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COMPILATION OF REPORTS PREPARED FOR THE
SECRETARY OF ENERGY ADVISORY BOARD
TASK FORCE ON RADIOACTIVE
WASTE MANAGEMENT

TASK FORCE ON RADIOACTIVE WASTE MANAGEMENT
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POLITICAL TRUST AND RISKY POLICY

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The recent collapse of communism dramatically illustrates the importance of trust for the effectiveness and stability of political regimes. Where trust is absent, authorities have nothing to fall back on save bribery or coercion in seeking to overcome opposition to their commands. From a systemic perspective, therefore, the public's faith in the trustworthiness or legitimacy of government is an important resource to the extent that this belief encourages voluntary compliance with decisions with which one disagrees or which call for personal sacrifice.

The conviction that trust is crucial for the government's ability to act seems increasingly widespread among students of policies concerned with the siting of potentially dangerous facilities such as nuclear power plants, LNG terminals or hazardous waste repositories. A proliferation of recent studies (K. D. Pijawka and A. H. Mushkatel 1991; Barke, Espey and Jenkins-Smith 1991; Stoffle et al. 1990; Slovic, Layman and Flynn 1991; Dake and Wildavsky 1990, among many others), claim that trust in the institutions involved in the siting, development and regulation of these facilities is a critical influence on the public's willingness to accept the government's decisions. Political trust or confidence, it is argued on the basis of survey and other data, lead people to discount or accept risk.

The critical evidence for this conclusion derives from surveys in Michigan, Nevada, Tennessee and elsewhere showing that even after controlling for factors such as the perceived personal or community costs and benefits of a facility, proximity to the facility, attitudes toward science and technology, knowledge of the technology and political ideology, trust, however measured, has an independent statistical effect on the willingness to accept a hazardous facility (Stoffle et al. 1990; Kunreuther, Easterling, Desvousges and Slovic, 1990). Since the current process for making siting decisions involves public participation and includes opportunities for debating, reviewing, delaying or even defeating official choices, the ability of citizens to translate mistrusting attitudes into individual or organized protests has obvious implications for effective policy-making.

The purpose of this report is to review the findings of social science research about the political trust that bear on the problem of legitimating public policy regarding nuclear power and hazardous waste disposal. In this regard, one can distinguish *general* preferences for policies dealing with energy resources, conservation, pollution and the like and *specific* siting decisions that directly affect a more restricted

segment of the public and often elicit the notorious “not in my backyard” response among people with divergent policy positions. Political trust may have different relationships to the two classes of citizen response. For example, Sears, Tyler, Citrin and Kinder (1978) found that mistrust of government made it more likely that one would reject official explanations for the energy crisis of 1973 and verbally oppose the national administration’s energy policy without altering the likelihood of behavioral change toward increased energy conservation.

This report covers the following issues: 1. The meanings of political trust, the sources of trust and recent trends in the public’s outlook; 2. Public opinion on nuclear power and nuclear waste; 3. How processes of decision-making affect public trust; 4. Directions for possible future research on public opinion.

THE OBJECTS OF POLITICAL TRUST

To clarify the ways in which “trust in institutions” shape attitudes toward risky policies, one must determine the relevant object or focus of trusting attitudes, whether trust is a cause or a consequence of perceived risk, and the extent to which trust as opposed to other factors such as political ideology, cultural attitudes and self-interest shape public opinion. How to increase the public’s trust in institutions and whether the effort to do so is worthwhile depends in part on the answers to these questions.

Political trust is a psychological construct referring to feelings of faith or confidence. Trust, however, always has an object or focus. One does not simply trust; one trusts someone or something. A useful definition of political trust, therefore, must indicate the particular individual, set of individuals, institutions or rules that elicit faith and confidence. Indeed debate about the significance of expressions of political trust often centers on disagreement about the object of people’s opinions when they say they trust “government,” “the government in general,” “the executive branch,” “the political system” and so on (Miller 1974; Citrin 1974; Citrin and Green 1986). What do people have in mind evaluate the government—is it the full set of elected officials, just the President and his administration or the regime in the broad sense of the structure of institutions and their governing principles?

For example, it now seems clear (Citrin and Green 1986) that when people are asked whether they trust “the government in Washington” the modal response is

to think of the President and his administration rather than the political system as a whole. Even so, an identical response to a verbal representation of political symbols may have several subjective meanings of quite different political significance. Expressions of mistrust of "the government" may be a *ritualistic* complaint about "dirty" politics and self-serving officials, sentiments that are familiar cliches in the vocabulary of American politics but that are neither deeply felt nor behaviorally potent. Alternatively, mistrust may signify a purely *partisan* reaction to those in power, an attitude that varies with the election returns, a *performance* evaluation based on personal or national conditions in the here or now, or, finally, genuine *alienation* from the political system's basic institutional arrangements, processes and underlying values. These distinctions should be kept in mind in assessing aggregate levels of trust in institutions in the nuclear power policy domain.

In the complex American political system in which power is widely dispersed, attitudes of trust or mistrust may be highly differentiated. Surveys therefore ask people separately about their confidence in different branches of government, about federal, state and local government and, in the present context, about specific agencies such as the Department of Energy, Nuclear Regulatory Commission and Environmental Protection Agency. Several methodological caveats about the results of such investigations are in order. First, among the general public, the level of knowledge about many specific institutions, including DOE, is bound to be extremely low. The reliability and validity of expressions of trust or the lack thereof, therefore, is uncertain. In other words, how does one interpret the answer to "how much trust do you have in the Department of Energy to manage a nuclear waste facility safely?" when it is asked in the context of a study that has focussed on the perceived risks associated with such a facility. Does the respondent have any knowledge or opinion of DOE independent of the agency's perceived position on the siting decision at hand? And if not, does the opinion elicited by the survey question constitute anything other than a response to the policy itself? If not, an element of spuriousness creeps into the finding that trust in the DOE, NRC or EPA predicts the acceptance of nuclear power or a waste facility.

The same point applies to the finding reported by Pijawka and Mushkatel (1991) that trust in the federal government (President, Congress) boosts support for the siting of the high-level nuclear waste repository in Nevada, whereas trust in the

state's governor and legislature increases opposition. Given the facts that the federal branch has proposed this siting decision and state officials have resisted it, the possibility again arises that trust is the effect rather than the source of policy preferences. A cross-sectional survey has difficulty in resolving this causal puzzle, but the issue has substantive significance since *prior* trust is generally regarded as a resource for political authorities.

Another methodological problem in assessing public responses in an opinion survey to a list of specific institutions is that a "halo" effect appears so that reactions to one object on the list are simply carried over to the next on the list. This measurement error is magnified where there is little knowledge about or experience with a particular institution.

On the other hand, when reactions to institutions are heavily infused with partisan or ideological sentiment, trust in one institution may go along with antagonism to the other simply because the leaders of these institutions are political opponents. In the Watergate era, for example, people who expressed confidence in the Presidency tended to denigrate Congress and vice versa. As the previous reference to public opinion in Nevada illustrates, evaluations of federal and state or local government also can conflict in this way. More generally, surveys indicate that subjective responses to the different levels of government frequently consider them as foils for one another. When the federal government is perceived as responsible for failures in important national policy, the annual surveys of the Advisory Commission on Intergovernmental Relations suggest, public confidence in state and local government seems to rise almost reflexively.

THE MEANINGS OF TRUST

To trust is to believe in the competence and integrity of the object of one's faith, integrity in the sense of commitment to fiduciary responsibility. To be trustworthy, therefore, is to be reliable, reliable in doing what is "right," right in the sense of both technical competence and meeting normative expectations. While the specific attributes that inspire trust will vary with context and task, meeting normative expectations in a democracy means that procedures as well as outcomes are important.

What underlies perceptions of institutional competence and integrity is an

empirical matter and the answer doubtless varies across institutions. In the domain of nuclear policy, attention has focussed on the expertise, credibility, compassion, fairness and accountability of decision-makers. And although the evidence is far from complete, some results (Stoffle et al. 1990; Rothman and Lichter 1987; Barke, Espey and Jenkins-Smith 1991) suggest that the public associates these qualities with particular institutions in a differentiated, if predictable, way.

For example, Stoffle et al.'s Michigan survey concerning the siting and operation of a low-level radioactive waste storage facility found that on the question of "technical competence to operate the facility," federal government agencies received the widest endorsement, with 43% of the sample judging them "very competent." State government agencies were next (34% very competent responses), followed by private management firms (27%) and local government (10%). However, the pattern was reversed when respondents were asked who would be most attentive to local residents' interests. Finally, university-based organizations and environmental interest groups received the highest ratings for competence in conducting "environmental monitoring."

The Michigan survey also showed that national environmental organizations and university-based organizations had the greatest credibility as a source of information about the waste storage facility. Interestingly, despite being regarded as competent to manage the facility, federal agencies were not highly trusted as a source of information. Only media organizations and the Waste Producers' Association had lower credibility ratings. Rothman and Lichter also found that the public was more likely to believe university experts than government scientists about nuclear safety, presumably because the former group was more "neutral." A statewide Tennessee sample, surveyed in 1986 in the context of the Oak Ridge MRS siting process, indicated higher levels of confidence in the ability of the EPA and DOE as compared to Congress or local officials to manage low level nuclear waste, high level nuclear waste or toxic chemical waste. Once more, however, this judgment appears to refer to technical competence, since the same sample indicated that they were more reassured if the facility's safety were monitored by a local committee rather than federal officials and that they would prefer the decision regarding the location of a waste treatment facility to be made by "scientific experts" rather than government officials at any level. Other surveys also have found that the EPA is perceived as more con-

cerned about hazards posed by nuclear waste repositories than either the DOE or NRC.

The cumulative import of these scattered findings, therefore, is that the DOE and NRC are viewed by many as having a prior commitment to a pro-nuclear course of action and that being perceived as *parti pris* erodes their credibility as fair or neutral assessors of the risks to public safety. To the extent that trust in government agencies is task-specific, it may be wise to design a process in which planning, management and monitoring are assigned to different combinations of authorities and institutions.

Although the qualities of competence, integrity, compassion and other bases for judging political leaders or institutions are *conceptually* different, most research finds that positive and negative judgements tend to form distinct and cohesive clusters. Particularly among those with relatively little interest in or knowledge about politics, institutions and authorities are evaluated on a single favorable-unfavorable continuum. For example, leaders tend to be regarded as either smart *and* honest or inept *and* corrupt.

Differentiated images are much more likely to appear when leaders or institutions are evaluated comparatively as in the Stoffle et al. survey summarized above. We reiterate that most information about the structure of public attitudes toward government derives from research about the national government and particularly the Presidency. Research about specific agencies is sparse. One must be cautious in concluding that there are stable structures of opinion about the DOE or other agencies involved in nuclear policy.

TRENDS IN POLITICAL TRUST

It is well-known that trust in national government declined from 1964-80, rebounded between 1980 and 1984 during the so-called Reagan resurgence and has subsequently slid downward again, although there are no post-Gulf War data yet available. Table 1 in the attached Appendix tracks this trend using the well-known "trust in government" questions developed by the University of Michigan's Center for Political Studies. These questions focus on the trustworthiness, responsiveness and competence of the "government in Washington" and the shifts in these measures over time largely reflect national assessments of the performance of the country and

its government in broad domains of policy, primarily with respect to peace, prosperity and domestic tranquillity.

Alternative measures of public confidence conform to this trend. Table 2 in the Appendix tracks expressions of confidence in the "leaders" or "people running" various government and social institutions. There is a general decline, with government faring worse than social institutions and with movements in the curve that reflect the impact of short-run events. To cite the Watergate era once more, the upward tick in confidence in the press and television can be viewed as a positive reaction to the role of the media in unveiling official malfeasance. Once more, public reactions of institutional adversaries tend to move in opposing directions.

A loss of confidence in government authorities, however, did not extend to beliefs about the political regime or community. Pride in the American system of government, expressions of patriotism and loyalty and a lack of interest in fundamental institutional change prevailed throughout the contemporary era. Nevertheless, the decline in public trust in the leadership of major political and social institutions has had significant consequences for the business of doing government. For individual citizens, trust, if rationally based on experience, functions to reduce social complexity. Trust makes it possible to take much for granted, to mitigate the need for second or third opinions. Mutual trust enables people to go about their daily business without having to take into account all possible contingent futures. The absence of trust motivates the construction of elaborate safeguards. In the case of the medical profession, for example, the loss of trust is associated with increased litigation, malpractice insurance, the reluctance of doctors to undertake certain procedures and their overuse of others.

Without commenting on the rationality of mistrust in the political realm, it is clear that the proliferating requirements for public hearings and reviews, environmental impact reports, disclosure of conflict of interest and other auditing procedures should be seen a partial response to the public's lack of faith that authorities can be relied on to perform their fiduciary responsibilities.

There is a paucity of evidence concerning the comparative trends in evaluations of different levels of government. The most systematic trend analysis derives from annual surveys conducted by the Advisory Committee on Intergovernmental Relations which tend to focus on the efficiency of government and on public attitudes

toward taxation. In this regard, there has been a slight shift away from believing in the ability of the federal as opposed to the state or local governments to "give you the most for your money?" In 1972, 39% felt this way about the federal government, a figure that slipped to 24% in 1984, but then rose to 33% by 1989.

Evaluations of the job performance of state or local government, however, are only weakly related to the measures of generalized trust in the national government summarized in Table 1. Some additional evidence that judgments about different levels of government need not go together comes from an ACIR survey indicating that the federal government is viewed as best able to manage large-scale, expensive and technically complex tasks, whereas state or local government are perceived as better-equipped to deal with problems of daily community life and as more responsive to local concerns.

Returning briefly to the trends in trust in national government summarized in Tables 1 and 2, it should be noted that opinion change tended to occur in an across-the-board manner. While there were differences in the timing and rate of change in the aggregate outlook of particular social and political groups, virtually all moved in the same direction. Consistent with the interpretation that changes in political trust, we shall see, opinion on nuclear policy is heavily event-driven, what Table 1 and 2 summarize, therefore, are "period effects..

Table 3 provides some empirical evidence of this by comparing the trends in trust in government among groups with different levels of formal education and different degrees of political participation. There are differences between these groups, but these tend to be small and the aggregate change in group opinion is virtually always unidirectional. Although the data are not included in Table 3, we can report that there is no consistent statistical relationship between political knowledge and trust in government. The more informed and politically active are as trusting or cynical of government as their less involved counterparts.

SOURCES OF TRUST

Trust is *earned*. Even institutions or leaders with an inherited reservoir of public confidence and goodwill can dissipate them through behavior that violates public expectations. Failure, actual or perceived, erodes trust. The decline in trust in government between 1964-80 clearly is a function of a national crisis in race rela-

tions. participation in an unpopular war, recession in 1974-76 and inflation in 1979, a series of energy shocks, and the breach of public faith by Richard Nixon and his associates in the Watergate affair. Battered by these events, it is difficult to quarrel with those who did not perceive their government as likely to do what is right more than "some of the time." To some degree, therefore, the loss of trust is a response to perceived performance or directly experienced outcomes.

In this regard, how people learn about events and governmental performance is significant. In the domain of economic policy, personal experience can be a criterion for judgment. Inflation unemployment and energy shortages are directly experience in daily life or conversation. An enduring military conflict may be similar in this regard. Other events and governmental actions are too remote to be learned firsthand and are experienced only vicariously through the mass media. The content of media coverage thus becomes critical in shaping public judgments about the trustworthiness of government when the dominant events are remote from civic life. Miller, Goldenberg and Erbring (1979) found that exposure to news coverage of the Watergate affair did influence beliefs about the trustworthiness of government, but that media coverage of the economic problems of 1973-74 had no such independent impact on public opinion.

The role of the media is bound to be important in policies regarding nuclear power and hazardous waste. Although dependence on the media for information about such issues is not complete, personal experience clearly is less available for judging the trustworthiness of government to manage policy in this domain. Moreover, where siting decisions are involved, the public is being asked to accept a risky future on the say-so of government authorities whose record they can only judge secondhand. This explains the significance of "signal events" (Stoffle et al 1990). Where accurate information, relevant experience and the ability of ordinary citizens to anticipate future problems all are scarce, risk perceptions are likely to be based on information about accessible or available events that seem similar or representative. Agency failures at one project enhance perceptions of risk at another, however objectively different the technology being employed or the agency and decision-making processes involved.

Vivid media descriptions of toxic spills, fires at chemical plants, nuclear leaks abroad, not to mention such major disasters as TMI and Chernobyl are likely to have

powerful influences on public opinion toward nuclear power and, indirectly, on the trustworthiness of risk management agencies. However isolated in the statistical sense, such seeming failures in the record of risk managers have a more potent impact on public feelings than long incident-free periods. Moreover, like religious faith, lost political trust is not easily regained once lost.

Jacob (1990) makes the point that the media and environmental groups are not the only source of negative comments about the nation's nuclear waste disposal program. Between 1981 and the present the OTA, GAO and National Research Council all reported on the national disposal policy. All were critical of DOE for errors in scientific projections and for its secretive internal processes. Jacob explicitly ties the loss of public confidence to the diffusion of information about the DOE's mistaken estimates about the difficulty of handling and disposing of nuclear waste, its reluctance to reveal accidents and its failure to guarantee economic and social well-being. Among the attentive public, therefore, part of the assault on the perceived competence and fiduciary responsibility—that is, trustworthiness—of the DOE has been the government itself. The underlying point, however, is that the public's loss of trust in the nuclear disposal program should not be regarded as an irrational response of the unenlightened. When the balance of news is bad and the credibility of safety managers questioned by legitimate critics, public skepticism is predictable and in many ways justifiable.

THE IMPORTANCE OF PROCEDURES

If outputs are one generic source of trust in government, procedural justice is another. Tyler (1990) shows that the individual's compliance with the law is related not only to whether particular legal outcomes produce net personal benefits, but to whether the procedures for making a decision are considered fair. Belief in the fairness of an institution's procedures, Tyler shows, not only facilitates acceptance of painful or costly decisions, but helps sustain faith in the trustworthiness of institutions and their leaders. These results are based on studies of compliance with police and judicial decisions, but they have obvious resonance in the current context.

The conflict over siting a nuclear waste depository in Nevada reveals the significance of procedural equity in gaining public acceptance of official decisions. In the first postwar phase of nuclear policy, public involvement in decisions was

minimal. Over time, however, court decisions and environmental protection policies have required public comment and impact statements. These procedures provided opponents of siting decisions with a forum to air doubts about the credibility of proposed solutions. The process of decision-making also may be contested on the grounds of equity or fairness. It is a commonplace that Nevadans regard the National Waste Policy Act of 1982 as amended for being biased against the state for ending consideration of alternative sites for the repository.

Tyler and others suggest that openness and fairness endow an institution's procedures with legitimacy in the public mind. Citizens seek access or the chance to be heard; they seek to be treated with respect or consideration; they seek to participate in making decisions that affect them wherever possible; and they seek equality of treatment. Thus, risk should be shared or allocated on some criterion that does not single one group out for special treatment, negative or positive. In the Nevada case quite obviously, those citizens affected most directly by the siting decision believe the decision-making process failed to meet these criteria for legitimacy.

PUBLIC OPINION ON NUCLEAR POWER

Freudenberg and Rosa (1991) and Gamson and Modigliani (1989) provide excellent recent summaries of trends in public opinion about nuclear power. Figure 1 tracks trends in public opinion and indicates a large secular decline beginning in the mid-1970s. There were sharp drops in support following TMI, the release of the Kemeny Commission report six months later and Chernobyl in reaction to the intense media spotlight highlighting the dangers of nuclear power, with an incomplete rebound once the glare of media coverage faded.

General opposition to nuclear power has grown over the past two decades and particularly among the younger age groups (Gamson and Modigliani 1989). Antagonism to building a nuclear power plant near one's own community has grown even more substantially. In 1971, only 23% were opposed to such construction; by 1979, before TMI, the figure was already 45% and a 1986 Gallup poll in the aftermath of Chernobyl found that 70% opposed a local nuclear power plant. The greater opposition to a local nuclear power plant than to nuclear power in general is an index of the "not in my own backyard syndrome." The NIMBY phenomenon consistently appears in surveys of risk perception. Proximity to the proposed site of a waste repository

consistently enhances opposition and belief in the dangers of such facilities.

Gamson and Modigliani emphasize the power of media discourse in shaping the change in public opinion. They argue that the media treatment of nuclear power issues shifted from presentations that emphasized pronuclear progress themes to imagery and discussion that framed nuclear power in ambivalent terms as a "devil's bargain" or "runaway" force that ultimately cannot be completely controlled or negatively as a corporate benefit immunized from public accountability. The growing opposition and ambivalence revealed in survey data thus follows in the wake of the flow of packaged information provided by the media. For present purposes, it is worth noting that one element in the changed flow of news about nuclear power beginning in the late 1970s is the emergence of an enduring concern with the public accountability or trustworthiness of the industry and its supporters in government.

Gamson and Modigliani's insightful analysis of the interplay between media discourse and public opinion suggests that current opinion toward the development of nuclear power will not be reversed without linking this issue to progress and economic necessity in the popular mind. The problem of waste disposal then becomes a necessary part of the "devil's bargain." Taylor (1990) cites some polling data showing that despite their opposition to nuclear power, many among the public are resigned that the future will bring a growing reliance on this energy source. In this regard, nuclear arms agreements and the destruction of nuclear weapons stockpiles are a novel stimulus that may move public images of the future in unknown directions.

However that may be, journalistic norms and the sympathy between media elites and environmentalists (Wildavsky 1991) suggest that there will be ample fuel for public fears about the hazards of nuclear power and waste disposal. Slovic, Layman and Flynn (1991) and Erikson (1990) underscore how pervasive and deep-seated are public fears about nuclear waste and other toxic materials. In the study of Slovic and his colleagues, negative imagery accompanied by strong emotions dominated public reactions to the proposed underground nuclear waste repository in Nevada. Erikson regards the sense of dread and vulnerability elicited by toxic materials as an intense psychological threat which scientific argument is unlikely to assuage. The defining characteristics of the nuclear and toxic perils is their invasiveness and the invisible, seemingly unbounded long-run threat they pose. Once

more, new information about the damage caused by radiation as far back as the 1950s in the United States or Russia functions as a signal that diminishes public trust in government management of current projects.

This deep-seated sense of dread tends to be ignored by conventional risk assessment calculations. Yet these sentiments not only are bound to powerfully affect public opinion on proposed facilities but are difficult change through confident pronouncements about the low statistical level of risk and the wonders of advanced technology. However difficult it is to combat such fears, agency leaders are well-advised to take them seriously. Being treated with contempt or a lack of consideration, it has been showed, diminishes the public's deference to institutional authorities.

POLITICAL TRUST AND NUCLEAR ISSUES

The studies of public opinion cited above repeatedly show that a lack of trust in the government agencies involved in managing a nuclear waste repository is an independent influence on oppositional opinions, even after factors such as proximity to the proposed site, the perceived costs and benefits and political ideology are taken into account. It should be noted, however, that the estimates of this "effect" of political trust are modest in magnitude and the statistical models account for a small portion of the variance in public opinion.

Comparing the trends in trust in the national government and opinion about nuclear power summarized in Figure 1 indicates a lack of close connection between the two attitudes. Support for nuclear power continued to decline while trust in government waxed and waned. The resurgence of political trust during a Reagan presidency that generally favored the development of nuclear power did nothing to slow this movement. Table 4 in the Appendix illustrates the point by showing that politically trusting and cynical respondents did not differ appreciably in their attitudes toward environmentalists or opinions about government policy with regard to developing nuclear power. The implication is that high levels of presidential popularity and a generalized sense of trust in national institutions cannot be easily harnessed to the goal of boosting support for a waste disposal program and its managers.

In this regard, it is important to point out that the analysis of public attitudes in this report refers exclusively to the opinions of the general public. While the

climate of general opinion sets boundaries to public policy, the views of activist groups and institutional elites have special significance. These groups both shape mass opinion and the calculations of proximate decision-makers. A participatory decision-making process gives intense minorities numerous opportunities for voice and frequently the ability to dominate a policy domain whatever the preference of the lukewarm majority.

Future research should examine the levels of trust among critical elites and the bases of their outlook toward managers of the nuclear safety program. Clearly, there are fundamentalist environmentalist groups who could never be won over and whose opposition to technological risk is embedded in their cultural outlook or "way of life" (Wildavsky and Dake 1989). Similarly, there are groups whose confidence in the powers of science and technology are unshakable. The experience of countries such as Japan and France indicate that a vital element in the development of nuclear is elite consensus that such a program serves the national interest and meets a generally acceptable threshold of risk. The challenge to policy-makers in the United States is to evolve a decision-making process that makes such a consensus possible.

THE CANADIAN MODEL

Canada's problem with hazardous waste disposal is directly analogous to that faced by the United States and its experience in siting waste repositories is worth reviewing in more detail than is possible here. The Canadian approach differs substantially from the process mandated by Congress and adopted by the DOE. Canada requires approval of the local community before the final siting decision is made.

The Canadian system works as follows. The concept of long-term storage deep in bedrock must be accepted before a site search is initiated. The current approval process was initiated in 1981. Atomic Energy of Canada Limited (AECL) is responsible for developing the storage Concept which is being examined by an official Review Panel with the advice of a Scientific Review Group. In the context of this review, five public meetings were held in different provinces to inform the public of the review process and the underlying approach to waste disposal. After Concept approval by the Review Panel, AECL is to prepare an environmental impact statement which the Review Panel considers before issuing its final recommendations to the government for approval.

The Canadian approach involves intensive negotiations with local communities in order to develop a plan for mitigation and compensation and to involve them in planning a system for monitoring safety. Formally, at least Canada is prepared to trade-off time and inaction for public participation in and acceptance of siting decisions.

AECL commissions frequent surveys of public opinion on nuclear issue. These surveys, conducted principally in Ontario, indicate that between 1979 and the present, public awareness of the Waste Management Program grew. In 1979, 44% claimed to be aware of the program; in 1988, the figure was 61%. Knowledge of the review process itself, however, was sparse; in 1988, only 14% claimed to know anything about it. Nevertheless, in 1988, 70% of the Canadian public expressed confidence that it was technologically feasible to assure safe disposal.

Despite this general sense of trust, seemingly far in excess of the American experience, Canadians are skeptical of computer models that assess risk and express a desire for "an absolute guarantee of safety," clearly an impossible standard. Canadians therefore seek public participation in the siting process and like their American counterparts place their trust in public interest groups as watchdogs for their safety concerns. A recent poll found a majority of 52% favoring an initial monitoring period of longer than forty years and a preference for sealing vaults only after an extended trial period.

