motivated by the same purpose. Some are designed to facilitate community access and input, some to facilitate mutual understanding. Some engage the community in shared decision making, and some go so far as to allow the community a veto (by requiring unanimity in reaching consensus or by requiring community concurrence). Ironically, processes that go out of their way to encourage community input and dialogue -- but where, in the end, governmental officials retain the final authority to make decisions -- can raise the expectation that the community will eventually get what it wants, even if it is put on notice that this will not necessarily occur. When this happens, the community may express dissatisfaction with the process as well as the outcome.

In terms of both process and outcome, achieving satisfaction of the community may be quite different than providing satisfaction for the larger group of stakeholders. Although advocates of alternative dispute resolution (ADR) often may be implicitly motivated by a desire to have public participation achieve utilitarian outcomes, the adversely affected community will generally not be satisfied with this kind of process (and outcome). They may be as dissatisfied by stakeholder processes that reach a compromise by "horse trading", as they are with a decision that is dictated primarily by scientific and engineering judgements.

Chess (1999) has found that many analysts/researchers consider both process and outcome to be important when assessing the success of public participation processes.

3.   *Our Criteria for Evaluating Public Participation Mechanisms*

We began our study with the benefit of prior research and, in the course of our field studies, we expanded the list of elements we considered important and/or essential to successful public participation. In each of the full case studies, we initially evaluated strengths and limitations of specific participatory mechanisms in terms of such elements as: access to information, financial and intellectual resources, openness, trust and trustworthiness, accountability, respect, and acceptable balance of power (sufficient autonomy). *Within* each case history, these factors could help explain some of the differences observed across specific mechanisms. Some mechanisms provided more access to information, were more open, engendered more trust, and facilitated more accountability than others. Although some participatory mechanisms were more "successful" than others in any one community, it was the collective and cumulative effects of the different mechanisms that contributed to the overall success of the participatory processes in our study communities. When taken together, the public participation activities in any one community contained all of the important elements. In contrast, we previously had found these elements lacking or notably absent in our past work on acknowledged historical failures, such as in Love Canal (Ashford et al., 1991).

In preparing this final report, we had the benefit of the scholarship of others working in the field, as well as the completed case histories. This allowed us to construct a more composite set of criteria for evaluating the success of the public participation activities in the study communities in terms of both process and outcome.[1] These criteria include procedural fairness, procedural competence, and the variety of outcome variables noted below. There is some overlap in the criteria. For example, although "adequate time" is listed under procedural competence, it has an element of fairness in that some

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[1] We were especially informed by the collected work of colleagues in Renn, et al., eds., 1995.

participants may have more time than others to participate. We evaluated the success of each public participation mechanism on a three point scale (+,+/- and -), indicating positive, mixed, and negative results. These criteria, applied to each case in Part Two, include:

Procedural Fairness. This criterion is composed of the following elements:

Ρ Accessible to all members of the community

Ρ Diversity of community views represented

Ρ Respect for different viewpoints and different forms of expression/expertise

Ρ Participants can participate in agenda setting; deciding how to run the mechanism; discussion and debate; development of decision making rules.

Ρ Attention to balance of power

Ρ Agencies are committed to reciprocity (community gives input; agencies respond;). responsiveness; follow-up

Ρ Open and transparent process

Ρ Independence and autonomy of mechanism

Procedural Competence. This criterion is composed of the following elements

Ρ Purpose of participation mechanism explicit and understood/agreed to by participants

Ρ Access to knowledge, e.g., information, expertise

Ρ Adequate time to learn about and discuss issues; reflect on variety of viewpoints

Ρ Resources available for participants to obtain the information/expertise they need

Ρ Participants willing and capable of participating

Outcome:

Ρ How well did the mechanism achieve its initial aim?

II-10

P Did it foster development of mutual understanding among participants and between participants and agency? (competent discourse; face to face discussion over time)

P Did it enhance equity and control for those affected?

P To what extent did it safeguard the disadvantaged and protect and promote minority interests? Address power imbalances? (Here we will have to look at how community members viewed the process and outcome of the PP mechanism)

P Was there shared decision making?

The case histories are presented in an abbreviated form in Part Two. These criteria are used to guide the discussion, and are applied directly in a table found at the end of each case.

In addition, we were impressed that the following considerations were also useful:

P   establishing mechanisms for continued community empowerment and civic involvement,

P   government's role as trustee vs. arbitrator/mediator,

P   environmental justice/protection of minority interests, and

P   communitarian rather than utilitarian outcomes within the community.