The Canadian data reveals many public misconceptions about nuclear waste and widespread ignorance about its sources, quantities and toxicity. The evidence concerning the relationship between knowledge and risk acceptance is mixed, paralleling the results of American data concerning the low-level waste repository in Michigan. In some communities, public education and increased knowledge resulted in lessening public fears about elements of the AECL disposal program. Access to information and contact with AECL staff did increase trust in Program managers and the credibility of their assessments, but this did not have the concomitant effect of raising acceptance of the controversial aspects of the Program. Greber (1991) concludes that a growth in public acceptance probably must await the successful testing of a demonstration site.

Canadian and American public opinion converge in many respects. In both countries, there are strong majorities who consider local veto rights, independent

monitoring of the facility, a guarantee of equity in site selection and assured compensation for reduced property values and other impacts as preconditions of accepting a site near them. On the surface at least, the Canadian government has committed itself to meeting these concerns and developed a process for waste storage that emphasizes meaningful consultation.

CONCLUSIONS

The preceding review of public opinion consistently point to these conclusions. First, Americans are becoming more fearful about the health and environmental hazards posed by technological change. How much of this heightened sensitivity to risk is due to basic changes in the public's values and cultural outlook, how much to dramatic events as amplified by media coverage and how much to objective changes in the nature of the risks themselves is not clear. What does seem apparent is that risks associated with radioactivity and with toxicity more generally are subjectively experienced as uniquely frightening and repulsive. Under these circumstances, scientific approaches to risk assessment that stress the low statistical probability of the worst case scenarios have little impact on public attitudes.

Second, trust in institutions is the end-product of ongoing experience with and learning about their performance. In the domain of nuclear policy, the Department of Energy now lacks a reservoir of goodwill among the general public and is viewed with intense hostility and suspicion in the state where it intends to locate a permanent underground nuclear waste repository. On that issue, the choice is stark. Either impose the siting decision on a recalcitrant public or abandon the effort. The legal and political feasibility of a decision to preempt opposition to the Nevada site must be weighed, of course. What seems apparent, however, even if successful, such a preemptive strike is precisely the kind of action that further erodes trust and galvanizes opposition in other regions fearful of becoming the next target.

Third, the restoration of public trust is a difficult, long-term process, easily subject to setbacks due to adverse events and negative publicity. In this regard, public education carries its own risks. As Slovic, Layman and Flynn acutely note, openly stating the limits of technical understanding and frankly admitting past errors might actually cause a deterioration of confidence in the organization's ability to manage risk even as it earns credit for being truthful.

Fourth, a low level of trust in institutions is to some extent inherent in the adversarial nature of the American political system. Divided government, a lack of cultural consensus, a litigious public and a proliferation of interest groups benefitting from institutional opportunities to make their case are factors that are bound to sow public skepticism about the credibility of risk management policies. Where elites are deeply divided, the general public cannot be expected to simply give authorities the benefit of the doubt.

Although rebuilding public faith in the trustworthiness of federal risk management agencies is a formidable task, the problem must be addressed. Indeed, the survey evidence summarized above provides some clues as to the kinds of structural changes in decision-making with which the process can begin. The guiding principles should be to redefine the process in ways that provide openness, public participation, local involvement in decision-making and equity.

The policy-making process itself can be decomposed into three phases with different configurations of decision-makers. *Site selection* in which outside experts, local authorities and community residents have an important role that goes beyond mere consultation; *facility management* in which federal agencies aggressively regulate; and *safety monitoring* in which outside experts and local constituencies have an authoritative role.

Among the elements of a long-run strategy are:

1. Improved public education. Technological knowledge and accurate information about the problem of waste disposal is no guarantee of risk acceptance or trust in institutions. There are specks of evidence, however, that knowledge may dissipate the phobic quality of some public fears. An effort therefore should be made to communicate consensual scientific assessments of risk to the public and the media institutions that shape opinion. The involvement of "neutral" experts with sound environmentalist credentials in this process is important. Creating a public forum in which the assessments of sources with high credibility such university-based experts and public interest groups, about the necessity for storage repositories can be communicated is important. One element in the process of public education should be to increase awareness of the dimensions of the problem and the nature of the risks associated with the status quo and various alternatives. In the absence of substantial expert agreement about the nature of the problem and the risks of alternative solu-

tions, public doubts will remain intact.

2. Manipulation of costs and benefits. Concentrating on the role of trust in institutions should not ignore the relevance of other incentives for supporting a proposed facility. Surveys repeatedly point to public concern about guaranteed compensation for social and economic losses caused by the construction of a facility, not to mention insurance against possible accidents. Given the public distrust of the DOE, a credible system for providing compensation and financing solutions for environmental and public health problems would have to include outside guarantors.

3. New institutions. A legitimate decision-making process should include a substantial role for independent technical review bodies composed of members from a wide range of disciplines, citizen groups and outlooks, including the participation of all affected parties and of exclusion of groups committed to one or another side of the issue. Indeed, siting decisions might well be assigned to wholly new institutions composed of a mixture of civil, economic and governmental figures along the lines of the National Commission created to recommend the closing of military bases. This procedure can elevate equity considerations in site selection and reassure the public through its hearings and reports that a full range of alternative sites and technical solutions were considered.

4. Continuous monitoring as a priority. An important reason for the loss of trust in the DOE and its contractors has been revelations of widespread environmental problems at weapons facilities and efforts to conceal or downplay these problems. Secretary Watkins himself has called for a new culture of public accountability. One consistent finding of all research about trust in government is that the public's faith is earned. Performance matters and public awareness of failures in scientific management, breakdowns in equipment, missed deadlines and cost overruns have had a powerful and cumulative negative impact. Aggressive oversight mechanisms that are continuous, that include local representatives with shared power and that provide for independent scrutiny of scientific information by outside researchers are another element in a strategy for restoring public confidence.

Public opinion toward the nuclear establishment in government, science and industry has traveled a forty year trajectory from admiration to mistrust. Once associated with progress and economic gain, these institutions now elicit widespread fears of disaster and runaway costs. Given the public's perceptions of the risks of

chemicals, it would seem that the lessons to be learned from the controversies surrounding the disposal of nuclear wastes apply to the disposal of toxic materials more generally. Any facility that produces, transports or disposes of such materials will face public opposition and assessments of risk that may differ from those of technical experts. Heightened public awareness of and anxieties regarding toxics can in turn lead to attempts to use governmental power to regulate these substances.

Building credibility and developing a decision-making process are issues that face government agencies on an ongoing basis. The first step is to recognize the existence of the problem. The second is to acknowledge the legitimacy of public concerns, however much they contradict the views of agency staff and client groups. The third step is to institute organizational change designed to increase legitimacy, even at the expense of time, neat structural arrangements and power. Finally, trust is based on effectiveness; setting reasonable expectations for performance and consistently meeting them builds public confidence.

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APPENDIX

26 COMPILATION OF REPORTS

FIGURE 1

Trends in Political Trust and Support for Nuclear Energy

TABLE 1
TRENDS IN TRUST IN GOVERNMENT - NES DATA 1958-1990

	1958	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986	1988	1990
<u>TRUST GOVERNMENT TO DO RIGHT</u>															
None		0%	3	0	0	1	1	1	4	4	3	1	2	3	3
Some	25%	23	30	38	46	45	62	65	66	70	64	54	59	56	70
Most	59%	62	50	55	47	49	34	31	27	24	32	41	36	37	25
Always	16%	15	18	8	7	5	3	3	3	2	2	4	3	4	3
None/Some	25%	23	32	38	47	46	63	66	70	74	67	55	61	59	72
Most/Always	75%	77	68	62	53	54	37	34	39	26	34	45	39	41	28
<u>GOVERNMENT RUN FOR ALL</u>															
Few Big Interests	30%		39	43	55	59	74	73	73	77	68	59		67	75
Benefit of All	70%		62	57	45	41	26	27	27	23	32	41		33	25
<u>GOVERNMENT WASTES MONEY</u>															
A Lot	46%	45		59	68	67	76	77	79	80	68	66		64	68
Some	44%	47		36	28	31	22	20	19	18	30	30		34	31
Not Much	10%	9		5	4	2	1	3	2	2	2	4		2	2
A lot	46%	45		59	68	67	76	77	79	80	68	66		64	68
Some/Not Much	54%	55		41	32	33	24	23	21	20	32	34		36	32
<u>GOVERNMENT OFFICIALS KNOW WHAT THEY'RE DOING</u>															
Do Know	40%	28		39	48	42	48	53	56	65					
Don't Know	60%	71		61	53	58	52	47	44	35					
<u>PEOPLE RUNNING THE GOVERNMENT CROOKED</u>															
A Lot	25%	29		27	34	38	47	44	42	49		33		42	50
Not Many	46%	52		54	50	48	43	42	44	43		52		47	41
Hardly Any	28%	20		20	16	15	11	13	14	9		15		12	9
A Lot	25%	29		27	34	38	47	44	42	49		33		42	50
Not Many/Hardly Any	75%	71		73	66	62	53	56	58	51		67		59	50

Source: National Election Studies; In-person interviews of National Samples, done biennially.

TABLE 2

TRENDS IN CONFIDENCE IN INSTITUTIONS

"As far as the people running [institution] are concerned, would you say you have A Great Deal of Confidence, Some Confidence, or Hardly Any Confidence At All in them?"

	1973	1974	1976	1978	1980	1982	1984	1986	1988	1990	1991
Medicine	54½	60	54	46	52	45	52	47	51	46	44
Education	37	49	38	28	30	33	29	28	29	27	41
Military	32	40	39	30	28	31	37	32	34	33	47
Organized Religion	35	44	31	31	35	32	32	26	20	23	37
Supreme Court	32	33	35	28	25	31	35	31	35	35	40
Major Companies	29	31	22	22	27	23	32	26	25	25	36
Press	23	26	28	20	22	18	17	19	18	15	33
Executive Branch	29	14	14	13	12	19	19	21	16	23	37
Congress	24	17	14	13	9	13	13	17	15	15	34
Organized Labor	16	18	12	11	15	12	9	8	10	11	28

Source: General Social Survey, National Opinion Research Corporation; In-person interviews of National Samples, done annually.

TABLE 3
EDUCATION, PARTICIPATION, AND POLITICAL TRUST

	1968	1980	1988	1990
Education:				
Less than High School Diploma	37%	12%	15%	15%
High School Diploma	47	13	22	14
Some Post-High School Education	46	12	23	14
College Graduate	51	11	27	13
Graduate Degree	61	13	17	9
 Voting Turnout:				
Reported Voting	45%	13%	23%	13%
Did Not Vote	42	11	18	14

Source: National Election Studies; In-person interviews.

TABLE 4

ENVIRONMENTALISM AND POLITICAL TRUST

	1980	1988	1990
Feeling Thermometer towards Environmentalists Mean Value (0 = Cool, 100 = Warm)			
Respondents with Low Trust	71	76	77
Respondents with Moderate Trust	70	77	80
Respondents with High Trust	76	77	79

Percentage of respondents answering both TRUST GOVERNMENT TO DO RIGHT and GOVERNMENT RUN FOR FEW in trusting direction:

"Present governmental regulations with regard to pollution and other environmental problems limit full use of some energy sources. Do you think the government should relax environmental protection regulations to increase the use of these energy sources, or should the government keep environmental protection regulations unchanged even though this may delay the production of more energy?"

Keep regulations unchanged	13%
Relax regulations, with qualification (volunteered)	11
Relax regulations	12

"Do you think something can be done to deal successfully with the energy problem, or do you think we'll have to continue to live with energy shortages and rising prices because not much can be done about it?"

Deal successfully with problem	12%
Live with shortages; not much can be done	14

"Some people say that the nation needs to develop new power sources from nuclear energy in order to meet our needs for the future. Other people say that the danger to the environment and the possibility of accidents are too great. What do you think? Are you in favor of building more nuclear power plants, would you favor operating only those that are already built, or would you prefer to see all nuclear power plants closed down?"

Favor building more plants	13%
Operate only those already built	13
See all plants closed down	9

Source: 1980 National Election Study; In-person interviews.

TABLE 4 (continued)

ENVIRONMENTALISM AND POLITICAL TRUST

Percentage of respondents with High Trust on two-item Trust Index

	1988	1990
"If you had a say in making up the federal budget this year, for which of the following programs would you like to see spending increased and for which would you like to see spending decreased... Should Federal spending on improving and protecting the environment be increased, decreased, or kept about the same?"		

Increased	21%
Decreased/Kept the same	23

Source: 1988 National Election Study; In-person interviews.

"Should the government force all companies to comply with strict pollution standards even if it might put some of them out of business?"

Yes, force compliance	13%
Depends (volunteered)	11
No, don't force compliance	17

Source: 1990 National Election Study; In-person interviews.

PUBLIC TRUST IN ORGANIZATIONS AND
INSTITUTIONS:
A SOCIOLOGICAL PERSPECTIVE

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Organization theory is virtually devoid of references to specific means through which organizations can gain public trust. Though implications regarding public trust can be inferred from the literature on organizations and their environments, the literature itself does not speak directly to the issue of maintaining or building such trust. On another front, the *intra*-organizational literature on trust is extensive, but it focuses primarily upon the links between employer/employee relations, job satisfaction, and organizational productivity.¹

Thus, given the current treatment of trust in the organization literature, this paper reviews instead the extensive sociological literature on trust, including some recent developments regarding public trust in institutions. The paper begins with a review of the major conceptions of trust that have been developed in the social sciences, and then relies upon Zucker's (1986) typology of trust both to characterize this literature as well as to identify different sources of trust production. The last section presents means through which trust can be maintained. Since the literature suggests trust is maintained through means somewhat different from those through which it is produced, these topics are presented separately. Throughout, parallels are drawn to organization theory in order to demonstrate the applicability of the sociological literature on trust to the interaction of organizations with their environments.

SOCIOLOGICAL CONCEPTIONS OF TRUST

Trust has been a topic of moral and social philosophy for hundreds of years. Numerous conceptions have been advanced and refined, the most prominent of which are outlined below. Despite the breadth and depth of this literature, and the relatively recent efforts of such authors as Blau (1964), Luhmann (1979), and Zucker (1986) to grapple with and define the concept in theoretically productive ways, it is surprising that trust has made so little headway into the literature on organizations and their environments.

Yet, this also appears to be the case in other fields as well, where the sociological literature on trust is similarly overlooked, even in research using trust as an important variable. For example, Sissela Bok (1978), in her acclaimed book on the moral dilemmas of lying, never defines trust, and refers only briefly to some possible conceptions of trust in a footnote (1978:31).² Though the reader can infer from her discussion that trust has something to do with expectations regarding the future

behavior of others (1978:18-9), she is never explicit on this point and one is thus left to wonder at her conclusions. If lies indeed erode the general system of trust upon which institutions and society are founded, how would we recognize the erosion of trust, and thus prevent institutional collapse?

Reiss (1984) similarly does not define trust, yet argues that governments select regulatory enforcement models which are based either on trust or surveillance. Though he tells us that "trust systems are fragile" (1984:27), that "the capacity to keep secrets is a condition of trust" (1984:29), and that "the development of trust systems has markedly changed the nature of wrongdoing" (1984:33), Reiss never explicitly defines trust, and his citations suggest he is generally unaware of the sociological literature on trust. Because of such oversights, and because researchers differ in their approaches to trust, considerable effort is devoted below to fleshing out various conceptions of trust *prior* to discussing trust production and maintenance.

Sociological definitions of trust generally include some reference to expectations, particularly expectations that others will behave in a predictable manner not devoted entirely to self interest (for examples and citations, see Barber, 1983:7; Zucker, 1986:57-58; Neu, 1991a:186; and Neu, 1991b:244). Violating these expectations disrupts trust, but does not necessarily generate distrust. As Zucker (1986:59) argues: "Distrust only emerges when the suspicion arises that the disruption of expectations in one exchange is likely to generalize to other transactions." The conceptions of trust presented below — trust in a fiduciary relationship, trust as an alternative to contracts, trust as distinguished from cooperation, and trust as a means for reducing social complexity — generally include these characteristics. The conceptions are not mutually exclusive, but are rather intended to capture the various ways in which trust has been presented in the social sciences.³

TRUST IN A FIDUCIARY RELATIONSHIP

One long-standing conception of public trust arises from the notion of fiduciary relationships, in which trust is placed in another to act in one's capacity. Silver (1985:53) traces this conception of trust in social and political theory at least back to Locke's distinction between political trustees and social contracts.

Society, [Locke] argued, is constituted by a contract among persons entering into agreements from which all parties properly derive benefit. Government, however, is founded upon trust; the faithful trustee does not benefit from fulfilling the trust placed in him.... Trust sustains government, as contract does society.

Barber (1983) relies primarily upon a conception of fiduciary trust,⁴ but applies it more broadly to include various familial, charitable, and economic exchanges. Though he seeks to delineate fiduciary trust from professional trust — i.e., trust in the “technically competent role performance” of experts or professionals (1983:9) — he presents little theoretical justification for treating them separately. Indeed, at one point, he implies that trust in technical competence is simply a special case of fiduciary trust since a fiduciary obligation is placed on the user of special knowledge (1983:15). Thus, as in all fiduciary relationships, individuals are trusted (expected) to carry out their duties in regards to others while not taking excessive personal advantage of their privileged position.

Unfortunately, despite the length of his book, Barber adds little of theoretical or empirical import to the literature on trust, relying instead on the conceptual work of his predecessors. Though he provides extensive descriptions of such arenas of fiduciary trust as the family, private foundations, and government, he does not clearly establish links between trust production, maintenance, or loss. In this regard, Parsons (1969) and Bella (1987) provide more extensive analytic treatments of the requisites for professional trust. More generally, trust production in the broader area of fiduciary relationships will be discussed later in this paper with regard to private markets (Shapiro, 1987) and fiduciary law (Clark, 1985).

Parsons (1969:127-28) claims there are four conditions upon which the emergence of trust in relationships between clients and professionals depends. Though Parsons does not explicitly state that all four conditions are necessary for lay persons to overcome the “competence gap” and to place their trust in professionals, his language suggests all four conditions are necessary. “First, it must be believed on both sides of the gap and, of course, by a sufficient proportion of the participants that the enterprise in question is in the service of *common* values.” Second, the common values “must ... be translatable into common *goals*” Third, individuals on both sides of the relationship must be collectively involved; that is, they must not see

themselves “only” as patients or “only” as doctors. Finally, “there must be some adequate ‘symbolization’ of both competence and integrity,” since trust relationships “should not be grossly incompatible with known facts and conditions of feasibility....” Combined, these conditions of collective solidarity provide “a common interest” motivating actions that are neither in conflict with personal interests nor fully dictated by them.

Parsons’ analysis of professional trust should thus be viewed within the framework of his theory of functional differentiation within social structures and the cultural legitimation of those functions (Parsons, 1967:500-503). Unfortunately, extracted from this broader theory of social systems, his four requisites for professional trust are more definitional than causal. In this regard, Bella’s (1987) analysis is more process-oriented. Bella argues that professionals evoke public trust not through their personal integrity or claims to expertise, but through the integrity of the social process through which the knowledge base of the profession is itself derived and applied. Rigorous education and peer reviews, as well as constant conformance to codes of ethics, are signals to the public that professionals do not define their responsibilities solely through self-interest or organizational assignments. These mechanisms will be further discussed in the later sections on trust production and maintenance.

TRUST AS AN ALTERNATIVE TO CONTRACTS

Numerous authors have argued that trust and contracts are the two basic means through which *all* exchanges are facilitated, though they disagree on the degree to which trust and contracts are alternative or complementary mechanisms for exchange. In economic analysis, for example, the assumptions underlying the model of “perfect competition” do not include or require trust because exchange occurs under conditions of both perfect information and numerous suppliers and demanders. In this imaginary world, individuals can perfectly specify a contract; and, if one party breaks the contract, numerous others exist with whom contracts can be made. In this repeated-game environment, individuals are driven to live up to their contracts because their reputation is a capital asset. Thus trust is not necessary for exchange.

No market is perfect, however; and in less than perfect markets some amount of trust must exist prior to contracting (Neu, 1991b:245). While economists have

focused on the use of implicit or explicit contracts, other social scientists have argued that contracts themselves are not sufficient for exchange for several reasons. Since it is prohibitively costly, if not cognitively impossible,⁵ for contracts to include specifications of all possible contingencies, most contracts rest on "background" (Garfinkel, 1964) assumptions, in which the parties to a contract trust that each will act according to expectations that are not covered in the contract itself (Dasgupta, 1988:53). This is reflected in Macauley's observations that businessmen avoid calling out their lawyers or reading legalistic contract clauses at one another whenever discrepancies between contracts and outcomes arise (1963:61), and that they sometimes "welcome a measure of vagueness in the obligations they assume so that they may negotiate matters in light of the actual circumstances" (1963:64) and thus maintain long-term business relationships (1963:63). Legal theory has accordingly begun giving greater weight to the relational aspects of contracting, discounting the classical notion that written contracts encompass discrete transactions in which both parties are assumed to have planned for all contingencies and to have entered into the contract accordingly (Macneil, 1978).

Cognitive and practical limitations in contractual planning are compounded by the fact that many exchanges involve asymmetric (or unevenly distributed) information, particularly in principal-agent relationships where a principal retains the expert services of an agent specifically because the principal herself does not possess such expertise. In such circumstances, the principal may be able to place some contractual limitations on the agent's performance, but the relationship's asymmetry further constrains the principal's ability to specify contingencies in a contract and monitor performance (Shapiro, 1987:633-34; Pratt and Zeckhauser, 1985).

Silver (1985) argues that trust was particularly important prior to the 19th Century, when monetized markets and third-party enforcement of contracts were incompletely developed. "Hence the high, indeed hyperbolic, celebration of trustworthiness, and the deep concern with treachery and disloyalty ... that characterized the period" (1985:54). The development of the price system and legal institutions could not, however, completely replace trust (1985:58), since contracts (Lewis and Weigert, 1985b) and monetary exchange systems (Frankel, 1977) are only possible in the presence of common cultural understandings and expectations. Contracts not only presuppose trust between the contracting individuals and in the legal system

which backs them, contracts are imperfect substitutes for trust (Neu, 1991a:190-91).

More generally, contemporary social theorists of trust reject the utilitarian, atomistic accounts of economic exchange underlying the "hidden hand" theory of Adam Smith and his contemporary progeny, the institutional economists. Granovetter (1985), Perrow (1986), and Bradach and Eccles (1989), for example, argue that economic trade is "embedded" within interpersonal trust relationships, and thus reject rational choice arguments as being narrowly construed or "undersocialized" (Granovetter, 1985:487). By ignoring the political, ethical, and cultural environments within which exchange occurs, atomistic accounts of self-interested behavior fail to recognize the social factors which constrain and channel choice.

Institutional incentives to obey contracts, for example, are probably insufficient for preventing malfeasance since purely self-interested behavior is certainly capable of discovering ways to evade contractual obligations and regulations (Granovetter, 1985:489). As will be argued below in the section on trust production, institutional arrangements can bolster trust by providing common frameworks for exchange between strangers, but they are not a functional equivalent for interpersonal trust. Economic analyses of principal-agent relationships also overemphasize the role of monetary incentives in exchange relationships to the virtual exclusion of socially mediated rewards (Arrow, 1985:50). Even the economic incentive to protect or build one's reputation as a capital asset (Dasgupta, 1988:62) does not explain such "economic" transactions as tips left in roadside restaurants far from one's home and acquaintances (Neu, 1991b:246). Thus, some form of generalized social morality, or trust, must underlie exchange relationships (Granovetter, 1985:490). One prominent economist, Kenneth Arrow, has even admitted that trust may be a necessary condition for markets to operate efficiently or perhaps even to operate at all (Arrow, 1974:23,26). Economic analysis, however, can only assume that trust is present or absent; it can not predict the conditions which create or erode trust, nor can it tell us the degree to which trust is present.

Bradach and Eccles (1989) argue that trust also permeates authority (or intra-organizational) exchanges in addition to markets. Trust may thus be an important factor within government agencies in determining whether delegated responsibilities will lead to successful policy implementation (March and Olsen, 1989:11,22-23,27).

Given the presence of trust in both market and hierarchical transactions, Bradach and Eccles argue that the “markets and hierarchies” dichotomy of transaction cost economics⁶ is a false dichotomy because price, authority, and trust interweave in various ways to govern transactions (1989:101). Oliver Williamson (1991) has responded to this critique by reconceptualizing the embeddedness argument in order to make it more amenable to a transaction-cost framework. Thus, he argues that exchanges based on interpersonal trust are relatively rare outside of the family; that such trust-based exchanges can be readily distinguished from those based on calculative behavior; and that exchanges based on calculative behavior are themselves backed up by various social and legal institutions embedded in trust.

Williamson’s approach, however, may lead analysts to excessively cynical interpretations of specific transactions given the explicit assumption of opportunistic behavior underlying transaction cost economics (Williamson, 1991:5-6) and the absence of an operational distinction between trust and calculative behavior. Rather than providing an operational distinction, Williamson cites three examples of trust from Coleman’s (1990) work on rational choice, arguing that Coleman’s descriptive examples can be interpreted merely as calculative behavior in the face of uncertainty. In relying on these examples, however, Williamson has placed himself on relatively firm ground since, as will be discussed in the following section, most sociologists would agree with him that game-theoretic examples do not capture the notion of trust.

TRUST VERSUS COOPERATION

Many psychologists (e.g., Deutsch, 1958; 1973) have attempted to use games in experimental situations to measure and/or establish the antecedents to trust, but their efforts have generally been held in disdain by sociologists of trust. Lewis and Weigert (1985a), for example, in reviewing the empirical research on trust generated by experimental psychologists and political scientists, argue that it relies excessively upon “methodological approaches that reduce trust to its cognitive content through psychometric scaling techniques or to its behavioral expressions in laboratory settings” (1985a:967). In other words, they analyze trust as the product of individuals sequentially reacting to each other’s behavioral displays. “From this atomistic perspective, trust resides in individuals, focuses on some social object, and is enacted in

behavior" (1985b:456). Sociologists, however, conceptualize trust "as a reciprocal orientation and interpretive assumption that is shared, has the social relationship itself as the object, and is symbolized through intentional action" (1985b:456). Thus, empirical research conceptualizing trust as a psychological event within the individual rather than an intersubjective or systemic social reality is not capturing the concept itself (1985a:967).

Lewis and Weigert (1985a:975) note, for example, that "prisoner's dilemma" experiments, as exemplified by the work of Deutsch (1958; 1973), merely identify the antecedents to cooperative behavior (e.g., the ability to communicate and repeated trials), but do not establish whether the decision to cooperate is itself based on trust.⁷ Moreover, "If, as the sociological conception of trust holds, trust is essentially social and normative rather than individual and calculative, we would not expect it to manifest itself strongly in experiments where strangers are brought together to interact in the absence of prior social relationships among them and according to the norms of the experimental situation" (1985a:976). Experimental games are not, in fact, structured in ways similar to social interaction. Not only are they time-bound, but the decision by research subjects to be "in the game" allows them to suspend the presuppositions and procedures of "serious" life as well as to opt out or "leave the game" whenever they choose (Garfinkel, 1963:207). Because morality and responsibility is circumscribed in a laboratory setting, caution should be used in claiming that trust can be measured or equated with cooperative behavior.

Though cooperation can not be equated with trust, it is indicative of the presence of trust since some degree of trust underlies all human interactions. Despite one observer's observation that "We don't trust people who are only honest when it pays to be honest" (Bella, 1987:118), both cooperation and competition require trust, since competing in a mutually non-destructive way requires trusting our competitors to comply with at least some basic rules (Gambetta, 1988:215). As Adam Smith once noted, "if there is any society among robbers and murderers, they must at least ... abstain from robbing and murdering one another" (cited in Gambetta, 1988:214). Thus, as will become apparent in subsequent sections, trust is not a phenomenon which either exists or does not exist. Not only are there different types and sources of trust (Zucker, 1986), but trust also exists between the extremes of blind trust and the complete absence of trust (Gambetta, 1988:218).

In his critique of the literature on trust, Williamson argues that social scientists have recently begun to use trust and risk interchangeably, such that trust is a subclass of risk, and that trust is “warranted when the expected gain from placing oneself at risk to another is positive, but not otherwise” (1991:20). By reviewing only the recent literature, however, he presents an uneven depiction of the literature as a whole, since trust in experimental situations has often been framed in terms of expected payoffs which are negative (Deutsch, 1958; 1973). In the latter formulation, trust is claimed to exist when individuals follow decision paths which allow others to inflict greater negative consequences than positive. Given Lewis and Weigert’s (1985a) critique of this latter approach, Williamson’s use of positive expected payoffs as a characterization of the literature on trust takes on the appearance of a strawman. In other words, Williamson only critiques examples which most observers would agree are more accurately depicted as calculative behavior; while implying that examples demonstrating negative payoffs can be explained by such situational constraints as bounded rationality, coercion, or becoming rattled under pressure (1991:27).

In sum, although game theorists may speak of trust, they are probably not studying trust at all. “What they are investigating are the processes by which individuals come to formulate and act on predictions about the behavior of others” (Lewis and Weigert, 1985a:976). Trust includes cognitive, emotional, and behavioral components (Lewis and Weigert, 1985b:464), but such experiments do not distinguish the degree to which these components are present at various stages of iterated games or how these components are interrelated. More generally, it is unknown whether the players trust each other’s motives or believe that their own motives are trusted by others. Given that traditional game theory does not consider how these beliefs are acquired, theorists end up “finding” more equilibria — “usually more uncooperative ones” — than in fact exist in the real world (Gambetta, 1988:217).

TRUST AS A MEANS FOR REDUCING COMPLEXITY

A relatively recent strand of the sociological literature argues that humans need to trust in order to reduce the complexity of even the most routine decision making, and that trusting behavior thus permeates social life (Luhmann, 1979; Lewis and Weigert, 1985a, 1985b). Garfinkel’s studies (1963; 1964), while not focused

specifically on the concept of trust, show the degree to which stable interactions are based upon things “known in common” and “taken for granted,” and which thus reduce the complexity of social life. Instructing his undergraduates to interact with friends, family, and strangers in ways which would disrupt normally “unnoticed background expectancies” (1964:227), Garfinkel sought to demonstrate the ease with which stable, concerted interactions could be disrupted.

In one experiment, for example, students were instructed to engage unsuspecting friends or strangers in conversation, and to act on the assumption that the other’s motivations were hidden and thus that everything the person said was not to be trusted. He reports (1964:234) that:

One student spoke for several when she said she was unable to get any results because so much of her effort was directed to maintaining an attitude of distrust that she was unable to follow the conversation. She said she was unable to imagine how her fellow conversationalists might be deceiving her because they were talking about such inconsequential matters.

From these “breaching” experiments, Garfinkel derived his conception of trust as the belief that others will comply with the expectancies — or rules — of daily life (1963:190; 1964:234). Thus conceived, pure distrust is impossible to maintain even over short durations because of the immense complexity it brings to social interaction. A world of distrust is essentially senseless because events appear “atypical, causally indeterminate, and arbitrary in occurrence, without a relevant history or future ... or moral necessity” (1963:189). Since all possible contingencies would have to be accounted for at every step, and since humans are boundedly rational, pure distrust is impossible outside of a hermit’s existence — even for what are typically considered to be routine social interactions.

Luhmann (1979) provided a broader theoretical framework for this conception of trust, arguing that trust is necessary for the reduction of social complexity, particularly in an increasingly complex modern world. In his oft-cited opening passage, Luhmann (1979:4) writes:

Trust, in the broadest sense of confidence⁸ in one’s expectations, is a basic fact of social life. In many

situations, of course, man can choose in certain respects whether or not to bestow trust. But a complete absence of trust would prevent him even from getting up in the morning. He would be prey to a vague sense of dread, to paralysing fears. He would not even be capable of formulating definite distrust and making that a basis for precautionary measures, since this would presuppose trust in other directions. Anything and everything would be possible. Such abrupt confrontation with the complexity of the world at its most extreme is beyond human endurance.

Luhmann argues that social complexity is the “fundamental problem” (1979:5), in the face of which trust increases the possibilities for both experience and action (1979:8). “To show trust is to anticipate the future” (1979:10). It does not, however, indicate mastery over future events, since such mastery obviates the need for trust (1979:15). Ironically, attempts to master future events through the development of technology may actually increase the need for trust since technology itself increases the future’s complexity and thus increases uncertainty (1979:15-16).

Trust and distrust are developed through familiarity with the past behavior of others (1979:19). “Trust ... is the generalized expectation that the other will handle his freedom, his disturbing potential for diverse action, in keeping with his personality — or, rather, in keeping with the personality which he has presented and made socially visible” (1979:39). Thus, someone is worthy of trust if they behave consistently rather than erratically. Trust is built up through continual use, experience, and feedback (1979:50). In other words, trust grows with use; it is not depleted through use (Gambetta, 1988:234).

Trust does not reside solely within the individual, however: “Trust occurs within a framework of interaction which is influenced by both personality and social system, and cannot be exclusively associated with either” (1979:6). Because everyone believes that trust is necessary, they come to “trust in trust,” the idea that trust is indispensable and thus that we can assume it is so regarded by others (1979:67). In other words, we each trust that others trust, and that they act accordingly. It is this mutual reliance on trust, and not just government regulations, which, for example, sustains such institutions as the monetary order (Frankel, 1977).

Lewis and Weigert (1985a) expand upon Luhmann’s conception, arguing that “trust is based on a cognitive process which discriminates among persons and institu-

tions that are trustworthy, distrusted, and unknown" (1985a:970). Interpersonal trust — as opposed to "system trust," "institutional trust," or "trust in trust" — has a rational, experiential basis, and is thus not equivalent to hope or blind faith. Because we can not learn all there is to know about others, we make "cognitive leaps" beyond what reason and experience alone warrant and trust that others will act as we expect them to act. Interpersonal trust both depends upon and supplements knowledge. We can not trust someone about whom we know absolutely nothing; conversely, if we knew everything about that individual there would be no need to trust them. "Trust begins where prediction ends" (1985a:976); or, put another way, prediction is based on evidence, while trust is based on the lack of contrary evidence (Gambetta, 1988:234). Trust also consists of "an emotional bond among all those who participate in the relationship," which explains why the betrayal of trust "arouses a sense of emotional outrage in the betrayed" (Lewis and Weigert, 1985a:971). The emotional content is particularly strong at the interpersonal level, but is present at the institutional level as well.

In sum, since social interaction would be impossible without some degree of trust, individuals must trust — undertake the risk — that others will act competently and dutifully (Barber, 1983). For stable, concerted interaction to occur, some trust must always exist. Thus, the relevant question for any organization interacting with its environment is not "How can we produce trust?," but rather "How can we produce more trust or maintain the trust we already have?"

THE PRODUCTION OF TRUST

Zucker (1986) has developed a typology in which each of three types of trust is identified with (or defined by) different sources of trust production. "Characteristic-based" trust depends upon personal characteristics, such as family background or ethnicity; while "process-based trust" is produced through repeated exchanges, and "institutional-based trust" through such formal social structures as professional certification and regulation. The typology is evolutionary in that we expect to find institutional-based trust gradually supplanting characteristic-based and process-based trust as a society becomes increasingly complex and differentiated.

By focusing on trust production, Zucker's relatively simple typology provides great insight into the various cognitive and emotional levels at which trust operates,

as well as the respective problems associated with the production of trust. Moreover, applying the typology to organization theory is a relatively straightforward exercise, one which provides several hypotheses regarding the production of trust in an organization's environment. The typology also provides a powerful means — of which Zucker did not take full advantage — for characterizing the literature on trust.

Characteristic-based trust is produced through personal characteristics such as race, gender, and family background, which “serve as indicators of membership in a common cultural system, of shared background expectations” (Zucker, 1986:63). Given that humans need to trust in order to interact, personal characteristics are a simple heuristic for deciding whether individuals or groups can be trusted. As such, “they provide ready-made typifications that, correctly or incorrectly, suggest how individuals with certain ascribed characteristics will behave in certain situations” (Neu, 1991a:187). Characteristic-based trust is most prevalent in small communities which seldom interact with outsiders, but is also present in complex modern societies as evidenced by individuals who cross the street in order to avoid strangers who appear different.

Henslin (1981) is referring to characteristic-based trust in his account of the decisions made by cab drivers to pick up passengers in various neighborhoods and at various times of day. Since cabbies do not know anything specific about the prospective passenger based through past experiences with that person, they must make their decision to stop based upon what they can infer from the setting, the physical appearance of the person, and the manner in which the person presents herself. Henslin thus argues that trust consists of an actor offering a definition of herself, and an audience choosing either to interact with (trust) or not to interact with (distrust) that person (1981:91).

Because it is relatively difficult to change one's personal characteristics, the most viable means for building characteristic-based trust is to socialize with persons possessing similar characteristics. Thus, an organization seeking to produce characteristic-based trust in its environment would place organizational members in boundary-spanning roles⁹ according to their personal characteristics, such that they match the characteristics of appropriate individuals in the organization's environment. For example, a white, Harvard-educated geophysicist interacting with a native-American community would be an unlikely recipient of characteristic-based trust.

Process-based trust, like characteristic-based trust, is interpersonal, but is produced through repeated exchanges rather than through ascribed characteristics, and is indicated by an individual's reputation or by a firm's brand name (Zucker, 1986:62). The production of process-based trust may be facilitated by the presence of characteristic-based trust, but is not dependent upon it. Repeated exchanges occur between individuals for both economic and social reasons. Though initial exchanges are often motivated by self-interest, subsequent exchanges "become overlaid with social content that carries strong expectations of trust and abstention from opportunism" (Granovetter, 1985:490). In other words, exchanges are increasingly governed by norms geared to the preservation of the relationship itself (Macauley, 1963; Macneil, 1978). Trust is similarly extended within political institutions not because of an expectation of positive reciprocal consequences, but rather because individuals have become socialized into the structure of rules prescribing appropriate behavior, and thus delegate and carry out their responsibilities accordingly (March and Olsen, 1989:27). Mutual trust is established when at least one participant in the exchange chooses not to betray the trust placed in him even though she has a considerable interest in doing so (Luhmann, 1979:42).

Process-based trust is similar to the conception of trust developed by Blau (1964) and expanded upon by Haas and Deseran (1981). Blau, in differentiating social exchange from economic exchange, argued that economic exchange rests upon formalized contracts which stipulate the exact quantities to be exchanged, while social exchange involves the reciprocity of favors, in which the exact nature and timing of some future return is "definitely not stipulated in advance" (1964:93). Unlike economic exchange, failure to discharge social-exchange obligations at some later date subjects one to group sanctions rather than to legal sanctions.

Blau argued that trust and social exchange are interdependent; not only is trust essential for social exchange, but exchange obligations promote trust (1964:99; see also Luhmann, 1979:44). Exchange relations "evolve in a slow process, starting with minor transactions in which little trust is required because little risk is involved" (1964:94). Then, "As individuals regularly discharge their obligations, they prove themselves trustworthy of further credit (1964:98)." In this way, reciprocity of benefits is a ubiquitous "starting mechanism" for social interaction (1964:92).

In a particularly insightful example, Blau illustrated how process-based trust

is produced through social — but not through economic — exchange (1964:94):

An individual is obligated to the banker who gives him a mortgage on his house merely in the technical sense of owing him money, but he does not feel personally obligated in the sense of experiencing a debt of gratitude to the banker, because all the banker's services, all costs and risks, are duly taken into account in and fully repaid by the interest on the loan he receives. A banker who grants a loan without adequate collateral, however, does make the recipient personally obligated for this favorable treatment, precisely because this act of trust entails a social exchange that is superimposed upon the strictly economic transaction.

Though Blau argues that "The impersonal economic market is designed to strip specific commodities of these entangling alliances with other benefits..., and thus to make possible rational choices between distinct alternatives with a fixed price" (1964:96), such a dichotomy probably does not exist in modern societies.

Haas and Deseran (1981), while not taking explicit exception to Blau's dichotomy, prefer to use the term "symbolic exchange," which they claim captures the economic value of the goods being exchanged in a trust-producing relationship.

The goods are symbolic in the sense that their principal utility lies in their capacity to symbolize the nature of the relationship between the receiver and the giver of the gifts. They are also symbolic in the sense that their high cost to the giver serves as a token of the giver's good faith (1981:3).

While some exchanges, such as a wave or a handshake may have no utilitarian value, other exchanges, such as an invitation to a dinner party, lie somewhere between social and economic exchange in that they have both symbolic and utilitarian value. The utilitarian dimension of the exchange represents its intrinsic or economic value, while the symbolic or communicative dimension conveys information about the desire of the giver to enter into a trust-building relationship (1981:4). Creating and maintaining trust thus require "the presentation of one's self as a trustworthy person" (1981:4) by using a society's vocabulary of typical gestures through which others can impute your intentions (1981:5). "The more each is willing to invest

(relative to his or her wealth, and perhaps to the benefits to be gained from the relationship), the more trust the other will be inclined to feel" (1981:5). In this way, "The value of an expensive gift as an indicator of the trustworthiness of the giver is independent of its utility to the receiver" (1981:5).

Symbolic gifts include offers of food and drink, gifts, and attendance at formal ceremonies. The utilitarian importance of ceremonial attendance is measure in the time it requires. Thus, "an important person whose time is known to be valuable can express a considerable commitment to a person or a group merely by attending" (1981:8). Haas and Deseran (1981:8-9) agree with Blau (1964:107-08) that refusing symbolic (or social) exchanges is a gesture indicating distaste for entering into a trust-building relationship and may even be interpreted as a sign of distrust towards the giver. Even if a symbolic or social exchange is accepted, the refusal to stay indebted may be interpreted as a refusal to enter into a long-term relationship or even as a sign of mistrust (Luhmann, 1979:44). Thus, unlike economic exchange, where rapid repayment of debts is expected, eagerness to discharge a social obligation may be interpreted as ingratitude. "Social bonds are fortified by remaining obligated to others as well as by trusting them to discharge their obligations for considerable periods" (Blau, 1964:99).

Though these authors do not discuss exchanges within a political context, we can imagine some of the impediments to producing process-based trust through political exchanges. For example, public officials would be in a bind when attempting to build process-based trust with individuals outside of government through symbolic or social exchange. Not only do public agencies currently rely upon formalized procedures and contracts with highly stipulated terms for interacting with individuals in their environment, but many types of social exchanges between public officials and the public are frowned upon in the United States because of the fear that such exchanges will cement quid pro quos with special-interest groups. Yet, if public officials refuse such exchanges, they may risk producing distrust since such refusals may be interpreted by individuals in the organization's environment as an indication that the official — and, by implication, the agency — does not want to enter into reciprocal obligations and may thus not be worthy of trust.

Ceremonial attendance, however, may provide unique opportunities for public officials to build process-based trust, depending upon the rank of the official. High-

level political appointees, whose time may be greatly valued, could instill a great deal of public trust with a single exchange; while boundary spanners at lower levels of the hierarchy may have to rely on repeated exchanges to build a similar amount of trust. Tenure longevity for boundary spanners at intermediate levels of the hierarchy may thus be an important requisite for trust production. If so, employee rotation systems designed to keep civil servants socialized to the agency's mission rather than to their environment¹⁰ may have a negative impact upon process-based trust.

Institutional-based trust "generalizes beyond a given transaction and beyond specific sets of exchange partners" (Zucker, 1986:63). It thus "depends less on the specifics of the particular exchange and exchange participants" and more upon various "institutional practices that ... are accepted as 'social facts' and not often questioned" (Neu, 1991a:188). Zucker (1986) argues that institutional-based trust has become increasingly important since the 19th Century as immigration and internal migration pulled apart the insular communities within which characteristic-based trust predominated. Moreover, the increasingly complex and volatile economy also struck at process-based trust as exchanges were made at ever greater geographic distances and as firms formed, merged, and folded with increasing frequency. In this context, institutional-based trust expanded to provide alternative guarantees for exchanges. The most important of these new institutions were professional credentialing, which served as an alternative to personal reputation; financial intermediaries such as banks, brokers, and independent accountants, which bridged distant exchange partners; and government regulations and laws, which provided a common framework for exchange, including general expectations and specific rules governing transactions (Zucker, 1986:55).

Institutional-based trust has not only gradually replaced characteristic- and process-based trust, it has also complemented those sources of trust production because they are especially vulnerable to malfeasance. According to Granovetter (1985:491):

In the business world, certain crimes, such as embezzling, are simply impossible for those who have not built up [personal] relationships of trust that permit the opportunity to manipulate accounts. The more complete the trust, the greater the potential gain from malfeasance.

Institutions decrease the likelihood of such malfeasance. Thus, interpersonal, social relationships may be a sufficient condition for the production of trust, but they are not a necessary condition since these sources of trust production may themselves provide the opportunity and means for their abuse (Shapiro, 1987:624-25).

Zucker identifies two types of institutional-based trust. The first, person- or firm-specific trust, "rests on membership in a subculture within which carefully delineated specific expectations are expected to hold ..." (1986:63). As a means of acquiring trust outside of (or in addition to) interpersonal relationships, individuals and firms join professional associations and acquire credentials and licenses in order to signal to others that they intend to abide by certain rules and codes of conduct (Neu, 1991a:188). Organizations can also voluntarily adopt various "standard practices" in order to signal the organization's willingness to conform to expectations in its environment (Neu, 1991b:249; Zucker, 1986:90-94; Dowling and Pfeffer, 1975).

A second type of institutional-based trust is produced through intermediary mechanisms such as laws, regulation, and private insurance. In one passage, Zucker (1986:69) provides a pithy illustration of the social transition from interpersonal trust (i.e., characteristic- and process-based) to this form of institutional trust:

If you do not trust your neighbor to participate in a "barn-raising" after your house burns, you have to buy insurance; if you do not trust immigrants to behave according to common understandings ..., then you have to "reform" city governments to give them less power by formalizing personnel procedures; [and] if you do not trust corporations to behave "fairly" and ethically, then you have to formalize interorganizational relations by enacting anti-trust rules....

Though impersonal trust can be purchased and marketed by individuals, organizations, and intermediaries (Zucker, 1986:64; Neu, 1991a:188-89; Neu, 1991b:249-52), personal trust can not be bought directly from the individual in whom it is sought. As Arrow notes: "If you have to buy it, you already have some doubts about what you've bought" (1974:23).

Several recent articles (Shapiro, 1987; Bradach and Eccles, 1989; Neu, 1991a; Neu, 1991b) expand upon and apply Zucker's conception of institutional trust, pro-

viding insight into the ways in which markets and governments maintain what Shapiro (1987) terms "the social control of impersonal trust." Working from Luhmann's argument (1979:52) that individuals in complex societies manage complexity by trusting others possessing specialized knowledge to process information for them, Shapiro argues that such fiduciary relationships outside the extended family are becoming increasingly prevalent. "Specialization and differentiation require that agents be entrusted not only with property for processing, maintenance, investment, custody, or repair but also with the task of information collection" (1987:626). Since personalizing these relationships is not always a practical means for ensuring trust, other forms of social control have arisen to bolster impersonal trust.

Numerous guardians (or trustees) of trust oversee these impersonal fiduciary relationships. Some agents even set up their own self-regulatory systems, limiting competition amongst themselves, bestowing credentials, and restricting entrance to the profession in order to protect their trust capital from eroding through the "abusive practices of wayward colleagues" (Shapiro, 1987:636). Governments also guard impersonal trust relationships by regulating private practices and certifying products before they are marketed (Shapiro, 1987:640). Government regulations also grant some associations monopoly control over their domains of expertise, thus further contributing to the production of trust (Neu, 1991a:189).

Personal expectations arising from regulations, however, "appear to be weaker than those resulting from process-based mechanisms or transactions with a known intermediary" (Neu, 1991a:189). Not only are actors in impersonal exchanges more likely to be motivated by economic than social concerns, and are thus more likely to breach a trust, but regulations themselves often define the limits of trust by limiting the financial liability of intermediaries (Neu, 1991a:189-90). In addition, Shapiro suggests that, even though regulation may be a necessary condition for impersonal trust, regulation is not a sufficient condition for trust given that regulators are themselves placed in the role of agents and thus can use their discretionary power for self-interested purposes. In this respect, self-regulation, "a form of institutionalized conflict of interest," may be particularly suspect (1987:645-46). Because trust between individuals in impersonal markets is dependent upon their trust in the enforcement mechanisms (Dasgupta, 1988:50), fiduciary relationships have become increasingly layered, with numerous "watchers" overseeing various exchange rela-

tionships in order to assure individual actors that their affairs are being well managed (Shapiro, 1987:649).

Multiple regulators, however, can not guarantee institutional trust; particularly if, as Neu (1991a) found in the Canadian securities market, the regulators have developed a "negotiated domain consensus" and are "loosely coupled."¹¹ That is, if regulators carve out exclusive territories for themselves and communicate infrequently amongst themselves about changes in their practices, opportunistic violations of trust are likely to occur. Thus, regulatory redundancy and overlap are beneficial because they decrease the brittleness of the system.¹²

In this regard, courts and legal doctrines can be seen as another source of institutional-based trust. Not only do laws and their enforcement generally constrain and channel behavior, but laws governing the responsibilities of fiduciaries in principal-agent relationships are well delineated. Clark (1985) notes several attributes of corporate fiduciary relationships which are especially circumscribed by law. For example, while independent contractors usually face relatively fixed obligations under their contracts and have no duty to disclose various facts and plans affecting their future requirements, corporate managers are in a "sharply contrasting legal position" (1985:72). Not only are they confronted by an "affirmative duty to disclose" certain kinds of information to other corporate decision makers (1985:72), but courts interpret their "duty of care" in managing the corporation to be more open-ended (1985:73). Specific rules also govern self-dealing transactions and insider trading, thus limiting the corporate manager to specific compensations provided for in the actual contract (1985:73). Courts even rely on moral rhetoric "to create feelings of guilt for violation of duty and rectitude for fulfillment of duty" (1985:75). Though courts generally refrain from moral rhetoric, Clark suggests they may resort to it in the case of fiduciary relationships because the usual market and legal controls do not provide adequate deterrence since the probability of detection is low (1985:78).

In sum, the research on institutional-based trust suggests several ways in which organizations can produce or maintain trust in their environment. For example, since impersonal trust is signaled through the possession of academic and professional credentials, boundary spanners can acquire credentials similar to those of individuals in the organization's task environment.¹³ These credentials will serve as a

signal that the organization's members adhere to the same standards and codes of conduct as other members in the professional community. There is a cost, however, to this method of trust production, since members of professional associations may have goals and loyalties different from those of the organization.¹⁴ Thus, organizational leaders would have to make trade offs between the potential gains in public trust and increased conflict of interest within the organization.

Another means for producing institutional-based trust is government regulation. It is conceivable that public trust in an organization might be low if the public perceives that the organization has too much autonomy or that its operations are self-regulated. This hypothesis suggests that organizations can produce public trust through calls for increased regulation, assuming of course the public trusts the regulator to carry out its duties. Government agencies can themselves request additional legislative oversight or new laws mandating other agencies to conduct external reviews and/or set performance standards. Such intergovernmental regulation is not unusual,¹⁵ though observers have argued that compliance may be more difficult to achieve than in the private sector because lines of accountability are less clear.¹⁶ Moreover, attempts to achieve trust through procedural constraints may also limit those agency behaviors considered desirable (Shapiro, 1987:651).

HOW TRUST IS LOST

Since some degree of trust underlies all social interactions, trust can always be lost as well as gained. Thus, organizations can pursue strategies to maintain public trust in addition, or as an alternative, to trust production. Trust, however, is not necessarily produced and lost in similar — but opposite — fashions. Thus, separate consideration is given in this section to methods for maintaining trust.

One way in which trust can be lost is through the extensive use of contracts detailing the responsibilities of each party in the event of remote or unlikely contingencies (Macaulay, 1963:64). Not only is complete planning cognitively impossible and prohibitively costly, the use of such contracts implies a lack of trust since their purpose often is to specify obligations and future returns — and thus to align expectations — when trust is low. The more contracts are relied upon as a substitute for trust, the greater the signal of distrust or lack of trust. Neu (1991b:247) refers to this as the “irony of contracting,” in which he suggests the use of contracts may lead to a

downward spiral characterized by the increasing use of contracts as imperfect alternatives for increasingly less trust. Macauley (1963:65) argues, however, that detailed contracts may be necessary when exchanges involve complex performances to be performed over long periods of time, especially if the degree of injury in case of default is thought to be great. Certain types of organizations may thus find they have no choice but to rely upon contractual relationships with individuals in their task environment given the nature of their technology.

Trust can also be lost when role expectations are in flux. Reichman's analysis (1989) of insider trading in the stock market, which expands upon Shapiro's conception of layered fiduciary relationships, argues that "changes in the market for financial information have created increasingly sophisticated webs of entanglements and obligations, placing many different roles and organizations at risk of abusing their trust" (1989:185). Rapid structural changes increase the probability of trust violations because cultural norms and role behaviors are also changing.

When cultural and structural innovations challenge the ... social control frameworks, a great diversity of role performance is tolerated. It is in the lag or residual of role sets (a kind of role anomie) that justifications or rationalizations develop. Role ambiguity helps free incumbents to believe that rules are bad or that they don't apply. When "anything goes," it is not so hard to justify deviant behavior as legitimate, "above," or "within the law" (Reichman, 1989:187-88).

Reichman's analysis suggests that an organization can maintain trust through stability. If role changes indeed create opportunities for trust violation by increasing ambiguity in role performance, then reorganizations may be more likely to produce distrust than trust. Not only might reorganizations increase opportunities for actual violations of trust (and thus public expectations of future malfeasance, or distrust), but organizational changes also may not conform with existing expectations in the organization's environment, giving rise to bewilderment and unease and thus decreasing current levels of trust.

Trust can also be lost through lying. In her moral treatise on lying, Bok (1978) argues that individual lies not only erode trust between the liar and the recipient of the lie, each lie also wears away at the social system of trust which supports the institutions upon which society is constructed. Her analysis is thus similar to the "externalities" argument in microeconomics, in that the full social cost of a lie is not borne completely by the liar. Rather than argue that the government should intervene to regulate lying, however, Bok argues that individuals should consider the moral implications of lying. As an example, she notes that government officials often lie to the public to protect the secrecy of their programs, justifying these lies to themselves by arguing that the benefits of the program to the public outweigh the cost of the lie. The officials, however, fail to calculate the long-term, aggregate effect on the loss of public trust in government (1978:27,142). Though Bok's argument is compelling, she not only fails to define trust (as previously noted), her anecdotal evidence also falls far short of demonstrating causal linkages between the individual lies of officials and the erosion of public trust in government.

Finally, trust in professions can be lost through individual incompetence, as well as through complacency in the social process through which professional trust is sustained (Bella, 1987). In summing up Eliot Freidson's research on the medical profession, Barber (1983:144) notes that self regulation through informal peer controls is imperfect, since physicians often do not take action when they witness the faulty work of colleagues; and, when they do take action, typically resort only to ostracism, leaving incompetents free to practice elsewhere. Bella argues that public trust in professions "demands a healthy level of self criticism" (1987:123). Constant peer review is a necessary means for preventing trustworthy communities from being "transformed into associations of self-serving functionaries" (1987:123). Moreover, Bella warns professionals to avoid being captured by the needs and demands of the organization within which they work since organizational biases may then enter the self-regulatory process of the profession.

Though professional self-regulation can maintain public trust, self-regulation may not itself be sufficient. Nevertheless, the research on trust suggests that professionals can be an important source of public trust for organizations, since professional credentials signal the willingness of individuals within organizations to conform to certain expectations. Thus, organizations seeking public trust in their task environ-

ments can hire professionals as a means for producing trust; but this trust can only be maintained if these individuals remain grounded in the social processes of their respective professions. Organizations seeking public trust should thus encourage their members to participate actively in professional communities. "Unfortunately, too few organizations are able to sustain administrative systems that do not hinder such professional independence" (Bella, 1987:127).

Public agencies may be particularly at risk of losing public trust if they rely excessively upon professionals to produce or to justify public policies. Wynne (1987) argues that the credibility of regulations is undermined by risk analyses which rely upon "science" for their legitimacy because the scientific process often strips terms like "hazardous" and "waste" from their social context. Wynne (1987:399) found that "formal risk analysis, often using elaborate models, is virtually always developed, used, or demanded when *credibility* is at stake, and conflicting policy positions are being advocated. More formal precision, it is assumed, will close the argument." Paradoxically, increasing the precision of scientific measures undermines the credibility of regulations since greater laboratory precision increases the gap between experiments and diverse situational realities during implementation (1987:412). Unfortunately, Wynne only briefly discusses trust (e.g., 1987:416,417,435), and does not define the term. His argument is nevertheless consistent with Bella's discussion of professional social processes, and thus serves as an example of how organizational needs can introduce biases into these processes and thus reduce public trust.

Self-serving professionals can also reduce public trust if they come to see their role not as someone giving advice but as someone with influence over policy. As March and Olsen (1989:32) argue: "The changed frame of reference tends to compromise the quality of expert information in the political process and to undermine trust not only in the individual expert but in the institution of expertise." To maintain trust, organizations should thus not only encourage active participation of their members in professional communities, they should also not compromise this expertise by using it as a basis for justifying political decisions or by repeatedly permitting professionals to participate in framing alternatives and making political decisions.

CONCLUSION

The means presented in this paper through which an organization can attempt to produce or maintain public trust are hypothetical and inconclusive. Though theories of trust constitute a rich and burgeoning literature, this research is not specifically geared to the production of trust in an organization's environment or to the production of public trust by a government agency. Some of this research, however, appears applicable to organizations and is consistent with theories of organizational behavior. Given the current state of the organizational literature on trust, the hypotheses derived in this exploratory paper provide a basis for discussing the production and maintenance of public trust in organizations; but it must be noted that these hypotheses have not been tested, and thus the relative effectiveness of these measures is unknown.

With these caveats in mind we can deduce several hypotheses from the sociological literature on trust. First, reorganization should not be considered a general panacea for organizations in which the relative absence of public trust is perceived to be hampering effective operations. In the short run, reorganizations may actually produce distrust by increasing opportunities for malfeasance due to role fluctuations; or, at the least, they may reduce trust by bewildering individuals in the organization's environment who have come to expect certain organizational behaviors. In the long run, when role definitions have stabilized and individuals in the environment have developed new expectations about the organization and new relationships with its members, reorganizations designed to produce public trust are more likely to have their intended effect.

Measures short of wholesale reorganization may be more likely to produce public trust. For example, since individuals in the organization's environment are limited in their ability to process information regarding the organization, they often rely on relatively simple heuristics, such as personal characteristics and professional affiliation, to make judgments about organizational trustworthiness. Thus, by modifying formal and/or informal personnel policies, managers can selectively fill boundary-spanning roles in order to match the personal characteristics of employees with those of targeted groups in the environment. In addition, managers can encourage subordinates and peers to participate actively in professional communities as a means for signalling the organization's willingness to conform to certain institutionalized

norms. Managers should then refrain from using these professional processes and worldviews to justify contentious policy positions, and should not encourage professionals to participate directly in political decisions.

Regulations and enforcement processes also provide signals of organizational trustworthiness. While organizations may desire autonomy for other reasons, such autonomy may decrease public trust in their operations. Thus, to increase trust, organizations should not only submit themselves to the self-regulatory practices of the professions to which their members belong, they should also cooperate with government regulators, perhaps even publicly requesting increased oversight of their operations.

The literature on contracts is relatively ambiguous regarding the production or loss of trust. While detailed contracts aid in aligning expectations when trust is weak, such contracts may themselves signal the absence of trust by one or more parties to the contract. Given that detailed contracts may be necessary when exchanges involve complex (and possibly hazardous) activities performed over long periods of time, organizations may have no option but to accept the necessity of explicit, detailed contracts in certain situations. Organizations can, however, counteract some of the negative consequences of contracts by shoring up trust through other means. Boundary spanners, for example, can emphasize symbolic or social exchanges as means for producing process-based trust. While public officials are limited in their ability to participate in symbolic exchanges which involve gifts, ceremonial attendance at various social functions is usually feasible and may be a productive means for instilling trust with specific groups in the agency's environment.

In closing, it should be noted that the literature on trust and contracts cited in this paper focuses on market-based exchanges between individuals or firms, and refers only rarely to the use of contracts in the public sector. Since political exchanges involving trust may be fundamentally different from private exchanges involving trust, extrapolating from the private sector to the public sector may be a suspect exercise. March and Olsen (1989), however, have begun to delve into the relationship between trust and contracting within political institutions, and have reached conclusions similar to those in this paper. Trust and contracting, they argue, are alternative means for controlling political leaders, and each strategy is confronted by unique dilemmas. On the one hand, principal-agent contracts may be particularly

difficult to design, monitor, and enforce in the public sector (1989:11), and might so circumscribe behavior as to make effective leadership difficult (1989:34). On the other hand, building a culture of trust is "severely strained by exploitative political leaders, and may indeed be impossible to sustain in many heterogeneous societies with deep, persistent social cleavages and traditions of minimal regulation of conflict" (1989:34).

Though pessimistic, their analysis may be illuminating in the context of this paper. While producing trust in government at a macro level may indeed be extraordinarily difficult in a heterogeneous society such as the United States, individual public organizations may nevertheless be able to produce trust within their own task environment. The means presented in this paper for the production of trust by an organization are relatively modest, but they suggest that trust can be produced or maintained on the margin if organizational members adhere persistently to them.

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FOOTNOTES

¹Intra-organizational trust citations are not included in this paper. Recent articles, representing several perspectives, include: Dennis M. Daley (1991), "Management Practices and the Uninvolved Manager: The Effect of Supervisory Attitudes on Perceptions of Organizational Trust and Change Orientation," *Public Personnel Management*, 20:101-12; Joseph P. Cangemi, et al. (1990), "The Development, Decline and Renewal of Trust in an Organization: Some Observations," *Psychology* 27:46-53; Denise M. Rousseau (1989), "Psychological and Implied Contracts in Organizations," *Employee Responsibilities and Rights Journal*, 2:121-39; and, Samuel A. Culbert and John J. McDonough (1986), "The Politics of Trust and Organization Empowerment," *Public Administration Quarterly*, 10:171-88.

²Credit goes to Bernard Barber (1983:3) for noticing this discrepancy, as well as several others not cited in this paper.

³Just as these conceptions are not mutually exclusive, they are also not entirely inclusive. Numerous social philosophers and social scientists have been excluded from this review, particularly where their work has been expanded upon or summarized by others. Thus, for example, the older systems theories of Georg Simmel and Talcott Parsons have been excluded because they have been refined by Niklas Luhmann (1979) and others. In other instances, discretion has been used to exclude research which appeared to add little to the existing literature or which was not readily applicable to the problem of building public trust in organizations. Thus, for example, no articles are cited from an entire issue of *Humanitas* (Volume 9, November 1973) devoted to the topic of "Social and Interpersonal Trust;" and, similarly, no papers are cited from a collection on confidence-building measures in international relations (see *From Distrust to Confidence*, Wolf Graf von Baudissin, editor; Baden-Baden: Nomos Verlagsgesellschaft, 1983).

⁴Though Barber discusses "Trust in the persistence and fulfillment of the moral social order..." (1983:10), his presentation of this conception of trust draws heavily upon Luhmann (1979) and Garfinkel (1963; 1964), whose work is reviewed later in this paper.

⁵On the limits of human rationality in planning, see Herbert A. Simon, *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organization*, Third Edition (New York: The Free Press, 1976).

⁶Institutional economists have recently focused their research on markets and hierarchies as alternative mechanisms for governing transactions, arguing that each is efficient under different circumstances. This research is extensively critiqued in Granovetter (1985) and Bradach and Eccles (1989) for its failure to consider the role of trust in facilitating transactions and thus the implications for institutional design. The "markets and hierarchies" approach is exemplified in two books by Oliver Williamson, *Markets and Hierarchies: Analysis and Anti-Trust Implications*, (New York: Free Press, 1975) and *The Economic Institutions of Capitalism*, (New York: Free Press, 1985).

⁷In citing Deutsch as "the most prominent" of the experimentalists they negatively characterize, Lewis and Weigert (1985a:975) do him somewhat of an injustice. At least in his later work, Deutsch was careful to delineate trust from cooperation, arguing that trust was central to the initiation of cooperation, and that trust, coordination, and bargaining each play a role in bringing about cooperation (see, for example, 1973:54-55).

⁸Though Luhmann appears to use trust and confidence interchangeably in this passage, he was careful later to distinguish trust from confidence, arguing that both imply the potential for disappointed expectations but only trust presupposes a situation of risk (1988:97). He thus agrees with Deutsch (1958:266) that trust requires the potential for greater losses than gains (Luhmann, 1988:98); but disagrees with the game-theoretic approach to trust exemplified by Deutsch (1958; 1973) for its reliance upon trivial risks as indicators of trust (Luhmann, 1979:45).

⁹"Boundary spanner" is used in this paper to refer to any member of an organization who regularly interacts with individuals in the organization's task environment. For a discussion of various conceptions of organizational boundaries and boundary spanning roles, see W. Richard Scott, *Organizations: Rational, Natural, and Open Systems*, Second Edition (Englewood Cliffs, N.J.: Prentice Hall, 1987), chapter 8.

¹⁰See Herbert Kaufman's *The Forest Ranger*, (Washington: Resources for the Future, 1960) for an analysis of how organizational socialization is produced through the routine rotation of forest rangers in the decentralized U.S. Forest Service.

¹¹As used by Neu, "negotiated domain consensus" refers to a tacit agreement reached between institutions regarding the rights and responsibilities of each within an organizational field (1991a:193). "Loosely coupled" indicates that the institutions are not formally interlocked, and thus that "a change in operating practice of one of the institutions does not result in immediate ramifications for the other institutions" (1991a:194).

¹²See Martin Landau, "Redundancy, Rationality, and the Problem of Duplication and Overlap," *Public Administration Review*, (July/August, 1969).

¹³On the conformance of boundary spanners with the expectations of their environment, see also W. Richard Scott, *Organizations: Rational, Natural, and Open Systems*, Second Edition (Englewood Cliffs, N.J.: Prentice Hall, 1987), pp.173-75.

¹⁴See, for example, *The Politics of Regulation*, (New York: Basic Books, 1980), in which James Q. Wilson (1980:374) argues that professionals look to their colleagues outside of the organization for rewards and esteem, and thus that professional affiliation may be a source of competing loyalty to the organization.

¹⁵The Tennessee Valley Authority, for example, must comply with Environmental Protection Agency air pollution requirements.

¹⁶See James Q. Wilson and Patricia Rachal, "Can the Government Regulate Itself?," *Public Interest*, 46 (Winter, 1977).

WORKSHOP ON ESTABLISHING
INSTITUTIONAL CREDIBILITY:
SUMMARY OF PROCEEDINGS

COMMISSION ON BEHAVIORAL AND SOCIAL SCIENCES
AND EDUCATION
NATIONAL RESEARCH COUNCIL

Prepared for the U.S. Department of Energy
February, 1992

INTRODUCTION

At the request of the Secretary of Energy Advisory Board (SEAB) Task Force on Radioactive Waste Management, the National Research Council (NRC) sponsored a Workshop on Establishing Institutional Credibility. The purpose of the Workshop was to (1) identify the range of available knowledge regarding the theoretical and conceptual issues of how institutions establish *their* credibility and legitimacy with key constituents, and (2) to help explore and clarify fundamental concepts in management theory related to these issues. The examination was to include what is known about how organizations establish, maintain, lose, and regain public trust and confidence. There was be no attempt to develop consensus on these issues or to suggest particular courses of action.

The workshop was held on October 24-25, 1991 in Denver, Colorado. The invited participants included:

Frank Dobbin, Department of Sociology, Princeton University, Princeton,
New Jersey;

Carol Heimer, Department of Sociology, Northwestern University, Evanston,
Illinois

W. Richard Scott, Department of Sociology, Stanford University, Stanford,
California;

Barry Staw, Business School, University of California at Berkeley, Berkeley,
California;

Mark C. Suchman, Department of Sociology, Stanford University, Stanford,
California; and

Craig Thomas, Institute of Governmental Studies, University of California at
Berkeley, Berkeley, California

In addition Task Force members Todd LaPorte, Department of Political Science, University of California at Berkeley, Berkeley, California and Mayer N. Zald, Department of Sociology, University of Michigan, Ann Arbor, Michigan as well as Daniel Metlay from the SEAB staff also participated. Rob Coppock, National Research Council, Washington, DC was the project director. Finally, observers from the Department of Energy and its contractors were present as observers.

MEANING OF TRUST

Trust has been an issue of interest for hundreds of years. In this century, psychologists in the late 1940s and early 1950s were quite interested in the role of trust in communications, particularly as it related to the credibility of the source and persuadability. During the last 20 years, a large literature on the issues of distributive justice and equity has developed. In the last 5 years, interesting work on trust can be found in the literature on procedural justice.

Until relatively recently, the literature on trust has dealt primarily with individual trust. It is only in the past decade that the literature has treated trust in organizations. In fact, organizational theory literature has little to say about trust, except on the intraorganization level (e.g., trust between employer and employee). The social science literature which is applicable to trust in organizations can be divided into four categories-- trust in a fiduciary relationship, trust as an alternative to contracts, trust versus cooperation, and trust as a means for reducing complexity.

In a fiduciary relationship, trust is placed in another to act on one's behalf without taking advantage of his or her position. Bella (1987) has argued that professional trust (a type of fiduciary relationship) is not so much trust in the personal integrity of the individual professional as it is trust in the social processes governing the profession. Rigorous education, peer reviews, and conformance to a code of ethics, for example, are signs to the public that the profession does not define its responsibilities solely through self-interest.

A large literature exists on trust and contracts as the two basic means which facilitate all exchanges. There is a dispute over the extent to which the two complement each other or are alternatives to each other. If every contingency can be planned for in the contract, there is no need for trust. Because it is impossible in most circumstances to specify every contingency, there is, as a backdrop to contracts, trust that each party will act according to expectations not specified in the contract. In fact, contracts presuppose trust between the contracting individuals and in the legal system which backs them up. By contrast, the need to specify contracts may signal a lack of trust.

In the psychological literature, there have been attempts to study trust through the use of games in an experimental setting. Sociologists argue that what game theorists are really studying is cooperation, not trust, although cooperation is

probably indicative of the presence of trust.

A relatively recent approach to trust in the sociological literature argues that trust is necessary to reduce complexity. Trust is seen as the expectation that others will comply with the rules of daily life. It is developed through familiarity with the past behavior of others. Trust differs from confidence, in that trust presupposes a situation involving some risk. Without trust, even routine interactions would be both complex and risky. Thus, the relevant question for any organization is not "How can we produce trust?" but rather "How can we increase trust or maintain the trust we already have?"

If trust (or distrust) is developed through familiarity with past behavior, keeping information from people may lead to a lack of trust. Covering up minor errors undermines trust; if people are exposed to the minor errors and their remedies, they are likely to have more confidence in the ability of the agency to handle problems. Suppression of information about small accidents causes expectations to be falsely raised. Further, the literature on perception and evaluation of risks shows that people accept risks better when they feel they have some control. Being deprived of information yields a feeling of lack of control.

In organizational theory literature, a distinction is made between trust and legitimacy. It is a useful distinction because confidence comes from legitimacy. Organizations gain legitimacy by being part of a broader institutional structure and by acting in accordance with a legal framework. Legitimacy exists to the extent that some higher authority backs one up. Trust is a broader notion which comes into play when information about the object of trust is lacking. It is conceptually possible to have trust without legitimacy, and vice versa. The trustworthiness of organizations may be evaluated on the basis of their processes, their outcomes, or both.

Legitimacy is undermined by the increasing conflictedness of the legal and political structures. Recently there has been conflict in the public arena about proper models for decision making, as well as contested bases of authority. This both decreases the legitimacy of the process and increases maneuverability.

SOURCES OF TRUST

Zucker (1986) identified three different types of trust by how they are produced. The three types of trust are characteristic-based, process-based, and

institution-based. Characteristic-based trust depends upon the characteristics of the individual participants. It has to do with congruence of values, that is, this person is like me and so has my interests at heart. Process-based trust may incorporate characteristics, but is produced through repeated interactions. It frequently involves "symbolic exchanges" rather than economic ones. Institution-based trust is produced through formal social structures such as professional certification and regulation. As society becomes more complex, institution-based trust supplants characteristic-based and process-based trust. Examples are trust in the legal system, trust in professional standards, or trust in organizational form.

Some of the differences in the types of trust may be due to different enforcement mechanisms as you move from interpersonal situations to formal organizations. A problem in the institutional setting is that an enforcement mechanism may simply be another layer of institution in which one must place trust. The literature on regulation in the public sector shows that people are skeptical of self-regulation, even though it may produce a better control system than external regulation. The public also sees a lack of technical professionalism in government. Ahearne, former chair of the NRC, has complained that the people who have the ultimate decision-making power in government lack technical understanding. A good example of this occurred in the Challenger accident where the best technical advice was disregarded by the political heads.

Another factor in the interactions between public institutions and the public is the development of the mediating interest group. A good discussion of this development [and their consequences for decision processes and outcomes] can be found in *The Organization State* by Laumann and Knoke (1987).

OBJECTS OF TRUST

Organizational planning may be a source of distrust. In planning for a disaster, for example, organizations often use what Lee Clarke (n.d.; 1991) refers to as fantasy documents in the early stages. These fantasy plans may include incorrect assumptions, exaggerations of the efficacy of a solution, no or little experiential data back-up, and assumptions of perfect functioning by social systems and human actors. While fantasy planning may be necessary early in the process, organizations that resist modifying these plans to accommodate different assumptions or refuse to

collect additional data, are unlikely to make their plans more realistic over time. Further, if the early plans contain too much fantasy, the public may dismiss them and never go back to see that later plans have been made more realistic.

It is important to remember while discussing objects of trust that it is often a subpart of an organization that is trusted or distrusted, but the reputation of the subpart tends to generalize to the whole organization. The public thinks of organizations as consisting of tightly coupled subparts. In reality, most organizations are much more decentralized and loosely coupled. Therefore, organizations are more likely than individuals to act in contradictory ways; that is, various parts of an organization may say and do different, contradictory things. This is seen by the public as dishonesty, when it is simply routine organizational performance due to decentralization.

Similarly, on the individual level, the public looks for consistency. There is a poorer public perception of leaders who are inconsistent than of those who are consistent, even if the consistency is to an idea that doesn't work. People may also look for consistency or stability within the organization, e.g., the same spokesperson or leader over time.

Because of the need for flexibility where new technologies and scientific uncertainties are concerned, there is danger of appearing inconsistent or contradictory. Focusing on the goal rather than the means of achieving the goal may be one way to avoid seeming inconsistent.

The public has more confidence if a central person appears to be in charge in times of danger or adversity. The more dramatic an outcome, the more likely the outcome will be attributed to the leader of an organization. When the outcome is negative, this attribution to the leader makes it difficult for that person to correct the problem. Those who are seen as part of the problem are not trusted to fix it.

There is a literature that shows that people's estimates of probability have a lot to do with salience and personal control. People overestimate the frequency of large disasters. They are inherently over-optimistic about their own abilities, so have more trust in something they feel some control over. Hands on experience leads to a perception of control. In Sweden, where there is little controversy over nuclear waste disposal, school children are routinely taken on tours of their nuclear waste sites. Public tours of Yucca Mountain have been successful in allaying fears. In fact,

issues of equity, stigma, and taking on other's burdens are more problematic in the siting process at Yucca Mountain than is risk *per se*.

When the public is divided into groups who define trust differently, an organization may have to rely on procedural legitimacy. People recognize that there are a plurality of interests and points of view. When all sides can come before a neutral person or body and all opinions are granted an opportunity to be heard, there is a perception of procedural legitimacy. Trust can be built up in the process, rather than in specific outcomes.

Organizations also try to tailor their messages to the audience by using different language or different explanations. However, this must not involve contradictory statements, for that will undermine trust. In this age of mass media and information sharing, contradictory statements are bound to become apparent quickly. In all cases, the information should be accurate.

Accuracy is not enough, however. Particularly when dealing with communicating information about risks, many things besides magnitude of the risk come into play. For example, distributional equity, the vividness of examples, and a host of other affective aspects affect the way people react to risk comparisons.

In organizational systems literature, the older models were vertically integrated organizations. Newer models of organizations, however, involve partnerships between formerly independent partners yielding a network-like structure. Such systems, when effective, are often embedded in a larger structure that helps sustain the network. In the United States, the legal system serves as the model for this larger structure, in which legitimacy is based on process. The separation of authority in the US federal system can present procedural problems. There is no collective voice speaking in the general interest. In fact, American political dialogue privileges individual interests rather than the general good.

In American political culture, both inclusiveness and fairness contribute to legitimacy of the process. One's place in society affects how one sees the process. Groups on the fringe serve a sentry function on low level, long-term risks. Groups which are more central are more concerned with the prevention of societal shut-down. One way to deal with this is to have representatives from all different aspects take part in the decision process, but one can't expect to reach consensus in that situation.

The analysis of social movements shows that there are parts of social movements who want to get something done. They tend to isolate the fringe. Even among the fringe, there is a continuum of points of view. Small group dynamics research tells us that the last thing we want is to have only mainstream thought. Minority views often represent important aspects of the truth. Interest groups should be regarded as an important resource rather than obstacles.

RISK

There is a distinction between risk and uncertainty. People's concerns about things nuclear has more to do with uncertainty than risk. People worry that the numbers and examples used by experts are fictional because of scientific uncertainty. Public reaction to ozone loss and global warming has similarities to the threat of nuclear disaster. They all represent a possibility of fundamentally changing life as we know it, and people don't know how to talk or think about that.

Public discourse frequently doesn't distinguish between risk and hazard. Risk is the degree of the hazard times the probability that the hazard will occur. A large hazard with low probability of occurrence equals a low risk. Using this definition of risk, and then trying to compare risks ignores the other issues that are important to people when they think about hazards.

Perceptions change over time. (See for example a book by Weart on nuclear images.) From the days when there was talk of "atoms for peace" and of nuclear power producing electricity that was "too cheap to meter," today the word nuclear is seen so negatively that it was dropped from "nuclear magnetic resonance imaging" to make this medical procedure sound more acceptable. Perhaps linking "nuclear waste" with positive ends or images would be helpful. For example, nuclear waste storage is needed to clean up the mess that exists now. On the other hand, there are interest groups who are opposed to solving the nuclear waste issue precisely because it removes one objection to the continuing development of nuclear power. Interestingly, the federal government's position for a number of years was that nuclear waste was a problem that had to be solved regardless of the future of nuclear power. Recently, Admiral Watkins has begun linking nuclear waste disposal to the future of nuclear power plants.

Public trust must be seen in the historical context of the flow of issues. There

is an evolution to how events and issues gain momentum. Timing is very important. One issue can become connected with other issues simply on the basis of arriving at the same time, and issues activate organizations. This is best described by the garbage can model of organizational decision making (Cohen, March and Olsen, 1972). Even though this is a retrospective analysis, one can develop projections based on things that have happened in the past.

A problem for government agencies is that there are few political ways to ensure that Congress will keep promises 50 or 60 years in the future, let alone for the thousands of years a nuclear waste disposal facility will be around. One solution is to remove the decisions from the political process. Nearly twenty years ago, Alvin Weinberg argued that we needed a dedicated core of nuclear "priests" to stand guard over nuclear waste. In fact, we do have institutions that are insulated from the political process to safeguard certain areas, for example, the Federal Reserve Board and the Interstate Commerce Commission.

There is a variance in levels of confidence across institutions and over time. Support for nuclear power in the United States has been steadily declining since the late 1960s even at times when confidence in the government increased. In reviewing cross-national data on people's satisfaction with contact with government agencies, Godsell, Hasenfeld, and Zald found that people were generally satisfied with routine contacts with "helping" agencies and dissatisfied with routine contact with "punishing" agencies. For example, across countries no one was satisfied with contact with the police or tax agencies.

TRUST AS A PROCESS

When dealing with maintaining trust over the lifetime of a facility, particularly one as long lived as a nuclear waste repository, it is important to look at trust as a process. For technical organizations, output is important in establishing trust and legitimacy. A factor in the output is how stable and known the technology is. The newer and less certain the technology, the more difficult it is to build trust in the organization.

For an institutional organization, control and standardization of processes contributes to trust. An institutional organization is legitimate to the extent to which it conforms to the accepted framework in the particular society. For example, does

the institution have an appropriate structure and appropriate personnel? Does it comply with appropriate procedures? Unique organizations have a difficult time attaining legitimacy. Part of good managerial skill is to know when and in what ways it is all right to deviate from the norm.

GAINING AND LOSING TRUST

Short-run strategies for gaining trust include such things as filling boundary-spanning positions (the people who serve as a link between the organization and its exchange partners and publics) with people with characteristics that match the audiences'. For the longer term, reliance on professional norms and standard procedures is important.

Routinizing the technology may help. For example, one could build a number of small, low-level underground storage facilities as they have done in Sweden. Familiarity removes some of the fear. Gaining and maintaining trust is somewhat different than losing and regaining it. Major mechanisms for dealing with loss of trust are to establish a review board or to reorganize the institution. If the reputation of an organization is very poor, it may take a whole new agency to solve the problem. If loss of trust is due to differences in values (e.g., the interests of the organization are different than the interests of those being asked to trust it), it may be very difficult to gain or regain trust. Shared decision making or incorporating some of the other's values may help. For example, in *Making Bureaucracies Think* (1984), Taylor details how environmental impact statements have changed organizations by internalizing and institutionalizing environmental concerns. The reporting requirements for toxic chemicals have changed production processes in chemical companies. Psychology literature on small group process shows that having minority input has an impact. Even after the minority representative is no longer in the group, the minority interests are taken into account.

INDICATORS

In organizational theory, determining effectiveness requires the development of criteria (what are the relevant dimensions?), setting standards, selecting indicators, and performance sampling (Dornbusch and Scott, 1975). Indicators are only one piece of the evaluation process.

Some easy indicators of whether an organization is doing a credible job or not are 1) monitoring complaints, 2) the number of legal suits, 3) monitoring demonstrations and collective disorders, and 4) the number and nature of Congressional hearings. For the Task Force, the issue seems to be not only about storage of nuclear waste, but about all things nuclear. An indicator of changing attitudes could therefore be the use of the word "nuclear" in popular press and media. Passive monitoring of this sort is needed to supplement public opinion poll information. When one talks with people directly, one not only monitors opinion, one helps to create it.

In many organizational fields, there is widespread reliance on structural indicators such as capacity for performance or qualifications of personnel. These may be assessed by certification or accreditation. In looking to organizational literature, keep in mind that efficiency does not equal trust. Being very efficient but performing in ways counter to the public interest may be very bad in the public's view. Indicators have a downside as well. They almost always lead to displacement of effort in an organization.

In the nuclear waste repository issue, the trouble with technical indicators is that it will take so long to know whether the technology is working. Probes could be placed into the repository to monitor chemical processes, but the chemical processes are so slow that it would take hundreds of years to tell what's happening. Therefore, other aspects of the total system must be monitored as well (e.g., transport above ground). It may be more important for purposes of increasing trust to monitor institutional processes than technical ones.

An advantage of the organizational perspective is that it recasts the public/private discussion. All organizations, be they public or private, are subject to various regulations. There are mixtures of partnerships between public agencies and private subcontractors. In fact, Superfund consists almost entirely of private contractors. Whether it is an advantage to let the public know the extent of private subcontracting is not settled. In most instances one would expect a private organization to be seen as more efficient, but not necessarily more trustworthy. One can look at the public opinion survey data on attitudes towards business versus government. Most analysts would agree that you don't subcontract out something that is very important to your outcome.

When dealing with an institution such as the nuclear waste repository whose

outcomes entail a large risk at sometime in the distant future, trust must be gained through standard operating procedures to collect and analyze the data as time passes. The institution can only do the best it knows how today while ensuring a process to track what's happening so interventions can be taken if something goes wrong and changes can be made to take advantage of new technical or scientific information. An analogy can be made to the Egyptian crypts where the wealth was buried and faith put in a "technical" solution (the pyramid), versus the Catholic church which relied on institutional processes to retain its wealth and power. Most of the Egyptian crypts have been plundered; the institutional approach has worked fairly well for the Catholic church.

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INSTITUTIONAL LEGITIMACY
IN THE PUBLIC SECTOR:
A SYNOPSIS OF RECENT RESEARCH

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This report examines recent work on the legitimacy of government institutions. Much has been written about how nation-states gain legitimacy, how particular governing regimes gain legitimacy, and how certain government agencies and policies gain legitimacy. Common themes run through this literature, but there are nonetheless important disagreements about how government institutions achieve legitimacy and what sorts of impediments they face. The aim of this report is not to adjudicate among theories, but to highlight the insights offered by different social science approaches to the problem. The focus is on American government institutions.

Max Weber explored the issue of governmental legitimacy in historical context. Early forms of government depended upon either charisma or tradition to gain legitimate authority, but Weber argued that with the advent of rationality governments came to depend on rational-legal authority, which is sometimes called bureaucratic authority. Under systems of rational-legal authority, legitimacy stems from the existence of a set of value-rational rules governing the accession to power. Those rules guarantee that the persons best qualified will be placed in positions of authority. In short, legitimate domination rests "on a belief in the legality of enacted rules and the right of those elevated to authority under such rules to issue commands" (Weber 1978, p. 215). Legitimacy ultimately rests in the authority of a set of rules which bind decision-makers (Merquior 1980; Murvar 1985). Neo-Weberian approaches are covered in the section on culture and legitimacy, below, but it is important to note that Weber's notions serve as a common starting point for the different approaches covered below.

Weber is concerned with how legitimate authority is produced. Those who study legitimacy in modern polities suggest that it can be challenged on the basis of the *process* of decision-making, or on the basis of the *outcome* — the policy or institution chosen. This distinction will help to organize the discussion that follows.

Most analysts have examined the issue of the legitimacy of government organizations from a cross-national perspective, and this is the case for methodological reasons outlined by Émile Durkheim. To understand the cause of any outcome (e.g. institutional legitimacy) we must look at several cases which vary both on the outcome and on the hypothesized cause. It is also important to control for other possible causal factors, and this is accomplished by choosing cases with different

outcomes and differences in the hypothesized cause, which are similar on most other dimensions. Two research strategies are consistent with these methodological imperatives. One is to compare several institutions within a single nation, thereby controlling for most national factors but not for sectoral factors. Another is to compare parallel institutions across similar nations, thereby controlling for sectoral factors but only controlling partially for national factors. Thus many of the studies discussed below make comparisons either across institutions or across nations.

Each of the subsequent sections covers a specific research tradition, and concludes with implications for American governmental institutions in the nuclear energy sector. A number of the research traditions reviewed here have more to suggest about the contours of the problem of organizational legitimacy than they have to suggest in the way of remedies.

CRITICAL THEORY

At the most general level, social scientists interested in institutional legitimacy have examined the mechanisms that afford legitimacy to modern democratic states. As noted, Weber's concern with the underlying logics of social systems led him to treat the issue in broad historical terms. Critical theorists offer another perspective on how modern states gain sufficient legitimacy to govern societies — how they sustain adequate allegiance and devotion among citizens. For them, political order is not to be taken for granted as the normal state of affairs, but is a problem to be explained. Critical theorists emphasize contradictions between the economic and ideal functions of the modern state (Habermas 1975: 1979: Offe 1984; Weiler 1981). Habermas argues that the state must simultaneously serve economic functions by promoting economic growth and capital accumulation and serve legitimacy functions by promoting social justice and the well-being of the populace. In modern democratic nations, it is argued, these two roles become increasingly irreconcilable as business groups concerned with growth press for reduced taxes and state promotion of industry, and citizen groups concerned with the well-being of the disadvantaged press for increased public expenditures on social programs and regulation of business activities. The underlying dilemma here is that failure to achieve the goal of growth leads to economic stagnation and decline, and failure to achieve social well-being and distributive justice leads to a loss of legitimacy and, potentially, to political disarray.

Habermas predicts that given current constraints, this contradiction will increasingly lead to legitimacy crises for modern states. He finds that when caught between a rock and a hard place, modern states pursue economic growth at the cost of the public well-being and social justice, and that this in turn leads to a general crisis of state legitimacy. In contrast, James O'Connor (1973; 1984) contends that this contradiction leads the state to pursue both goals simultaneously, which results in a fiscal crisis of the state.

Jurgen Habermas, Claus Offe, and James O'Connor share a conception of state policy — as driven both by technological changes and by a need to maintain legitimacy by protecting the public trust — that speaks directly to the issue of the contradiction between technological progress and the perceived threats to the public well-being that result from technological advances. Their analyses offer useful insights for the issue at hand. One corollary of their arguments is that government institutions that aim to promote growth, but that threaten the well-being of citizens, will be most likely to pose problems of legitimacy. However the perspective offers little in the way of pragmatic suggestions. These authors contend that governments must attempt to steer a middle course between economic and social issues, but are fundamentally pessimistic about the capacity of states to do so as technological advances increasingly come into conflict with the issue of public well-being.

INTEREST GROUP APPROACHES

The most prevalent postwar approach to understanding the legitimacy of modern democratic governments, and the legitimacy of their policy choices, is interest group theory (Truman 1951; Lowi 1969). The basic premises of this approach are shared by political theorists from the left and the right, however the two approaches have very different implications for the issue of legitimacy. In brief, interest group theory depicts policy-making as a process of conflict between competing interest groups. Among pluralists this approach can be traced back at least to Weber's (1978) writings from early in this century which noted the rise of competing political groups based on cleavages other than class. In this tradition, legitimacy in democratic systems results from participatory decision-making and the free expression of ideas. Among neo-Marxists the approach can be traced back to the *Eighteenth Brumaire* (1963), written over a century ago, in which Marx mapped out the competing elite

factions that struggled for control of the French state under Louis Philippe. In this tradition, governments gain legitimacy by representing the interests of the dominant class as those of society at large. In both versions of the theory, policy decisions are posited to reflect the relative power of different groups.

Recent developments in political science have, for the most part, remained faithful to the basic precepts of this approach. Rational choice theory suggests that interests can be objectively determined, and that behavior can be modelled with the techniques of micro-economic analysis; however rational choice theorists continue to believe that policy decisions result from power struggles among groups with different objective interests (Tsebelis 1990; Elster 1986). The new coalitional approach is concerned with how different subgroups assemble, fall apart, and reassemble to create coalitions that back particular policy directions (Gourevitch 1986; Ferguson 1984). Coalitional theorists are more concerned with how winning coalitions emerge and how interests are aggregated at the subnational level than with conflicts between groups that have already stated their preferences, however their focus is on the same interest group processes have concerned political scientists in the past.

We now turn to the liberal and radical variants of interest group theory and their implications for the legitimacy of government institutions.

PLURALIST THEORY

Pluralist theory is, at once, a social science perspective on modern government and a variant of modern political philosophy. Pluralists view the state as an arena of political conflict among competing interest groups (Beer 1965; Kariel 1961; LaPolombara 1964; Lowi 1969; Truman 1951). As social scientists, pluralists analyze decision-making by evaluating the relative power of competing interest groups with inconsistent policy goals. As political philosophers, pluralists contend that in large complex societies a process of free interest group formation and conflict, within the confines of constitutional ground rules, produces democratic governance.

One of the central tenets of pluralist thinking is that under modern democracies, politics "ceases to be an epiphenomenon of socioeconomic life" (Lowi 1969, p. 45). In the United States, more than elsewhere, this has meant that broad class-based political groups have to some extent been supplanted by narrow interest-based political groups. By contrast, in some European polities class is still the basis of political

affiliation. The growth of narrow interest-based political groups exacerbates political contentiousness and makes the problem of achieving legitimacy more difficult. Where politics is organized around large class-based parties, contention tends to occur at the point of platform-development. By contrast, where politics is organized around narrow interest-based groups, dedicated to issues such as abortion (Staggenborg 1991; Luker 1984) and nuclear energy, more of political conflict occurs in the public view. Moreover where interest-based politics prevails, major political parties have no capacity to control fringe political groups. Indeed, in the United States, interest-based political action committees have become vital funding sources for political candidates and parties (Sabato 1984; Sorauf 1984).

Another relevant insight from pluralist political theory is that the legitimacy of American governing institutions stems from the commitment, outlined in the Constitution and Bill of Rights, of the state to protect the rights of individuals and groups to articulate and pursue their ideas and interests. Policies gain legitimacy from a process whereby all interests are freely expressed, and then a compromise is reached among conflicting parties in the decision-making process. Constitutional safeguards protect against the tyranny of the majority, and against abuses of power by office-holders.

This political philosophy creates certain intractable problems of governance (Dogan 1988). To wit, the right to free speech is taken to be inalienable and civil disobedience is taken to be protected under that right (Bedeau 1969). Sanctions against it are weak. For normal political decision-making this is not particularly problematic, but for certain high-salience issues free speech protections enable minority oppositional groups to thwart the process of policy implementation. For instance, in the cases of anti-abortion activism and anti-nuclear activism groups have been able to undermine public policies. The problem here for American policy-makers is that efforts to restrain civil disobedience are delegitimizing. By contrast, in democratic polities that place relatively more emphasis on effective policy promulgation and relatively less emphasis on free speech, civil disobedience is less of a problem.

RADICAL INTEREST GROUP THEORIES

One variant of the interest group approach springs from a tradition which holds that the ultimate purpose of the state is to foster the legitimacy of, and thereby sustain, a social system that advantages some citizens and disadvantages others. At the core of the Marxist perspective is the notion that the state is an institution of class coercion, and hence that it is by nature illegitimate. "At a definite stage of economic development, which necessarily involved the cleavage of society into classes, the state became a necessity because of this cleavage" (Engels 1942, p. 158). Elites introduced states as instruments of domination, and thus the history of the state is the history of class conflict.

The ancient state was, above all, the state of slave-owners for holding down the slaves, just as the feudal state was the organ of the nobility for holding down the peasant serfs and bandsmen, and the modern representative state is the instrument for exploiting wage labour by capital. (Engels 1942, p. 157)

The central idea here, that the state poses a potential danger to democracy to the extent that it sides with one particular interest group, came to shape pluralist thinking in political science and in political philosophy (Galbraith 1952).

This tradition offers some important insights about the importance of state autonomy for state legitimacy. "Capture" theories of politics suggest that modern states are, in effect, instruments of the business community. The structural Marxist view employs a subtle distinction: it is in the interest of state managers to promote economic growth, and this just happens to coincide with the interests of the capitalist class as a whole (Poulantzas 1980, p. 127; Therborn 1970, p. 7).

The rhetoric of capture theories has been adopted by oppositional interest groups because it resonates with traditional American anti-statist sentiments. One of the main tools of interest groups that hope to delegitimize policy outcomes is to argue that "special" interest groups have had undue influence on policy-making, and that this is evidenced by the outcome itself. Such arguments are difficult to falsify because they argue backward from outcome to process.

In sum, radical thinkers differ with pluralists because they do not think the

state is a neutral arbitrator among competing groups that gains legitimacy from its neutrality. For radical thinkers, the state originated as a means of class domination, and remains an interested party in the political process. Whereas for pluralists the state embodies "fundamentally consensually based legitimate domination," for radicals it embodies "fundamentally coercive domination" (Skocpol 1979, p. 25). To the extent that oppositional groups embrace this second interpretation, they have difficulty thinking of any state policy as legitimate.

DECISION-MAKING AND AGENDA-SETTING

Some of the most important studies of process legitimacy have appeared in the form of critiques of interest group theory. Peter Bachrach and Morton Baratz (1962) address the issue of political decision making from the perspective of agenda-setting. They argue that it is not appropriate to take the political decision process at face value, because an important part of the decision process is obscured. The policy-making process occurs at three distinct levels. The first, which is most often studied by policy analysts, is the level at which choices are made from a set of alternatives (e.g. the decision to locate a nuclear waste dump in a particular state). The second is the level at which policy alternatives are generated (e.g. the set of alternative waste disposal strategies is articulated). The third is the level at which the political agenda is set in the first place (e.g. the decision to find a policy solution to the problem of nuclear waste disposal). Steven Lukes' (1974) work on legitimacy addresses a similar critique to the interest group approach. In essence, these approaches suggest that the groups with the legitimate authority to influence the agenda, and the groups with the authority to offer alternatives, exercise power by constraining the decision process.

In practice, powerful groups confer legitimacy on the policy directions they favor by shaping the political agenda. They may accomplish this in any policy realm by defining the political agenda in terms of lower-level technical policy decisions, rather than higher-level decisions about strategy. The appearance of democratic rule is sustained, and legitimacy is created, by a process which in principle allows for the consideration of all policy alternatives but which in practice allows consideration of only a narrow range of alternatives by excluding most alternatives from the agenda. Thus, for instance, the agenda-setting approach would suggest that government

agencies manage to keep the issue of whether to continue to produce nuclear energy from appearing on the national political agenda, while bringing to the agenda such technical issues as that of how to dispose of nuclear waste.

Such manipulation of the agenda leads to problems of legitimacy when groups actively seek goals that call for an altered agenda. It is common for disenfranchised political groups to challenge lower-level policies when they have no legitimate authority to place higher-level policies on the political agenda. For instance, anti-nuclear activists seek to achieve the higher-order goal of closing down nuclear energy production by fighting lower-level proposals for waste disposal. Their goal, of course, is to undermine waste disposal decisions as a strategy for preventing the proliferation of nuclear plants. In fact, their goals vis-a-vis the lower-level issue of waste disposal are not incompatible with the goals of the Department of Energy: anti-nuclear activists, too, would like to see the lower-order problem resolved safely.

To a large extent, the strategy of challenging lower-level decision processes to achieve higher-level goals represent an effort to challenge current agenda-setting arrangements. Theory would suggest that conflicts over lower-order agenda-setting can be mitigated by opening the higher-order issue to public debate. In short, by allowing interest groups to participate in agenda-setting, governments might thwart the strategy of using lower-order filibustering to affect the higher-order agenda.

NEO-CORPORATISM:

A STRUCTURAL SOLUTION TO INCREASING CONTENTIOUSNESS

In 1974 Philippe Schmitter published a paper titled "Still the Century of Corporatism?" that outlined a growing trend toward corporatist forms of interest integration in Western European states. Corporatism refers to political systems that integrate representatives of business, labor, and other groups into state decision-making bodies whose scope usually covers wages, labor, industrial, and economic policies (cf. Almond 1983; Berger 1981; Lehmbruch and Schmitter 1982; Panitch 1986; Wilensky and Turner 1987; Wilson 1983). Analysts of neo-corporatism argue that governments have adopted neo-corporatist structures in order to confer legitimacy on the policy-making process, and on policy outcomes themselves. To some, the formal incorporation of the main interest groups in public decision-making processes is simply a means of coopting groups that are prone to dissent. Others are

less cynical, but agree that these structures serve to dampen conflict by assuring affected groups a voice in the decision process.

Corporatist structures, in which governmental decision-making bodies include elected representatives of labor groups, business associations, and other affected interest groups, have become increasingly common in European democracies during the post-war period, but have not appeared in the United States. Analysts have suggested that these structures have not appeared in the United States in part because labor groups have little political power there, and thus business-labor conflicts seldom result in political stalemate (Almond 1983). If these structures can, as analysts argue, help to reduce inter-group conflicts, they provide a model for consensus formation, and the promotion of legitimacy, in a wide number of contentious policy arenas, including energy policy and environmental policy. In the realm of waste management, for instance, interested groups might be given voting positions on a board that makes final waste siting decisions. Evidence from European nations would suggest that such a strategy could actually overcome stalemate.

INSTITUTIONS AND OUTCOME LEGITIMACY

Institutionalists have a different way of understanding how policy decisions are made, and how government institutions gain legitimacy. They have focused on the administrative constraints existing policy instruments place on the adoption of new policy instruments. Some institutionalists draw on a social learning model to understand the issue of legitimacy. Policies gain legitimacy when they appear to serve the functions they are intended to serve. Novel policy strategies seldom gain legitimacy, because they are frequently undermined by inappropriate administrative capacities. Thus they generally fail to be carried out in the first place.

Institutional theorists of government make the important point that state administrative capacities delimit practicable policy alternatives for the future (Krasner 1984; March and Olsen 1984). By administrative capacities they refer to the entire state bureaucracy and its organizational resources: expertise, experiences with past policies, administrative structures, etc. Institutionalists have convincingly shown that state policies may not change substantially over long periods of time due to the inertia of state institutions (e.g. Krasner 1978) and the availability of those institutions to solve new problems (Ikenberry 1988). Douglas Ashford argues: "The

state is governed more by its previous decisions, its internal organizational and institutional constraints, and its own agenda, however we suspect these may be formed, than by external forces" (1977, p. 572). They have also shown that policy innovations are frequently thwarted by weak or inappropriate administrative capacities (Skocpol and Finegold 1982; Skowronek 1982).

The institutional paradigm in political theory is broadly organizational in orientation, emphasizing the administrative resources states possess to carry out new policies. The modern intellectual roots of this approach may be traced to Selznick's seminal study of the Tennessee Valley Authority (1949), which suggested that institutions develop inertia of their own and engender constituencies that support their survival.

Institutional capacities positively shape policy in some very direct ways. At the most fundamental level, government realms that hold substantial authority and resources are most likely to tackle new problems. For instance, in the U.S. power and resources are concentrated in state and local governments, and this may explain why American states and localities take important policy initiatives. Some of the more interesting institutional analyses have focused on how public and private sector organizations often grow up together, and influence the range of practicable policy alternatives for the future (Zysman 1983). In the nuclear energy sector, for instance, the decision to locate nuclear energy production in the private sector was in part a response to earlier decisions to make electricity production part of the private sector. In turn, new energy policies are, more or less, constrained to maintain nuclear energy production in the private sector (Campbell 1991).

The issue of state administrative capacities is important because institutionalists suggest that novel policy solutions that expand state capacities will fail to gain legitimacy not for normative reasons, but because they will fail administratively and thus will not be reinforced in the public mind as effective solutions. For them, legitimacy is a pragmatic issue. And most agree that in the United States, the administrative capacities of the central government are uniquely weak.

Most early institutional studies were concerned with how weak state capacities undermined novel sorts of policy strategies. For instance, Skocpol and Finegold (1982) describe how America's weak bureaucracy thwarted the promulgation of the National Industrial Recovery Act in the 1930s. Stephen Skowronek (1982) highlights

institutional constraints that undermined central policy coordination in three different American sectors. These works suggest that new state policies that expand the role of the state in society will frequently fail as a matter of organizational incapacity. They will, therefore, never have the chance to gain legitimacy. These insights are directly pertinent to the issue of building new state agencies to serve new, and complex, functions. They suggest, for instance, that had a federal agency successfully built and operated nuclear power plants, that agency might now have sufficient legitimacy to gain the trust of Americans in assuming the task of disposing of nuclear waste. In the absence of such an agency, it will be difficult to build such legitimacy for a new agency. More broadly, to the extent that the federal government has had few positive experiences with administering large-scale programs with complex technologies, the public bureaucracy has amassed insufficient expertise, and legitimacy in its technical role, to take charge of future programs. Here the issue is legitimacy in part at the level of bureaucratic expertise — do we think they can do it?

Comparative analyses support this conclusion. A number of studies have found that states with past histories of implementing technically complex and interventionist policies, which have in the process developed administrative expertise, are most likely to succeed at adopting new interventionist policies (e.g. Zysman 1977; Zysman 1983; Katzenstein 1984; Katzenstein 1986). These authors tend to concur that the United States has particularly weak administrative capacities, for identifiable historical reasons (Skowronek 1982), and that new policies are thus most likely to fail there. John L. Campbell's (1988; 1991) work on the history of nuclear energy policy in the United States combines insights from this perspective with interest group analysis to understand the trajectory of policy.

Under what circumstances can state administrative capacities be enlarged? From the institutional perspective, the problem of building a new bureaucracy is not so much one of garnering legitimacy for the unit, as gathering the expertise and organizational resources that will allow it to succeed. What can cause administrative capacities to be enlarged, so that states can tackle problems of greater complexity than they have attempted before? Stephen Krasner (1984) proposes a "punctuated equilibrium" model of state behavior to understand how state capacities may be enlarged. He argues that institutional forms appear in response to system crises and gel until new crises usurp them.

Institutional change is episodic and dramatic rather than continuous and incremental ... During periods of crisis politics becomes a struggle over the basic rules of the game rather than allocation within a given set of rules. However, once crises are past institutional arrangements tend to rigidify. Institutions reproduce themselves and respond more to their own needs than to those of their domestic society or the international environment. (Krasner 1984, p. 234)

Krasner argues that particular difficulties in implementing policies tend to lead to incremental solutions that may not be effective (see also Skowronek 1982), but that major system crises such as wars and economic depressions may lead to wide-ranging changes in the administrative capacities of the state. In the case of the nuclear energy sector, Krasner's thesis would suggest that the state's administrative capacities and technical expertise in the sector will probably not expand significantly until the nation faces a larger crisis that causes the federal bureaucracy to expand more generally. In Krasner's model, only system-level crises elicit significant changes in state capacities. On a more positive note, most institutionalists believe that state capacities can be expanded incrementally with some success. This would suggest that the Department of Energy might expand its legitimacy in the field of nuclear energy by gradually expanding its role in the operation of nuclear power plants, perhaps with the longterm aim of taking them over.

SOCIAL LEARNING THEORY AND THE DEVELOPMENT OF INSTITUTIONAL LEGITIMACY

To explain why certain policies become institutionalized and gain legitimacy, a number of institutionalists have adopted a "social learning" approach (Heclo 1974; Etheredge 1985; Hall forthcoming), which suggests that policy-making involves a process of trial and error, in which policy makers and citizens learn which policies work and which don't. Policies that coincide with success (the desired outcome) gain legitimacy, but those that fail to be successfully implemented or that coincide with failure never achieve legitimacy. Ronald Inglehart has generalized the argument to suggest that regime legitimacy depends on effectiveness, in terms of economic goal attainment: "Effectiveness over a long period of time may be the surest way to produce legitimacy, insofar as it leads to the emergence of a public that has absorbed

enduring positive orientations toward the regime during early socialization” (1990, p. 16).

Institutional approaches to politics suggest that policies gain inertia if the administrative capacities of the state are well suited to them. If the state, for instance, has had experience in administering similar policies. The social learning camp holds that, in turn, the policies that are sustained gain legitimacy, which suggests that policies that gain legitimacy are those that are well suited to the administrative strengths of the government. For instance, state-run nuclear reactors gained legitimacy in France because the state had extensive experience administering complex public organizations, employed many of the nation’s technical experts, and thus succeeded at building and operating nuclear reactors. By contrast, government regulation of nuclear reactors in the United States has failed to gain legitimacy in large measure because the state had little expertise in regulating complex industries, and has predictably failed to enforce regulations (David et al. 1991). The idea of state control of vital industries was legitimated by the French experience with nuclear reactors; whereas the idea of public regulation of complex industries was delegitimated by the American experience with nuclear regulation. Those experiences have palpable effects on future policy directions. Charles Perrow’s (1984) work on the control of high-risk technologies, including nuclear technology, is directly pertinent to this process.

PROCESS LEGITIMACY AND INSTITUTIONAL CHARACTERISTICS

Differences in how political institutions allocate legitimate authority over decisions influence legitimacy processes directly. Alexis de Tocqueville (1945; 1955) noted important structural differences between democratic states in the nineteenth century, and related differences in how legitimacy is achieved. Some political structures contribute to the resolution of controversial policy issues at the national level by locating legitimate authority over policy choices in the central government; by contrast other political structures contribute to the resolution of controversial policy issues at the local level by locating legitimate authority there.

Political systems that are unitary and parliamentary locate legitimate authority over policy decisions, by and large, at the center. Party leaders make important policy choices, and party members vote in accord with those decisions, at both the

national and local levels (Ashford 1981; 1982). By contrast, political systems that are federal (hence decentralized) and presidential locate legitimate decision authority in individual politicians. Party platforms establish only broad common principles.

One important implication of this research is that under presidential and federal systems, there is substantial intra-party conflict over decisions and state officials and federal legislators tend to vote along *regional* lines as well as *party* lines. This is in large part a result of different political realities, for under a federal and presidential system, politicians are beholden, to a much greater extent, to local interests. In the United States, governors and members of congress have substantial autonomy from their parties, yet they are highly dependent on regional groups for both funding and votes (Shefter 1977). One result of this system is that neither members of congress nor governors have much to gain by supporting policies that are vociferously opposed by constituent groups. This is particularly true of high salience issues, such as nuclear waste disposal siting, that tend to elicit strong negative sentiments on one side and indifference on the other. The high-salience issue of abortion, by contrast, elicits strong sentiments on both sides, and may lead pragmatic politicians to weigh one side against another.

In a political system where legitimate authority over the course of policy is situated in party leadership, it is much more difficult for political opposition to policies that have regional implications to thwart policy-making (Crozier 1973). On the one hand, members of parliament can vote for policies that are not in the interest of their region with relative impunity. On the other hand, provincial and local governments seldom have veto power over policy choices.

In the American context, the federal government has always had full legitimate authority over certain policy realms, notable the mails and the military. This suggests that one way to expand the legitimate federal authority over nuclear energy and nuclear waste would be to bring these policy domains under the control of the Department of Defense. If nuclear waste disposal could be defined as an issue of national defense, rather than as an issue of local nuisance, then the appropriate level of decision authority would, more clearly, be the federal government. Paradoxically, Washington has for many years sought to disentangle the issues of nuclear weapons and nuclear energy, to garner support for the latter.

CULTURE, IDEOLOGY, AND LEGITIMACY

In recent years, work on political culture has addressed the issue of legitimacy directly. The following pages review several of the recent trends.

POLICY PARADIGMS AND INSTITUTIONAL LEGITIMACY

In recent years social scientists have paid more attention to the cultural facet of modern state institutions, by asking how certain policy strategies gain acceptance. Much of this work draws on the social constructivist approach developed by Peter Berger and Thomas Luckmann and on Thomas Kuhn's work on scientific paradigms (Berger and Luckmann 1965; Kuhn 1970; Jensen 1989; Hall forthcoming; Dobbin forthcoming). The approach has some broad similarities to the social learning perspective outlined above. Public policies carry certain logics of action. To the extent that public policies appear to achieve their goals, they cause policy-makers and citizens to believe in those logics. Setting aside the issue of whether public policies actually have the effects they are intended to have, which is often impossible to gauge, it is clear that they contribute to collective understandings of how the world works. As Peter Hall has recently argued, public policies are linked to

an overarching set of ideas that specify how ... problems ... are to be perceived, which goals might be attained through policy, and what sorts of techniques can be used to reach those goals. Ideas about each of these matters interlock to form something like a coherent whole that might be described as a policy paradigm. Like a gestalt, it structures the very way in which policy-makers see the world and their role within it. (forthcoming 13)

This sort of approach has been popular in Britain, where social scientists have had difficulty explaining the problems Governments have come up against in their efforts to replace traditional growth policies, which were clearly not working, with new policies modelled on those of successful nations. Britain's postwar economic decline led both Labour and Conservative governments to experiment with interventionist industrial planning schemes, only to see those schemes fail (Wilks 1983; Grant 1982; Curzon Price 1981). Analysts have suggested that these failures are linked to the difficulties associated with creating legitimacy for policies that are fundamentally

at odds with existing social constructions of the role of the state.

The implications of this perspective are similar to those of the social learning perspective. In nations with market-oriented public policy paradigms, such as the United States, it may be difficult to garner legitimacy for institutions that involve state management of industry, or any sort of active federal role. The policy paradigm approach differs from the social learning approach in that it suggests that legitimacy is more a matter of cultural scripts for the role of the state, or other institutions, than a matter of institutional learning. From a pragmatic perspective, the policy paradigm approach suggests that to achieve legitimacy for their policy programs, they should model policies on the existing paradigm. Thus, for instance, in the United States the government should privatize the matter of waste disposal and open up the process to competitive bidding, just as it has done with nuclear energy production. This would be, in effect, the most direct route to gaining legitimacy for the agency that governs the nuclear energy sector. Transforming the policy paradigm to one in which the state plays a more central role in society would be a much greater task.

THE ROLE OF POLITICAL CULTURE

Recent work on broader political cultures suggest that these paradigms extend beyond particular policy domains. Social science theories of the role of political culture in the production of legitimacy have undergone a sort of revolution in the last two decades. Early works (e.g. Almond and Verba 1963) on political culture suggested that political systems reflect aspects of national character — individual-level personality traits that are shared by national groups. This perspective suggested that regimes gained legitimacy by achieving isomorphism with traits of the national character, thus in nation-states where citizens have authoritarian personality types, authoritarian regimes gain legitimacy. By contrast, in nation-states where individuals have anti-authoritarian personalities, regimes must follow suit to gain legitimacy. That perspective would suggest that we must look at characteristics of individuals to understand legitimacy processes.

However that perspective has been largely discredited as reductionist and anti-sociological in the political science and sociological literatures. Students of culture have suggested, more recently, that a Durkheimian perspective, in which individual consciousness is the product of social structures, is more appropriate for understand-

ing the relationship between political culture and institutional legitimacy (Douglas 1986). In contrast to interest group perspectives, this perspective suggests that institutional legitimacy process may have more to do with *shared* cultural understandings of the appropriate role of government institutions than with the *idiosyncratic* political ideologies of interest groups.

Recent constructivist approaches to political culture have suggested that our notions of what is politically appropriate are shaped very much by our experiences with existing political institutions. Moreover to the extent that those experiences are shared, our notions of what is politically appropriate transcend interest group boundaries. In political theory, such insights have been developed in work that examines the institutional factors that influence the development of new political philosophies (e.g. Ashcraft 1986). In anthropology, these insights have been furthered by studies that search for aspects of political culture that are derived from institutional arrangements rather than from group interests (Douglas 1986; Anderson 1983; Geertz 1980). In sociology, these insights have been developed by those working on the institutional rules of behavior that transcend nation-states (e.g. Thomas and Meyer 1984). An important study of nuclear energy policy from this perspective is James Jasper's *Nuclear Politics* (1990), which explores the role of cultural meaning in the nuclear policies of the United States, Sweden, and France.

These studies suggest that modern, rationalized, political cultures carry, at their cores, certain representations of means-ends relationships in the world, which act as prescriptions for how to solve certain problems. The nature of those prescriptions varies across nations. Broadly, the representations they carry are demystified, universalistic, trans-historical, and scientific (Wuthnow 1987, p. 45). Mary Douglas (1986) argues that these representations must carry analogies to the natural world, for instance the social system might be analogous to a human organism with different functional parts and a central brain, or to the kind of ecological system described by Darwin. William Sewell Jr. argues that ideology actually consists of these representations of the world that are shared by contentious interest groups. In contrast to the usual formulation, in which ideologies are adopted deliberately by individuals who aim to reform social systems, he insists that ideology should be seen as "anonymous, collective, and constitutive of social order" (1985, p. 84).

These works point to an important characteristic of American political culture

and ideology that has posed problems in the past for the legitimacy of activist public policies. Analysts of American political culture have suggested that in it, the state is analogous to a referee. The institutionalized role of the state is to oversee relations between actors in civil society without assuming charge of the nation's course. Thus the Department of Energy faces not only the usual problem of opposition from political groups who are ideologically opposed, in the narrow sense, to its goals. It also faces legitimacy problems from the population at large, because political culture does not afford a legitimate role for the state as conservator of the public trust. In the U.S., policies that place the state in the role of referee are much more likely to gain legitimacy than those that place the state in the role of caretaker of the public trust.

In the construction and operation of nuclear power plants, Congress overcame this problem by privatizing the process and placing the state in the role, once again, of referee. Government agencies set standards for plants, and allowed private concerns to bid for construction contracts. The American state has replicated this role in a number of other sectors that other countries have brought under state control: e.g. arms production, the construction of space vehicles, air transport, and communications. The double bind in the case of waste disposal is that American political culture limits the legitimate role of the state to that of referee among competing interests (or competing contractors), but Americans are also distinctly suspicious of the reliability of private sector concerns. The problem of legitimacy is thus exacerbated in sectors where mistakes are extremely dangerous or costly. In addition, the state's ability to regulate the private sector is suspect in American political culture: the state is incompetent on the one hand and corrupt on the other.

Work on policy paradigms as well as recent constructivist approaches to political culture suggest that the problem of gaining legitimacy for American state agencies that seek an active role in the development and implementation of complex, dangerous, technologies is, at its core, a problem linked to America's overarching understanding of the role of the state in society. Both of these approaches suggest that notions of state legitimacy are difficult to alter, and that an approach which molds new state institutions (e.g. a nuclear waste disposal program) to existing public policy models is more likely to succeed than one that attempts to reshape political culture by establishing legitimacy for an alien sort of state institution.

FEDERALISM AND POLITICAL CULTURE

We have already covered, in a cursory way, characteristics of American state structure and political ideology that affect the development of institutional legitimacy. It is clear that American anti-statist notions have undermined the development of active federal institutions, charged with vital civilian responsibilities, throughout this century. Instead, legitimate governmental authority in the American context has been, to a much greater extent, located in local governments.

John Meyer and W. Richard Scott have argued that modern nation-states offer differing accounts of rationality and authority, and in the process locate legitimate authority differently. In centralized regimes, legitimate decision authority is located only in the central government. Local governments retain little or no autonomy, are not locally elected, and follow the dictates of the central state. At the opposite extreme is the United States, with a regime that was, as Tocqueville suggests, built upon autonomous self-governing localities. States and the federal government merely provide a structure within which localities can govern themselves.

While the legitimate authority of even local governments to control civil society has waned, the early years of the republic were characterized by active localism — state and local governments energetically orchestrating economic growth and investing in enterprises. As Seymour Martin Lipset argues, “The doctrine of ‘laissez faire’ became dominant only after the growth of large corporations and private investment funds” (1979, p. 52). In the early decades of the nineteenth century state and local governments invested directly in canals, turnpikes, banks, railroads, and factories (Hartz 1948; Goodrich 1949; Callender 1902; Handlin and Handlin 1947; Lipset 1979, p. 114). Here is Andrew Shonfield, “At times the degree of tutelage which state governments arrogated to themselves in Jacksonian America appears so extreme that it suggests the direct inspiration of Colbert, rather than anything that belongs to the Anglo-Saxon tradition” (1965, p. 303). Were those policies an aberration?

In fact, these policies were not inconsistent with early American political culture because they did not involve the state in using its powers of coercion against citizens. In this century the state has, indeed, found it difficult to promulgate activist policies, but that has largely been because most activist policies engender opposition. What was unique about early policies to promote growth is that they seldom faced

opposition. Evidence from this century also suggests that activist government is not inherently illegitimate in the United States, but coercive government is. Thus the state has not faced major legitimacy problems in the federal takeover of passenger railroad transport (Amtrak), or of freight rail service (Conrail), although as other transport sectors have expressed opposition to federal subsidies, the legitimacy of these programs has been called into question. Perhaps the best recent example is NASA, which has no natural opponents, with the exception of interest groups who would prefer to have NASA's budget put to other uses.

In short, American political thought has always opposed the unnecessary use of the state's powers of coercion, but has not always opposed state activism if it treads on no one's toes. One important corollary is that the concentration of authority must be avoided. As Eugene Rostow argues, American "policy is always to avoid concentrations of authority ... Capitalism stands with federalism, the separation of powers, the disestablishment of religion, the antitrust tradition, the autonomy of educational bodies ... in expressing a deep suspicion of authority" (1959, p. 43).

Meyer and Scott (1983) argue that American political institutions, which came close to the localistic ideal-type, have become increasingly centralized since World War II. The rationale for centralization was often that local governments tend to exercise their authority illegitimately by mistreating minorities and the poor and by favoring "special interest" groups (1983, p. 205). Consequently, a form of central federal authority has been legitimized, which consists of procedures and inducements: "hiring, funding, technical procedures, goals, control and inspection systems, and so on" (1983, p. 208). The growth of procedural controls, however, has not been accompanied by the growth of substantive powers to dictate to state and local governments. Local self-rule remains sacrosanct, while the federal government has elaborated the framework within which local decisions can be made.

These arguments highlight the principal difficulty in establishing institutional legitimacy for federal policies that affect localities directly, and unequally. To attain legitimacy, policies such as nuclear waste siting decisions must use positive inducements to cause affected state and local governments to favor them, rather than coerce them to do so. This follows from Meyer and Scott's arguments: to attain legitimacy new institutions must conform to the accounts offered by existing institutions (i.e. they must locate sovereignty in local governments).

Federal decision-makers face a paradox here, however. Weber's notion of value-rational authority suggests that decisions such as that about nuclear waste siting must be made on entirely technical grounds to attain legitimacy. However Meyer and Scott's characterization of American political culture suggests that siting decisions must be made on political grounds. That is, the waste siting decision must depend on the ability of the federal government to provide adequate inducements to some location to accept the waste dump. If inducements could be found that would make any locality accept the site, the problem of political legitimacy could be overcome because the most technically sound site could be chosen without opposition. But because some locations could not be induced to accept the site at any price, the decision process will inevitably appear to be politicized.

This problem is intractable. However it suggests that decision-makers have two alternatives. One is to proceed by ranking possible sites, and offer a set of inducements to each locality, in order of preference, until one is found that will accept the site. This politicizes the process and will generate legitimacy claims. Another is to forgo inducements by making the siting decision on purely technical grounds. This avoids the risk of politicizing the process, but runs the risk of eliciting legitimacy claims over the authority of the state to dictate to localities.

CONCLUSION

How, in a nation-state where the public does not trust the government to run the post office or to operate the telephone system, can government institutions gain sufficient public trust and legitimacy to administer the potentially disastrous nuclear waste disposal problem? The enormity of the problem is not difficult to comprehend, however different social science perspectives on governmental legitimacy have very different implications about the source of the problem, and possible remedies. In concluding, we review the nature of the problem of governmental legitimacy from various perspectives, and the strategies for achieving legitimacy that those perspectives would suggest.

For critical theorists, the state achieves legitimacy primarily by promoting social justice and the well-being of citizens, and secondarily by promoting economic growth. States risk losing legitimacy to the extent that they appear to favor growth over the nation's well-being. Conversely, states gain legitimacy to the extent that

they favor social justice and the well-being of citizens over business interests. From this perspective, a federal agency that conspicuously acted against business interests would be advantaged in terms of gaining institutional legitimacy. This might be achieved, for instance, by taxing utilities at exorbitant rates for the disposal of nuclear waste, and by refusing to allow utilities to pass the costs along to consumers.

From a variety of non-radical interest group perspectives, including pluralist theory, rational choice theory, and coalitional theory, government institutions attain legitimacy by allowing all interested parties to participate in the policy-making process, and by ensuring that policy outcomes represent the will of the majority. However, for certain high-salience issues, such as that of nuclear waste disposal, interest group theorists have suggested that participatory politics may preclude the promulgation of new policies and the development of legitimacy for those policies. Agenda theory suggests that this may occur as interest groups displace their higher-level goals in an issue area by pursuing lower-level goals that can influence the higher-level goals: e.g. anti-nuclear groups try to preclude the development of a waste disposal solution to halt the proliferation of nuclear energy plants. This might suggest a prescription of putting the future of nuclear energy policy up for grabs, in order to achieve consensus on the issue of nuclear waste disposal and legitimacy for the decision-making process. Neo-corporatist theory would suggest that for contentious policies, process legitimacy can be achieved by formally incorporating representatives of interested groups into the policy-making process. This would involve establishing a body to decide nuclear waste disposal issues with representatives of anti-nuclear groups, the nuclear energy industry, the Department of Energy, and perhaps other groups.

For radical interest group theorists, democratic nation-states are, by definition, illegitimate because they support the interests of capitalists rather than those of society at large. For them, democratic states achieve legitimacy by representing the interests of the nation as a whole to be consistent with the interests of the business class. To achieve legitimacy in this way, policy-makers might reframe the issue of waste disposal as an issue of national economic competitiveness or national defense. This could make nuclear waste disposal a national, rather than industry-based, issue. Alternatively, this perspective would suggest that if nuclear power plants were nationalized, groups would not see the matter as a struggle between interested business

groups and consumers with meager political resources.

Institutionalists suggest that it is difficult for governments with weak administrative capacities, such as the federal government of the United States, to establish institutional legitimacy for agencies with complex technological tasks. For them, expanding state administrative capacities will facilitate the process. One approach would be to incrementally expand the reach and powers of the Department of Energy, to effect a process of social learning — of positive experience with active government. Krasner, by contrast, suggests that only system-level crises can elicit real changes in administrative capacities; policy-maker should wait for such a crisis and take advantage of it to expand the administrative capacities of the agency.

Students of state structure suggest that the location of legitimate authority in a political system is largely a matter of the structure of the state. From their perspective, it is difficult to establish legitimacy for top-down policies in federal nation-states, particularly where those policies affect localities differentially. Short of rewriting the American constitution, one strategy for achieving legitimacy for federal policies is to situate them in a policy realm that is indisputably part of the federal role. In the American case, this might mean taking nuclear energy and waste disposal policy out of the hands of states and localities by locating it in the Department of Defense. A compromise solution might be to make the Department of Energy fully responsible for all of the nation's energy production.

The policy paradigm approach, and recent work on political culture, suggest that to attain legitimacy, new policies must reflect the logic of the existing policy paradigm. This strategy arguably contributed to the legitimacy of the nuclear energy production policy of the federal government: in accord with America's traditional industrial policy paradigm, the sector was privatized and plant construction was subject to market principles. The federal government's paradigmatic role was that of regulator. Thus from this perspective, the federal government can best achieve legitimacy for a nuclear waste disposal program by employing America's regulatory, market-oriented, policy paradigm. This might mean allowing private firms to prepare proposals for nuclear waste disposal, and subjecting the process to competitive bidding. It might mean devising a way to put the Department of Energy in the role of regulator, rather than administrator, of the waste disposal program.

Finally, recent work on federalism and political culture suggests that the

federal government faces two, perhaps irreconcilable, issues in the development of legitimacy for a nuclear waste disposal program. On the one hand, complex technological decisions must be made on entirely technical grounds to gain legitimacy. On the other hand, in the American political context it is illegitimate for the federal government to dictate to localities; Washington is limited to regulating local activity and providing inducements to local governments. The paradox that arises is that Washington must provide inducements to convince state and local governments to accept a nuclear waste dump, however by doing so Washington breaks the rule of making the siting decision on purely technical grounds. In short, the capacity of state and local governments to refuse to accept a waste site precludes the Department of Energy from making the decision on purely technical grounds. Thus policy-makers are left with two alternatives, both of which risk legitimacy challenges.

This report has surveyed different social science perspectives on the issue of the legitimacy of government institutions. If the conclusions are inconclusive it is because no effort has been made to adjudicate between competing perspectives on the issue of legitimacy. Indeed, these perspectives offer different, complementary, insights into the dimensions of the process of the development of legitimacy.

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ON THE CONTROL OF LEGITIMACY
IN ORGANIZATIONAL LIFE:
STRATEGIC AND INSTITUTIONAL APPROACHES

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Early theorists tended to view formal organizations as “rational systems” (Scott 1987:31-50) -- social machines designed to efficiently transform inputs of resources and labor into outputs of goods and services. In addition, this intellectual tradition tended to depict organizations as tightly-bounded entities clearly demarcated from their social environments. Resources materialized at factory gates, production technologies revealed themselves to engineers, and products evaporated off loading docks, all *ex hypothesi*. In the 1960s and 1970s, however, this imagery began to change dramatically. “Open system” theories (Scott 1987:78-92) reconceptualized organizational boundaries as porous and problematic, arguing that environmental forces often exert profound impacts on the structure of internal operations and on the prospects for organizational survival. Institutional and cultural theories expanded this critique by noting that many of these external forces have little to do with technological imperatives and much to do with societal norms, symbols, beliefs and rituals.

As researchers have broadened their theoretical ambit beyond the organization’s technical core (Thompson 1967), new concepts have emerged and old concepts have been re-tooled in order to address previously-slighted aspects of organizational life. At the heart of this enterprise lies the concept of “organizational legitimacy.” Drawn from the path-breaking work of Weber (1968) and Parsons (1960), legitimacy has become the centerpiece of a vastly expanded theoretical apparatus focussing on the normative and cognitive forces that constrain, structure and empower organizational actors. Indeed, the concept of legitimacy anchors sociological treatments of topics ranging from organizational credibility to organizational autonomy, from strategy to structure, from innovation to conformity.

This paper reviews the most salient elements of this refurbished understanding of organizational legitimacy. The discussion is divided, broadly, into three parts: Part I offers a basic theoretical introduction. This introductory section defines legitimacy, identifies a number of ambiguities in conventional usages of the concept, and delineates two divergent veins of scholarship (the “strategic” and the “institutional”) that have contributed to the growing body of relevant theory and research. Part II of the paper builds on this introduction by examining three main types of organizational legitimacy: pragmatic legitimacy, moral legitimacy and cognitive legitimacy. Although these three legitimacies co-exist in most real-world settings, each rests on a distinct behavioral logic, and the three are rarely entirely consistent. Pragmatic,

moral and cognitive legitimacy are not, of course, equally prevalent in all settings, and Part II closes by briefly examining the environmental conditions that may bring one or another of these dynamics to the fore. In Part III, the discussion turns from the conceptual task of describing legitimacy to the more practical task of addressing the legitimation challenges inherent in organizational management. Since the problems of gaining legitimacy, maintaining legitimacy and repairing legitimacy are somewhat distinct, this section examines each separately and outlines a number of responses suggested by the existing literature. Practical treatments of legitimation are sparse and often speculative, however, and the paper ends with a number of caveats for the would-be social engineer. Although hardly comprehensive, this closing discussion sketches several types of unintended consequences, inadvertent oversights and unexpected feedback loops that may plague attempts to manipulate organizational legitimacy in a narrowly instrumental way.

Having come only recently to a recognition of the importance of symbolic elements in organizational life (see Scott 1991:165; Pfeffer 1981), organizations theorists still have a long way to go in unraveling the mechanics of organizational legitimacy. Nonetheless, the existing literature is substantial, and a number of general patterns are beginning to emerge. This paper reviews that literature in the hope of highlighting those patterns in a meaningful and productive way. Organizational legitimacy is becoming increasingly well understood, and while this understanding may not yet support detailed strategic prescriptions, at least it suggests general guidelines for action -- and approximate boundaries beyond which action may be difficult if not impossible. For an organization facing a conflicted cultural environment, both of these pieces of information may well prove crucial.¹

THEORETICAL INTRODUCTION

Within contemporary organizations theory, legitimacy is more often invoked than described, and more often described than defined (cf. Terreberry 1968:608). This section addresses these issues in the reverse order. The discussion begins by defining legitimacy. It then describes several ways in which ambiguities about the purposes of legitimation may cloud discussions of the mechanics of legitimacy. The premise here is that the question "what is legitimacy?" often overlaps with the question "legitimacy for what?" Finally, the section closes with an examination of two

distinct rhetorics through which theorists have invoked the concept of legitimacy -- one "strategic," and the other "institutional."

DEFINING LEGITIMACY

Over the years, organizations theorists have offered a number of definitions of legitimacy, with varying degrees of specificity. Parsons (1960:175) provides a classic, but somewhat amorphous definition of legitimacy as the "appraisal of action in terms of shared or common values in the context of the involvement of the action in the social system." Maurer (1971:361) narrows the definition and gives it a hierarchical, pragmatic and explicitly evaluative cast, asserting that: "Legitimation is the process whereby an organization justifies to a peer or superordinate system its right to exist, that is to continue to import, transform, and export energy, material or information." Pfeffer and his colleagues (Dowling & Pfeffer 1975; Pfeffer 1981; Pfeffer & Salancik 1978) define legitimacy similarly, but focus on the organizational activities from which it springs:

Organizations seek to establish congruence between the social values associated with or implied by their activities and the norms of acceptable behavior in the larger social system of which they are a part. Insofar as these two value systems are congruent, we can speak of organizational legitimacy. (Dowling & Pfeffer 1975:122)

Meyer and Scott (1983; Scott 1991) also see legitimacy as stemming from a congruence between organizations and their cultural environments; however, these authors focus more on the cognitive than the evaluative side -- organizations are legitimate when they are *understandable*, rather than when they are desirable:

Organizational legitimacy refers to the degree of cultural support for an organization -- the extent to which the array of established cultural accounts provide *explanations* for its existence. (Meyer & Scott 1983:201, emphasis added; see also DiMaggio & Powell 1991)

In the discussion that follows, this paper adopts an inclusive, "broad-tent"

definition of legitimacy that incorporates both the evaluative and the cognitive dimensions of previous treatments, and that adds a more explicit recognition of the role of the social audience (cf. Perrow 1970; Neilsen & Rao 1988). An organization may differ dramatically from societal norms yet retain legitimacy because the divergence goes unnoticed. Thus, we can define legitimacy as *a generalized perception or assumption that the actions of an entity are proper, valid or appropriate within some socially-constructed system of norms, values, beliefs and definitions*. Legitimacy is “generalized” because it represents an umbrella perception that, to some extent, transcends specific adverse acts or occurrences; legitimacy is, in this sense, resilient to particular events, yet dependent on a history of events. Legitimacy is “socially-constructed” because it represents a congruence between the behaviors of the legitimated entity and the shared (or assumedly shared) beliefs of some social group; legitimacy is, in this sense, relative to a collective audience, yet independent of individual observers. Thus, when we say that a certain pattern of behavior (be it an institution, an organization or a policy initiative) possesses “legitimacy,” we are asserting that some group of social actors accepts and/or supports that pattern as a whole -- despite reservations that any given actor may have about any given behavior.

LEGITIMACY FOR WHAT?

In thinking about organizational legitimacy, it is important to recognize that organizations may seek legitimacy for a number of reasons, and that conclusions about the importance, difficulty and effectiveness of legitimation efforts may depend on the yardsticks by which these activities are measured. Four particularly important dimensions in this regard are (a) the distinction between pursuing persistence goals and pursuing credibility goals, (b) the distinction between addressing internal audiences and addressing external audiences, (c) the distinction between seeking passive support and seeking active support, and (d) the distinction between displaying culturally-congruent attributes and masking culturally-divergent attributes.

Persistence versus credibility: Legitimacy enhances both the stability and the comprehensibility of organizational activities. However, organizational behaviors rarely foster survival and meaning in equal degrees.

Legitimacy leads to persistence because audiences who perceive an organiza-

tion as “proper, valid or appropriate” are more likely to support that organization by supplying necessary resources (Parsons 1960). Moreover, to the extent that legitimacy reflects embeddedness in a system of institutionalized beliefs and action-scripts (see Part II, below), organizational activities become almost self-replicating, requiring little investment in mobilizing either support or cooperation:

[When social patterns are institutionally legitimated] their persistence is not dependent, notably, upon recurrent collective mobilization, mobilization repetitively re-engineered and reactivated in order to secure the reproduction of a pattern.... Rather, routine reproductive procedures support and sustain the pattern, furthering its reproduction -- unless collective action blocks, or environmental shock disrupts, the reproductive process. (Jepperson 1991:145)

In essence, legitimacy flips the valence of the “collective action” problem (Olson 1965): Cooperation in support of the institutionalized activity is built into the structure of everyday life; only opposition poses a prisoner’s dilemma (Jepperson 1991:148, 151; cf. Zucker 1988:33 ff.).

At the same time, legitimacy affects not only how people act toward organizations, but how they understand them, as well. Thus, audiences see the legitimate organization not only as more worthy, but also as more meaningful, more sensible and more *trustworthy*. Part of the cultural congruence captured by the term “legitimacy” involves the existence of a credible collective “account” of what the organization is up to and why. As Meyer and Rowan (1977:50) put it:

Organizations described in legitimated vocabularies are assumed to be oriented to collectively defined, and often collectively mandated, ends....On the other hand, organizations that omit environmentally legitimated elements of structure or create unique structures lack acceptable legitimated accounts of their activities. Such organizations are more vulnerable to claims that they are negligent, irrational or unnecessary.

Jepperson (1991:147), too, captures an element of legitimacy-as-credibility when he defines “institutional legitimation” as “[having] taken for granted rationales.”

Since the behaviors that enhance persistence are not always identical to the behaviors that enhance credibility, it is important to keep these two dimensions of legitimacy conceptually distinct. Nonetheless, it is also important to recognize that the two are generally mutually-reinforcing. In most organizational settings, “shared understandings are likely to emerge to rationalize the patterns of behavior that develop, and in the absence of such rationalization and meaning creation, the structured patterns of behavior are likely to be less stable and persistent.” (Pfeffer 1981:14).

Internal versus external audiences: As noted above, legitimacy is always relative to some audience, and this audience may reside either within or beyond the formal boundaries of the organization. As Pfeffer observes, legitimacy-management “is directed both internally, to produce organized collective action, and externally, as part of a process of legitimating the organization in its larger social context” (Pfeffer 1981:21). With respect to internal legitimacy, Pfeffer (1981:1) suggests that “a critical administrative activity involves the construction and maintenance of belief systems which assure continued compliance, commitment, and positive affect on the part of the participants regardless of how they fare in the contest for resources.” In support of this assertion, one might cite O’Reilly & Caldwell’s (1979) demonstration that job satisfaction often reflects social perceptions rather than objective task qualities, or Zucker’s (1977) evidence that legitimated office-holders often enjoy an enhanced ability to transmit task definitions.

Despite the obvious significance of this kind of internal legitimacy in supporting organizational activities, most of the following discussion will center on the relationship between the organization and various *external* audiences (including the populace as a whole). This focus accords with the dominant thrust of the literature to date, which generally sees internal and external legitimacy as being closely aligned. As Meyer & Rowan (1977:49) note, “incorporating externally legitimated formal structures increases the commitment of internal participants and external constituents.” Nonetheless, it would be a mistake to conclude that the legitimation always works from the outside in. Pfeffer (1981:24), for example, describes the demise of the UC-Berkeley Criminology School as an example of a situation in which internal dissensus delegitimated the organization in the eyes of important external audiences.

While internal and external legitimacy often cohere, their demands do not

necessarily pull in the same direction. This is particularly true when highly-professionalized organizations face crises of public confidence. Often, the kinds of outside scrutiny and oversight that might reassure external audiences undercut the autonomy and decentralized decision-making that form the basis for internal morale. As Meyer and Rowan (1977:59) note, "Evaluation and inspection are public assertions of societal control which violate the assumption that everyone is acting with competence and in good faith. Violating this assumption lowers morale and confidence." Admittedly, this trade-off between morale and credibility represents something of a special case; but it also serve as an important reminder that internal audiences may not always welcome opportunities to improve the organization's external standing.

Passive versus active support: A third important but under-acknowledged distinction turns on whether the organization is seeking active support or passive acquiescence. If all that an organization needs from a particular audience is for that audience to leave it unmolested, the threshold of legitimation may be quite low. Simply comporting with the parameters of some unproblematic category of social activity (e.g., "doing business") will generally suffice. If, on the other hand, an organization seeks protracted audience intervention (particularly against another institutionalized actor with competing cadres), the legitimacy demands may be stringent indeed.

Here, we may see one ramification of the aforementioned definitional distinction between legitimacy as cognitive taken-for-grantedness and legitimacy as evaluative approval (a distinction developed further in Part II, below). Compare, for example, the disparate images of legitimacy in the following quotes (with emphasis added) from Meyer & Rowan:

The incorporation of institutionalized elements provides an account...of activities that *protects the organization from having its conduct questioned*. The organization becomes, in a word, legitimate. (1977:50)

[Legitimizing] myths present organizations with great *opportunities for expansion*. Affixing the right labels to activities can change them into *valuable services* and *mobilize the commitments* of internal participants and external constituents. (1977:51)

To avoid questioning, an organization need only “make sense”; to mobilize commitments, it must also “have value” -- either materially or as a crucial bulwark against impending non-sense.

Displaying congruence versus masking divergence: This final distinction rarely appears in the existing literature on legitimacy, yet it represents a crucial differentium for any legitimacy-enhancement strategy. Illegitimacy can arise either because the organization’s activities, structures or values diverge from those of its audience, or because the audience mistakenly *believes* they do. When a congruent organization confronts misperceptions (or, similarly, ignorance), its primary task is educational. Essentially, it must find a technique for attracting scrutiny without appearing over-anxious, opportunistic or self-aggrandizing (see Part III, below). Divergent organizations face far higher hurdles. For them, the minimum challenge is to distract inquiring audiences from deviant activities without inviting additional attention. This diversion may only be necessary for a brief time, while the organization brings itself into alignment with the prevailing order; however, more often than not, the demands of internal legitimation lock the organization into ongoing organizational deviance and, hence, into ongoing obfuscation. Sometimes an unfortunate divergent organization will find itself in need of active rather than passive support, and when this happens, legitimation becomes an exercise in either evangelism or fraud -- often among highly skeptical infidels. When considering the legitimation strategies outlined in Part III, readers would do well to bear in mind this distinction between proving that you are good, hiding that you are bad, and pleading the virtue of your vices.

STRATEGIC AND INSTITUTIONAL APPROACHES TO LEGITIMACY

The recent literature on organizational legitimacy falls fairly neatly into two distinct camps, one “strategic, the other “institutional.” The strategic approach, associated most notably with the work of Jeffrey Pfeffer and his collaborators (Pfeffer 1981; Dowling & Pfeffer 1975; Pfeffer & Salancik 1978), begins with the proposition that “one of the elements of competition and conflict among social organizations involves the conflict between paradigms, defined as systems of belief or points of view” (Pfeffer 1981:9). Strategic-legitimacy research adopts a manage-

rial perspective (Nielsen & Rao 1987) and addresses the techniques by which a focal organization can manipulate and deploy cultural symbols in order to enhance legitimacy and garner societal support. Works in this tradition tend to view legitimacy as an "operational resource" (Suchman 1988) that organizations extract from their environments and employ in pursuit of their goals:

Since organizational survival is enhanced by legitimacy, legitimacy can be viewed as a resource which a given focal organization attempts to obtain and which, occasionally, competing organizations may attempt to deny." (Dowling & Pfeffer 1975:125; see also Ashforth & Gibbs 1990:177)

In discussing legitimation, strategy researchers often assume a fairly high level of managerial control, explicitly contrasting the management of cultural constructs -- where leadership is held to be essential -- to the management of "tangible, real outcomes" such as "sales, profit margins, capital budgets and other allocations" -- where "leadership does not matter" (Pfeffer 1981:5). As Nielsen & Rao put it:

The implicit message [of the strategy literature] seems [to be] that organizational leaders have near monopolistic control over the interpretive process and that they determine the limits to their control." (1987:524)

Interestingly, this sharp distinction between symbolic and substantive activities leads strategy theorists to predict fairly overt conflicts between managers and constituents over the form of legitimation activities:

All else equal, managers prefer to offer symbolic assurances rather than substantive action, since the former usually preserves flexibility and resources. Constituents, of course, usually prefer the reverse.... Resource dependence theory would suggest that, generally, the greater the power, motivation and political skill of the constituent, and the more consistent the constituent's preferences are with those of other key constituents...the more likely management is to offer a substantive rather than symbolic response." (Ashforth & Gibbs 1990:182)

In contrast to this strategic tradition, institutional research (Meyer & Rowan 1977; DiMaggio & Powell 1983; Meyer & Scott 1983; Zucker 1987; DiMaggio & Powell 1991) sees legitimacy not as an operational resource, but as a set of constitutive beliefs (Suchman 1988). Organizations do not simply extract legitimacy from the environment in a feat of cultural strip-mining. Rather, the institutional environment constructs and interpenetrates the organization in every aspect. Cultural definitions determine how the organization is built, how it is run and, most importantly, how it is understood. Legitimation empowers organizations by making them meaningful; access to resources is mostly an epiphenomenon. Thus, to the institutionalist, "explaining" a popular managerial strategy by showing how it allows organizations to obtain support from constituents is akin to "explaining" the institution of marriage by showing how it allows couples to obtain tax breaks from the Internal Revenue Service.²

This institutional imagery depicts a strong and constraining symbolic environment, in which managerial behaviors (including strategy) are constructed by the same belief systems that determine audience reactions. Indeed, in many institutional accounts, the constant flow of values and understandings between internal and external audiences seems to erase the intervening organizational boundaries. Rather than examining the strategic legitimation efforts of focal organizations, institutionalists tend to emphasize the collective "structuration" (DiMaggio & Powell 1983) of entire "fields" or "sectors" of organizational life -- health care, education, publishing, nuclear power. Further, the distinction between symbolic and substantive outcomes fades into insignificance when one sees organizations, managers, careers, performance measures and audience demands as being both products and producers of larger, institutionalized cultural matrices.

This paper attempts to steer a middle course between the strategic and the institutional orientations. On the one hand, like the strategy literature, it addresses the dilemmas that a focal organization may face in managing its symbolic relationship with demanding constituents. In particular, Part III, below, unabashedly assumes that organizations can and do formulate strategies for fostering legitimating perceptions of propriety, validity and appropriateness. On the other hand, like the institutional literature, this paper sees cultural environments as fundamentally constitutive of organizational life, and it adopts a fairly skeptical attitude toward the autonomy,

objectivity and potency of managers. The discussion that follows identifies a number of types of legitimacy, some more manipulable than others; but it also recognizes that legitimation is more than mere smoke and mirrors. Organizations obtain legitimacy when a dominant belief system makes their activities seem plausible and necessary. Managers can enunciate supportive myths and prescribe congruent rituals; but they can rarely convince others to believe much more than they believe, themselves.

THREE TYPES OF ORGANIZATIONAL LEGITIMACY

Within the existing literature on organizations, one can discern three broad types of legitimacy, which might be termed “pragmatic” legitimacy, “moral” legitimacy and “cognitive” legitimacy. All three involve generalized perceptions or assumptions that organizational activities are proper, valid or appropriate within some socially-constructed system of norms, values, beliefs and definitions; however, each rests on a somewhat different behavioral dynamic. This section will outline each of these dynamics, in turn, and will identify a number of subtypes within each major category. Finally, the section will close by briefly examining a typology of organizational environments that offers predictions about when the various legitimation dynamics are likely to expand or diminish.

PRAGMATIC LEGITIMACY

The first, and arguably the most simple, type of legitimacy rests on the self-interested calculations of audiences who are in immediate contact with the focal organization. Often, this contact takes the form of direct exchange relations; however, it can also take the form of political, economic or social interdependencies in which the actions of the organization visibly affect the well-being of the audience. When such exchanges and interdependencies exist, constituents are likely to scrutinize organizational behaviors in order to determine the practical consequences of any given line of activity. If the constituency deems the consequences to be generally favorable, it will support the organization; if the consequences appear to be generally negative, support will give way to opposition. Dowling & Pfeffer (1975:129), for example, describe how the American Institute for Foreign Study won allies by inviting politicians to award AIFS scholarships and by permitting educators to travel through Europe at the organization’s expense. While cultural notions of appropriate-

ness may color whether such exchanges are seen as perquisites or bribes, at the limit, this kind of *dependence legitimacy* shades into a somewhat generalized and culturalized variant of conventional, materialistic power-dependence theory (Emerson 1962; Pfeffer & Salancik 1978).

A related, but slightly more socially-constructed type of pragmatic legitimacy might be termed *influence legitimacy*. Here, constituents support the organization because they feel that it reflects their interests. Most often, influence legitimacy arises when the organization makes efforts to incorporate constituents into its decision-making structures or to adopt their standards of performance. Favorable exchanges may win affections, but audience members are even more likely to support an organization that evinces an *ongoing* commitment to their interests. In a world of ambiguous causality, the surest indicator of this kind of commitment is the organization's willingness to relinquish some measure of decision-making authority to the affected constituency (see for example, Selznick's classic 1949 study of the Tennessee Valley Authority's efforts to co-opt local opposition). As Meyer and Rowan note, being obedient is often easier than producing results:

The use of external assessment criteria -- that is, moving toward the status in society of a subunit rather than an independent system -- can enable an organization to remain successful by social definition, buffering it from failure. (1977:49)

Although studies of pragmatic legitimacy have focussed almost exclusively on dependence and influence effects, a third variant, *dispositional legitimacy*, also merits explicit consideration -- particularly since it frequently colors judgments of moral and cognitive legitimacy (see below) as well. As Zucker 1983, has noted, the modern institutional order increasingly personifies organizations and treats them as autonomous, coherent and morally-responsible actors (see also Coleman 1974). Indeed, far from viewing organizations as interwoven patterns of individual behavior (e.g. Weick 1969; Williamson 1975), popular culture tends to see them as highly reified paragons of power, purpose and persistence (Zucker 1987:455). Given this orientation, it is hardly surprising that audiences often react to organizations as though they were individuals possessed of goals, tastes, styles and personalities. As Pfeffer observes:

People tend to judge a man by his goals, by what he's trying to do, and not necessarily by what he accomplishes or by how well he succeeds." Organizations are also judged by what they are apparently attempting to do. (1981:30, quoting George Gallup)

Thus, audiences are likely to accord legitimacy to those organizations that "share our values" or "have our best interests at heart," or that are "honest," "trustworthy," "decent," and "wise." These kinds of dispositional attributions, although sociologically naive, may prove to be essential in extrapolating positive evaluations of specific organizational acts into generalized perceptions of legitimacy. As discussed in part III, below, widespread belief in an organization's good character may also buffer it from the delegitimizing effects of isolated sins, miscues and reversals.

MORAL LEGITIMACY

Moral legitimacy reflects a positive normative evaluation of the organization and its activities. Thus, for example, Parsons (1960) argues that the values pursued by an organization must be congruent with societal values in order for the organization to exert acknowledged claims on societal resources. Unlike pragmatic legitimacy, moral legitimacy is "sociotropic" -- it rests not on judgments about whether a given activity benefits the evaluator, but rather on judgments about whether the activity is "the right thing to do." These judgments, in turn, usually reflect beliefs about whether the organizational activities in question effectively promote societal welfare, as defined by the audience's socially-constructed value system. In general, moral legitimacy takes one of three forms: evaluations of outputs and consequences, evaluations of techniques and procedures, and evaluations of structures and categories (cf. Scott & Meyer 1983:135-136). A fourth form, evaluations of leaders and representatives, is rarer, but nonetheless conceptually important.³

Consequential legitimacy: The rationalist mythology of the modern order (Meyer & Rowan 1977) asserts that organizations should be judged by what they accomplish. And, indeed, this is sometimes the case. Many industries sell their products in impersonal markets, and here, consumer judgments of quality and value generally determine the level of societal rewards for organizational activity. Even in sectors lacking

market competition, superordinate regulatory audiences may apply consequential measures of organizational effectiveness. As Scott & Meyer (1983:136) observe:

Outcome indicators focus attention on specific characteristics of materials or objects on which the organization has performed some operation.” (Scott 1977:75), for example, measures of patients’ mortality or morbidity in health care organizations or measures of students’ information or skills in educational settings.

In thinking about consequential legitimacy, however, one must bear in mind that “the technical properties of outputs are socially defined and do not exist in some concrete sense that allows them to be empirically discovered” (Meyer & Rowan 1977:55). Further, the charter of some organizations may center on outputs that are inherently difficult to meter -- either because of ambiguities in their definition, or because of extreme “lumpiness” in their distribution over time. Thus, for example, nuclear waste managers may face competing demands for security and efficiency, or may be asked to minimize the extent of radiation leakage in the remote event of future seismic activity. Describing such settings, Hinings and Greenwood suggest that:

What might occur with such organizations is that particular approaches to understanding performance are institutionally *proscribed*, such as attempts to apply economic criteria to a public social welfare agency. (1988:56)

Procedural legitimacy: In the absence of clear measures of outcomes, organizations may also derive moral legitimacy from the adoption of socially-legitimated techniques and procedures (e.g., Scott 1977:82). Although prevailing rational myths celebrate consequential effectiveness, they also specify relatively extensive webs of causality, identifying some methodologies as “science” and others as “quackery.” As Meyer and Rowan put it:

Rationalized and impersonal prescriptions...identify various social purposes as technical ones and specify in a rulelike way the appropriate means to pursue these technical purposes rationally.... [These techniques] must, therefore, be taken for granted as legitimate,

apart from evaluations of their impact on work outcomes. (1977:44)

Indeed, even when outcomes are easily measurable, it is still quite common that "the proper means and procedures are given a positive moral value" (Berger, Berger & Kellner 1973:53). This is particularly true in professional activities, where cultural beliefs (a) define outcomes as largely stochastic and (b) exalt procedures as ritual enactments of central cosmological and political organizing principles (e.g., science, citizenship, free will).

While procedural legitimacy often reflects relatively localized causal assumptions regarding the nature of the task at hand, at least one aspect of procedure is both sufficiently significant and sufficiently pervasive to merit a brief comment. This is the issue of "procedural justice." In recent years, organizational and legal researchers (Lind & Tyler 1988; Tyler 1988), have found substantial evidence that

those affected by the decisions of third parties in both formal and informal settings react to the procedural justice of the decision-making process at least as much, and often more, than they react to the decision itself. (Tyler 1988:128)

What is more, Tyler and Rasinski (1991) demonstrate that, in the legal arena at least, procedural justice exerts a direct effect on organizational legitimacy -- which, in turn, leads to heightened support for the focal organization. While a detailed review of this literature lies beyond the scope of the present paper, the existing research generally links procedural justice to: (a) the consistency of treatment across time and across individuals, (b) the quality (accuracy) of decisions, (c) the perceived ability of procedures to suppress decision-maker bias, and (d) the availability of opportunities for affected parties to be represented in the decision-making process. Interestingly, the relative importance of these criteria seems to remain fairly constant across social groups, although it varies somewhat by setting (Tyler 1988). Given the preceding discussion of dispositional legitimacy, it is also interesting to note that in Tyler's (1988) data, the importance of consistency and bias measures declines dramatically after he controls for respondents' perceptions of (a) whether authorities are trying to be fair (b) whether authorities are honest, and (c) whether authorities are polite and

concerned with citizens' rights. Apparently, procedural legitimation operates, at least in part, by bolstering constituents' sense that the organization has a laudable disposition, independent of immediate substantive outcomes.

Structural legitimacy: A third type of moral legitimacy might be termed "structural" (Scott 1977) or "categorical" (Zucker 1986). Here, audiences see the legitimated organization as valuable and worthy of support because its structural characteristics locate it within a morally-favored taxonomic category. According to Meyer and Rowan:

By designing a formal structure that adheres to the prescriptions of myths in the institutional environment, an organization demonstrates that it is acting on collectively valued purposes in a proper and adequate manner. (1977:319)

As this quote suggests, structures, like procedures, occasionally proxy for less easily observable targets of evaluation, such as strategies, goals and outcomes. DiMaggio and Powell (1983:152), for example, note that "structural changes are observable, whereas changes in policy and strategy are less easily noticed"; similarly, Scott & Meyer (1983:136) observe that "*Structural* controls focus on organizational features or participant characteristics presumed to have an impact on organizational effectiveness, including administrative [features] that support the direct production activities."

In addition, however, structural features also locate organizations within a larger institutional ecology (cf. Suchman 1988; Hannan & Freeman 1989), determining with whom they will compete and from whom they will draw support:

Organizations may compete with respect to what activities they will perform, and what activities other organizations will perform. The differentiation of functions among organizations is open to contest.... Competition over organizational domains can be resolved...through recourse to social norms and values that define and delimit legitimate spheres of organizational activity. (Dowling & Pfeffer 1975:125-6)

The structurally legitimate organization becomes a repository of public

confidence because it is “the right organization for the job”; often, this sense of rightness has more to do with identity than with competence. Thus, for example, a Department of Energy subunit may possess all the “proper” structures for determining the environmental impact of a nuclear waste repository and yet fail to achieve structural legitimacy, because it is not perceived as being an “environmental watchdog agency.”

Personal legitimacy: The fourth and final type of moral legitimacy rests on the “charisma” of individual organizational leaders or representatives. In general, this type of legitimation tends to be relatively transitory and idiosyncratic. As Zucker (1977:86) notes, “acts performed by actors exercising personal influence are low in objectification and exteriority, and hence low in institutionalization.” Perhaps because of these instabilities, the sociological understanding of charisma remains limited, at best. Nonetheless, the literature offers numerous assertions that individual “moral entrepreneurs” play a substantial role in disrupting old institutions (Weber 1968:245) and in initiating new ones (DiMaggio 1988). Whether true or not, this perception that charismatic individuals can transcend and reorder institutionalized routines often allows organizations to dodge potentially stigmatizing events through scapegoating and executive replacement (see part III, below).

COGNITIVE LEGITIMACY

As noted in the earlier discussion of active versus passive support, legitimacy may involve either actual approval of an organization, or mere acceptance of the organization as “necessary” or “inevitable” based on some taken-for-granted intersubjective account. Jepperson (1991:147) observes that “taken-for-grantedness is distinct from evaluation: one may subject a pattern to positive, negative, or no evaluation, and in each case (differently) take it for granted.” This suggests a third general set of legitimacy dynamics based on cognition, rather than interest or evaluation. Two variants are particularly significant: legitimacy based on comprehensibility and legitimacy based on taken-for-grantedness.

Theorists who focus on the role of *comprehensibility* in legitimation generally portray the social world as a potentially chaotic cognitive environment in which individuals must struggle to organize their experiences into understandable accounts.

In such a setting,

Legitimation concerns the problem of “explaining or justifying the social order in such a way as to make institutional arrangements subjectively plausible” -- the problem of motivating actors to enact actions by locating them “within a comprehensible, meaningful world.” (Scott 1991:169, citing Wuthnow et al. 1984:50)

To the extent that the culture provides a coherent, meaningful explanation for organizational activities, those activities will prove accessible and inviting to potential supporters. In the absence of such explanations, activity will collapse -- not necessarily because of overt hostility (although this is certainly possible, given the cognitively-threatening nature of the inexplicable), but more often because of repeated miscues, oversights and distractions.

Significantly, studies of comprehensibility generally suggest that not all explanations are equally viable: To provide legitimacy, an account must mesh both with larger belief systems and with the experienced reality of the audience’s daily life. This is the thrust of Mary Douglas’ discussion of “naturalizing analogies,” which discussion DiMaggio and Powell summarize as follows:

Institutions...begin as conventions, which, because they are based in coincidence of interest, are vulnerable to defection, renegotiation, and free riding. To become institutionalized, a behavioral convention requires a “parallel cognitive convention to sustain it,” an analogy that obscures its purely human origins....But not all conventions can sustain naturalizing analogies, only those that “match a structure of authority or precedence” so that “the social pattern reinforces the logical patterns and gives it prominence.” (1991:24-25; cf. Geertz 1973)

Science and engineering, of course, provide strong “naturalizing analogies” for radioactive waste disposal. Daily life, however, offers few experiences that support the plausibility of engineering projects designed to last for 50 millennia. The growing dissensus over nuclear energy policy (cf. Gamson & Modigliani 1989) only exacerbates this legitimation problem. To quote Meyer & Scott (1983:201-202), “The legitimacy of a given organization is negatively affected by...the diversity or inconsistency of [external] accounts as to how it is to function.”

In contrast to this image of a social world constantly teetering on the brink of cognitive chaos, partisans of *taken-for-granted* legitimacy depict a more sedate world of definitional coherence and glacial, integrative change (compare Powell 1991 with Zucker 1983). In this view, institutions not only render disorder manageable, they actually transform it into a set of intersubjective “givens” that largely submerge the possibility of dissent. In an archetypal statement of this perspective, Zucker (1983) identifies institutional legitimacy with cognitive exteriority and objectivity -- in other words, with the removal of an aspect of social structure from the presumed control of the very actors who initially created it:

explaining change in institutional structures must rest on the same aspects which predict their stability; change rests on the integration of the new structure with the old. Also, institutionalization is fundamentally a cognitive process. In order for an element of culture to have both objective and exterior qualities, there must be cognitive representations so that for things to be otherwise is *literally* unthinkable. (1983:25)⁴

To the extent that it is attainable, this kind of taken-for-grantedness represents both the most subtle and, arguably, the most powerful source of legitimacy identified to date -- if alternatives become unthinkable, challenges become impossible, and the legitimated entity becomes unassailable *by construction*. Unfortunately, this type of legitimation generally lies beyond the reach of all but the most fortunate organizational managers: While technologies and policies occasionally attain taken-for-granted status, pluralist political cultures rarely go so far as to assume that only one organizational unit can plausibly wield a given technology or pursue a given program. Even if it became “literally unthinkable” to dispose of radioactive waste through a technique other than deep burial, audiences might question whether disposal should be run by the Federal government, and within the Federal government, by the Department of Energy.

CONDITIONALIZING LEGITIMACY DYNAMICS

Given the diversity of legitimacy dynamics adduced in the organizations literature, it is hardly surprising that a number of theorists have attempted to delineate

the conditions under which one form of legitimacy or another will predominate. While a truly comprehensive and empirically-validated typology has yet to emerge, at least one contribution is sufficiently prominent and widely-employed to merit a brief note. This scheme is Scott and Meyer's (1983) typology of organizational environments.

Scott and Meyer begin their discussion by advocating a focus on "societal sectors" -- environmental units defined as:

(1) a collection of organizations operating in the same domain..., (2) together with those organizations that critically influence the performance of the focal organizations: for example, major suppliers and customers, owners and regulators, funding sources and competitors. ... For example, the housing sector would consist of all of the public and private organizational units, relations, and flows relevant to maintaining and adding to the supply of housing. Such a definition would encompass units from many different industries, for example, components of the construction, finance, public administration, and insurance industries. (1983:117, 119)

It is at this sub-societal but supra-industrial level that Scott and Meyer locate many of the physical technologies, economic exchanges and cultural understandings that shape organizational behavior. Sectoral structure, therefore, determines both the nature and the expectations of any given organization's relevant audiences.

Examining this new level of analysis, the authors elaborate on earlier works that distinguished institutional environments from more conventional technical ones (e.g., Meyer & Rowan 1977; DiMaggio & Powell 1983). In contrast to prior implications that technical and institutional elements were somehow contradictory, Scott and Meyer suggest that these two aspects represent orthogonal dimensions of environmental constraint. In strong technical environments,

organizations are rewarded for effective and efficient control of their production systems.... Organizations operating in such environments are expected to concentrate their energies on controlling and coordinating their technical processes and are likely to attempt to buffer or protect these core processes from environmental disturbances. (1983:123)

Strong institutional environments, on the other hand, are characterized by

the elaboration of rules and requirements to which individual organizations must conform if they are to receive support and legitimacy.... Whatever the source, organizations are rewarded for conforming to these rules or beliefs. (1983:123)

Either type of environmental constraint may exist in isolation; but they may also overlap -- as they do in sectors such as utilities, air travel and banking, which "combine complex technical requirements with a strong "public good" component" (Scott & Meyer 1983:123). Arguably, nuclear waste disposal falls into this "mixed constraint" category, although skeptics might question the present relevance of technical requirements (e.g., zero waste-seepage) that remain untestable for hundreds of years.⁵

This typology suggests a number of propositions about the bases of organizational legitimacy. Firstly, Scott and Meyer are careful to note that a strong environment is not the same as a hostile environment, and that environmental constraints offer criteria, not impediments, for legitimacy: "It appears that strong and stable organizational forms can arise in either technical or institutional environments, but that one of these two sets of constraints/supports must be present" (1983:124). Secondly, the authors emphasize that neither type of environment is "irrational":

Both technical and institutional environments give rise to "rational" organizational forms, but each type is associated with a different conception of rationality. Technical environments emphasize a rationality that incorporates a set of prescriptions for matching means and ends in ways that are efficacious in producing outcomes of predictable character. Institutional environments embrace a rationality that is suggested by the cognate term *rationale*: providing an account that makes past actions understandable and acceptable to others...." (1983:124)

Finally, Scott & Meyer outline a number of affinities between specific environment-types and specific legitimation dynamics (1983:136-137). In brief, the stronger the technical environment, the greater the need for pragmatic legitimacy and for moral legitimacy based on consequences and procedures. The stronger the institutional

environment, the greater the need for cognitive legitimacy and for moral legitimacy based on procedures and structures. Presumably, the joint operation of both kinds of constraints creates sectors in which comprehensibility and dispositional concerns come to the fore, although Scott and Meyer do not explicitly suggest this. Finally, one might speculate that the relative weakness of sectors lacking either kind of constraint reflects a limited failure of cognition and, more importantly, an almost exclusive reliance on pragmatism.

THE CHALLENGES OF LEGITIMACY-MANAGEMENT

The multiplicity of legitimacy dynamics described above creates considerable latitude for managers to maneuver strategically within their cultural environments. Admittedly, no organization can completely satisfy all audiences, and no manager can completely escape the cognitive bounds of the belief system that renders the organization plausible to him- or herself, as well as to others. But at the margin, managerial initiatives can make a substantial difference in the extent to which organizational activities are perceived as proper, valid and appropriate within any given social context. This section describes three general challenges of legitimacy-management -- gaining legitimacy, maintaining legitimacy and repairing legitimacy -- and suggests a range of responses to each. Finally, it closes with a brief cautionary examination of some of the ways in which legitimacy-management may go awry.⁶

GAINING LEGITIMACY

The challenge: Upon embarking on a new line of activity, particularly an activity with few precedents or cognates elsewhere in the social order, organizations often face the relatively daunting task of winning acceptance either for the propriety of the activity or for their validity as practitioners. This "liability of newness" (Stinchcombe 1965; Freeman, Carroll & Hannan 1983) has at least two distinct aspects. Firstly, when the new operations are technically problematic or involve poorly institutionalized domains, early entrants must devote a substantial amount of energy to "sector-building" -- to the creation of objectivity and exteriority, a sense that the sector exists as a social fact independent of its particular occupants. Zucker (1983:25) suggests that such facticity requires integration with prior taken-for-granted; however, sectoral pioneers may also need to disentangle new activities from

associations with pre-existing orders in which they were marginal, ancillary, or illegitimate.⁷ Thus, for example, government and industry officials in the 1950s actively constructed the concept of "civilian nuclear power," simultaneously linking it to the inevitable forward march of technology and differentiating it from nuclear weapons manufacture. Given the low public standing of the nuclear energy sector today, the institutionalization of radioactive waste management may require a similar sectoral disjuncture.

The second challenge of legitimacy-building applies, alike, both to new sectors and to new organizational *entrants* in old sectors. This is the two-pronged outreach task of (a) creating new, allegiant constituencies and (b) convincing pre-existing legitimate entities to lend support. In addressing this hurdle, Ashforth & Gibbs note that:

The literature suggests that constituents are particularly likely to scrutinize the organization where: (1) the organization has incomplete knowledge of cause-effect relations or technology, or lacks clear output standards..., (2) the organization's means or ends are disputed by portions of society..., (3) the organization lacks the support of traditions and norms, and so suffers the "liability of newness"..., (4) organizational activity entails substantial risks, and (5) constituents anticipate a long-term relationship with the organization. (1990:182)

Significantly, *all* of these disabilities pertain in the case of nuclear waste management: Long-term containment is an untested technology that requires commitment without practical performance tests; many of the means (e.g., citing decisions, disposal techniques) and some of the ends (e.g., freeing civilian nuclear power from economic and political impediments) of the waste-disposal program are highly controversial; the short history of civilian nuclear power offers few precedents for dealing with radioactive waste; the level of perceived risk is truly phenomenal; and the anticipated 50,000-year relationship between the organization and its constituents is about as long as they come.

Strategies for gaining legitimacy: Legitimacy-building is generally a proactive enterprise, since management has advance knowledge of its operational plans and of

the potential need for legitimation. Dowling and Pfeffer (1975:127) argue that:

An organization can do three things to become legitimate. First, the organization can adapt its output, goals, and methods of operation to conform to prevailing definitions of legitimacy. Second, the organization can attempt, through communication, to alter the definition of social legitimacy so that it conforms to the organization's present practices, output and values. Finally, the organization can attempt, again through communication, to become identified with symbols, values, or institutions which have a strong base of social legitimacy.

The following discussion examines each of these alternatives (as well as a number of related options that Dowling and Pfeffer's summary elides). Roughly, legitimacy-building strategies can be divided into three clusters: (a) efforts to adapt to the demands of pre-existing institutions, (b) efforts to manipulate pre-existing institutions into more supportive configurations, and (c) efforts to alter the institutional order by creating new legitimating myths.

Often, managers seeking legitimacy find it easiest to simply position their organization within the existing institutional terrain. This type of *adaptation* signals allegiance to the cultural order and poses few threats to the internal consistency of pre-existing institutions. Equally importantly, the availability of adaptive responses allows organizations to garner legitimacy without demanding that managers transcend the prevailing cognitive regime. Thus, the adaptive manager can turn a liability into an asset, taking advantage of the fact that he or she is a cultural "insider" by asking, "What would make this organization look more proper, valid and appropriate to me?" Some concrete strategies within this general class are as follows:

- (1) *Conform*: One obvious strategy for adapting to a strong institutional environment is simply to conform to its dictates, whether or not they enhance operational performance. Meyer and Rowan exemplify the dominant position in the institutional literature when they suggest that:

In institutionally elaborated environments, sagacious conformity is required: leadership...requires an understanding of changing fashions.... *Organizations that incorporate societally legitimated rationalized elements*

in their formal structures maximize their legitimacy and increase their resources and survival capabilities. ... Organizations which innovate in important structural ways bear considerable costs in legitimacy. (1977:53, emphasis in original)

As the preceding quotation suggests, discussions of conformity generally focus on procedural and structural legitimation within a pre-existing sector. Even in a new sector without established models, however, pioneers may imperil their cognitive legitimacy if they fail to conform to prevailing heuristics. (Thus, for example, an audience that views nuclear weapons, nuclear power and nuclear waste as a single complex may question plans to "button-up" a waste repository and leave it unmonitored.⁸) DiMaggio and Powell (1983:154) further elaborate this argument by noting that the pursuit of cognitive legitimacy through mimesis may lead to the counter-intuitive result that organizations will look more alike in fields where technologies are uncertain than in fields where means and ends are more clear.

- (2) *Embrace symbolism:* Within the strategy literature, symbolic responses are commonly put forward as convenient techniques for escaping constituent demands (e.g., Pfeffer 1981; Ashforth & Gibbs 1990). Institutionalists such as DiMaggio and Powell, too, observe that in the absence of output constraints, "organizations employ ritualized controls of credentials and group solidarity" (1983:151). At the extreme, several researchers follow Parsons (1956) in noting that, since organizational goals frequently operate more as rationalizations for existence than as guidelines for functioning, managers can strategically revise mission statements to conform with societal expectations (Pfeffer & Salancik 1978:194; Ashforth & Gibbs 1990:180).

Despite ample evidence of strategic goal revision and other "symbolic" responses (e.g., Zald & Denton 1963; Selznick 1949), the argument that symbol management frees the organization by bamboozling its audiences may be somewhat overdrawn. Occasionally, audiences will actually *desire* a symbolic response, in order to further their own cultural or political agendas (cf. Pfeffer 1981:33). More importantly, facile symbolic changes can prove quite substantive over the long run, as cognitive dissonance and self-selection effects gradually produce a new generation of organizational members who adhere to the announced goals, rather than to the hidden agenda.

- (3) *Select a favorable environment:* Often, when organizations enunciate new goals, they are doing so in order to place themselves in one type of environment rather than another. Firstly, by instituting markets or by promoting ambiguous goals, organizations (collectively) can often determine whether the primary sources of sectoral rationality will be technical or institutional (Meyer & Rowan 1977:55). Secondly, by seeking out new constituents, organizations can alter the mix of expectations to which they must respond (Ashforth & Gibbs 1990:178). Thirdly, by redefining their domains and redesigning their structures, organizations can choose the institutional norms that will govern their activities (Zucker 1983:37). As Scott notes:

The conception of a differentiated and competitive institutional environment...supports the view that organizations are not passive actors being imprinted by cultural templates. Rather, just as is the case within their technical environments, organizations may be expected to exercise "strategic choice" (see Child 1972) in relating to their institutional environments." (1991:170)

As a rule of thumb, centralized and consensual sectors ease the task of maintaining institutional conformity (Scott 1991:170). Fragmented and conflicted sectors, on the other hand, generally offer the most leeway for efforts to promote initially heterodox views -- at least in part because the high level of dissensus undercuts the legitimacy of even the most central sectoral actors (Meyer & Scott 1983:201-202). Beyond this, managers seeking a favorable environment might do well to consider the Scott & Meyer typology outlined in Part II, above.

- (4) *Segregate competing environments:* Occasionally, organizations will find themselves unable to operate in a single, coherent environment. When this occurs, managers may attempt to control technical-institutional (or inter-institutional) conflicts by segregating environments and by catering to one at the expense of the other. Meyer and Rowan (1977: 56-57) identify three such strategies: (a) protecting and exalting ceremony, while ignoring performance; (b) treating ceremony cynically, and openly acknowledging that entrenched rituals serve no technical purpose; (c) promising reform, thereby segregating today's reality from tomorrow's ideal. Unfortunately, ceremonialism tends to impede boundary-spanning exchanges, cynicism makes the organization appear irrational and out of control, and reformism delegitimizes the current structure and undercuts morale.
- (5) *Integrate competing environments:* For some organizations, selecting (or overtly favoring) a single environment may not be a viable option. In particular, public-sector organizations commonly operate within a system of checks and balances that affords even relatively small audiences a "policy veto" over domain shifts. In these settings, organizations must attempt to demonstrate "inter-institutional robustness" -- that is, they must show that their actions would be appropriate under any applicable institutional standard.

Once again, three techniques are possible: Firstly, managers can exercise *entrepreneurship*. As Powell (1991:197) notes:

Multiple, conflicting constraints provide opportunities for various kinds of organizational forms to be established. These cross-cutting institutional pressures provide a space for entrepreneurs to construct an organization out of a diverse set of legitimated practices.

Along these lines, Pfeffer (1981:22) offers the example of an academically-oriented business school that developed the concept of "theory-based professionalism" to link its research and fund-raising efforts.

Secondly, organizations can *decouple* the activities required by contradictory environments, assiduously (and sincerely) performing inconsistent tasks while leaving formal coordinative structures underdeveloped. In Meyer and Rowan's words:

Delegation, professionalization, goal ambiguity, elimination of output data, and maintenance of face are all mechanisms for absorbing uncertainty while preserving the formal structure of the organization.... Because integration is avoided, disputes and conflicts are minimized and an organization can mobilize support from a broader range of external constituents. (1977:58)

In the presence of decoupling, ritual displays of confidence, good faith, morale and satisfaction are important not only for maintaining legitimacy, but also for facilitating informal solutions to institutional strains: "Participants not only commit themselves to supporting an organization's ceremonial facade but also commit themselves to making things work out backstage" (Meyer & Rowan 1977:59). Thus, for example, ceremonialized "inspections" of nuclear waste facilities by busloads of school children may *both* (a) create less strain than technical oversight by environmentalists and industry officials, *and* (b) bolster operators' commitments to keeping the world safe for future generations.⁹

Decoupling manages tensions between audiences well, but it often does so at the expense of technical control. A third integrative alternative is the adoption of an institutional/technical *matrix* structure (Scott 1987:221-223). While Scott and Meyer hypothesize that "organizations functioning in sectors that are highly developed both institutionally and technically will develop more complex and elaborate administrative systems" (1983:126; similarly, Powell 1991:196), little empirical or theoretical attention has been devoted to the implications of this alternative. Morrill (1991), however, reports disconcerting ethnographic evidence of the disruptive internal conflicts engendered by more traditional product/function matrices (see also Scott & Meyer (1983:126).

While cognitive taken-for-grantedness may prevent individuals -- managers included -- from conceiving of alternatives to prevailing institutional structures, the potentially dissensual nature of cultural environments often creates identifiable interstices in which actors can manipulate pre-existing (but not necessarily consistent) myths. As Hinings and Greenwood observe:

One of the dynamics of change is the potential for strain between institutional definitions at the level of meaning, and task and environmental pressures....Domain, organizational form, and performance are subject to institutional definition. (1988:56-57)

Thus, as well as simply adapting to institutional constraints, managers can also pursue organizational legitimacy by attempting to *manipulate* elements of the prevailing order so as to make otherwise marginal organizational activities appear more proper, valid or appropriate. The four basic strategies within this class center on success, persistence, embeddedness and isomorphism.

- (1) *Succeed*: Often, organizations can legitimate their activities by demonstrating a record of technical success (see e.g., Ashforth & Gibbs 1990:178). In some ways, of course, this merely represents an instance of consequential legitimacy. However, within the contemporary rationalist order, consequential legitimacy occupies a privileged position that allows it to have spill-over effects on other legitimacy dynamics. Thus, for example, several studies have suggested that as sectors become institutionalized, the structures and procedures of early successful innovators come to be seen as rational, necessary and proper -- regardless of whether these structures actually yield favorable consequences for later adopters (e.g., Tolbert & Zucker 1983 [civil service reforms]; Meyer, Stevenson & Webster 1985 [urban finance agencies]; Baron, Dobbin & Jennings 1986 [personnel units]; Suchman & Eyre 1992 [supersonic air forces]). This suggests that if organizations achieve early dramatic success, their initial consequential legitimacy may translate into more persistent procedural and structural legitimacy. And if no equally-successful competing models exist, this confluence of moral legitimacies may set off an avalanche of isomorphism (DiMaggio & Powell 1983) that eventually yields cognitive legitimacy, as well.

In light of the importance of success-claims in institutionalization, it is perhaps worth re-emphasizing the fact that success is, itself, subject to social definition. "The criteria for what is a good technical solution are often open to dispute. Engineers, economists, entrepreneurs, and environmentalists may all speak with authority, but they will be a most discordant chorus." (Powell 1991:186) This leaves ample room for legitimacy-management through impression management:

Since assessment is likely to be desired, a [common] strategy involves the selective release of information which is a) defined along criteria more favorable to the organization, b) measured along criteria which are more readily controlled by the organization, and c) acceptable to those interested in the organization. One

example of such a strategy is the release of numerous indicators of inputs at the same time information about process and particularly outcomes is not released. (Pfeffer 1981:30)

Thus, for example, nuclear waste managers might release information on the volume of waste removed from on-site storage, without mentioning whether this waste had actually been placed in permanent repositories; or they could highlight the amount of waste "eliminated from the environment," without mentioning the fact that the long-term consequences of this disposal effort would remain unknown for several centuries.

- (2) *Persist*: Closely related to the strategy of consequential success is the strategy of persistence. At the simplest level, persistence may serve as a proxy for success in settings where consequences are diffuse or hard to measure -- "if it's been around so long, it must be doing some good." Equally importantly, Zucker notes that persistence may also foster cognitive comprehensibility and taken-for-grantedness:

The history of transmission provides a basis for assuming that the meaning of the act is part of the intersubjective common-sense world. As continuity increases, the acts are increasingly objectified and made exterior to the particular interaction. (1977:87; see also Zucker 1983:10, 1988:35)

Jepperson (1991:151) suggests that stable behavioral patterns also become legitimized by the fact that other practices adapt *to them*. A persistent government agency, for example, may appear competent simply because it interacts smoothly with the sector that has grown up in its shadow.

- (3) *Embed*: A third way for organizations to legitimate their structures and practices is by embedding them in networks of other already-legitimate institutions. In Zucker's words, "legitimacy is contagious. Once one role, action, structure is legitimated, it can infect other roles, actions, structures. Hence, highly institutionalized aspects of organizations are simultaneously legitimate and a source of legitimation" (1988:38)

Many types of embedding are possible; however, the existing literature highlights three as being of particular importance. First, organizations may engage in co-optation, both as a means of creating pragmatic legitimacy (Pfeffer 1981:33, 35) and also as a means of associating themselves with respected individuals and institutions (Dowling & Pfeffer 1975). Second, organizations may formalize their operations, codifying informal procedures (Zucker 1988:35), bringing previously marginal activities under official control (Zucker 1977:86), and establishing hierarchical linkages with superordinate environmental units (Scott & Meyer 1983:137). Finally, organizations may professionalize, thereby linking their activities to external

definitions of authority and competence (Scott 1991:175-176).

Compared to co-optation and formalization, professionalization offers the interesting strategic advantage of allowing the organization to "export" cognitive and procedural legitimation tasks to an outside entity (the profession) that specializes in creating consistent symbol systems and intersubjective cultural understandings (Scott 1991:172; Suchman 1991a). Before embracing this strategy, however, managers should recognize that professional allies often come at a substantial cost to hierarchical control:

As a corporate group, professionals in their associations demand and command discretion and control over programmatic and instrumental decisions falling within their claimed sphere of competence.... And, as individual practitioners, professionals jealously guard their discretion over instrumental decisions. (Scott & Meyer 1983:130; see also Scott 1991:172)

In addition, professionalization may entangle the organization in the profession's disputes with other groups in civil society -- including, at times, other more powerful professions (Hinings & Greenwood 1988:67).

- (4) *Encourage isomorphism:* As Pfeffer & Salancik (1978:201) observe, "organizational legitimacy appears to be especially problematic when organizations of different distinguishable types compete for the same resources or the same activities." Thus, organizations may legitimate their activities by encouraging isomorphism, either through dramatic success and professionalization (see above), or through direct coercion and the passage of regulatory legislation (DiMaggio & Powell 1983; Tolbert & Zucker 1983).¹⁰

Significantly, an organization may enhance its legitimacy not only by encouraging isomorphism among its counterparts, but also by encouraging isomorphism among its audiences. Zucker (1983:18), for example, cites evidence that the pressures of interacting with bureaucracies often routinize initially-radical social movements (see also Swidler 1979; Rothschild-Whitt 1979). This suggests that the classic co-optation strategy of integrating external *audiences* into organizational decision-making may serve not only (a) to produce pragmatic legitimacy by increasing perceived influence, but also (b) to produce cognitive legitimacy by making alternatives to organizational decisions seem less and less plausible (cf. Michels 1949).

A final class of strategies for gaining legitimacy fall under the general heading of "promoting supportive myths." Here, managers go beyond simply manipulating existing cultural beliefs, to formulate and promulgate *new* explanations of social reality (see e.g., Ashforth & Gibbs 1990:178). On the whole, the literature tends to treat this legitimation strategy in a relatively cursory fashion, frequently noting that

efforts to change social values are far more difficult and, hence, far rarer than efforts to change organizational behaviors or to maneuver within the existing belief system (Ashforth & Gibbs 1990:180; Dowling & Pfeffer 1975:127). Nonetheless, DiMaggio (1988:11) suggests that "institutionalized myths are in some measure susceptible to the discretion of any individual participant or organization," and he argues that "institutionalization projects" are not uncommon.

When the existing literature explicitly addresses the task of altering societal beliefs, researchers tend to focus on two distinct facets: popularization and coalition-building. The first of these reflects the basic communicative challenges of spreading a new cultural formulation. As Hinings and Greenwood (1988:57) observe, "the extent to which any particular set of prescriptions or proscriptions are institutionalized is dependent on the authoritative nature of the mechanisms available to diffuse ideas concerning current practice." A number of such mechanisms have been identified. Miles (1981), for example, reports that the tobacco industry has attempted to foster favorable cultural definitions through lobbying, advertising, event sponsorship, litigation and scientific research. While some of these activities would be difficult for a public-sector organization, others (such as creating photo opportunities, staging press events, providing public testimony and spreading supportive anecdotes) would not. Along these lines, Pfeffer (1981:23) offers a case study of institutional change (admittedly, at a sub-organizational level), in which managers promulgated a new social definition "through continually articulating stories which illustrated its reality and by a constant repetition of the theme" (see also Nielsen & Rao 1987).

The second facet of institution-building reflects the political challenges of constructing a winning supra-organizational coalition. According to Dimaggio:

In order to render its public theory plausible...an institutionalizing organizational form requires the help of subsidiary actors. ... Recruiting or creating an environment that can enact their claims is the central task that institutional entrepreneurs face in carrying out a successful institutionalization project. (1988:15)

Relatedly, Hinings and Greenwood (1988:63) note that changes in institutional myths frequently depend on "authoritative organizations whose definitions of what is prescribed and proscribed have a particular power." Such allies are necessary not only

in the redefinition of established sectoral understandings, but also in the creation of new sectors where none have existed before. In this regard, Suchman (1991b) argues that emergent sectoral structures often reflect the activities of “information intermediaries” -- ancillary organizations, such as law firms and management consultants, that enjoy frequent contact with large numbers of potential participants in a new sector, and that draw on these contacts to formulate and promulgate “compiled” accounts of the sector’s basic organizational principles.

Despite these points of commonality among reported instances of institutional entrepreneurship, the literature offers few detailed strategic prescriptions. In large part, this may reflect the fact that institutionalization projects tend to be under-determined, with poorly-understood feedback loops and highly chaotic path-dependencies (cf. David 1986). DiMaggio highlights one such feedback pattern when he notes that:

the success of an institutionalization process creates new sets of legitimated actors who, in the course of pursuing distinct interests, tend to delegitimize and deinstitutionalize aspects of the institutional forms to which they owe their autonomy and legitimacy. (1988:13; cf. Singh, Tucker & Meinhard 1991)

Further, the very process of subjecting a sector to public scrutiny generally creates a distinctive and transitory “spotlight ecology” of unpredictable advocacy groups and opportunistic political organizations. In this kind of indeterminate milieu, outcomes will often reflect a “point of critical intervention” (Domhoff 1979) at which elites can define appropriate models of organizational structure and policy which then go unquestioned for years to come (see Katz, 1975)” (DiMaggio & Powell 1983:157). Unfortunately, such critical points are difficult to identify *a priori*, and social scientists are hard-put to formulate useful intervention strategies without falling victim to the cardinal methodological sin of sampling on the dependent variable.

MAINTAINING LEGITIMACY

The challenge: In general, the organizations literature tends to depict the task of maintaining legitimacy as a far easier enterprise than either gaining or repairing

legitimacy. According to Ashforth & Gibbs:

Once conferred, legitimacy tends to be taken largely for granted....Reassessments of legitimacy become increasingly perfunctory if not "mindless" (Ashforth & Fried 1988) and legitimation activities become increasingly routinized. (1990:183)

Similarly, Zucker (1977:105) argues that the institutional order acts as a homeostatic system, rapidly repairing accidental fluctuations in any single component:

Deinstitutionalization is seldom accidental. Once institutionalized, structure or activity may be maintained without further action: institutionalized elements become embedded in networks, with change in any one element resisted because of the changes it would entail for all the interrelated network elements.

Nonetheless, as Zucker herself notes (1988), entropy is a persistent feature of social life, and few organizations can safely ignore the task of legitimacy maintenance. Anomalies, miscues, imitation failures, innovations and external shocks all threaten the legitimacy of even the most secure organization -- assuming such misfortunes arrive in sufficiently rapid succession or are left unaddressed for a sufficiently long period of time.

Three aspects of legitimacy make its maintenance at least intermittently problematic: audiences are often multiplex, stability often entails rigidity, and institutionalization often generates its own opposition. The first of these centers on the fact that legitimacy reflects a *relationship* with an audience, rather than a *possession* of the organization. When the audience is fragmented, satisfying -- or even recognizing -- all factions may prove virtually impossible. Thus,

Legitimacy...is always problematic. Social values and expectations are often contradictory, evolving and difficult to operationalize.... What's more, large and complex organizations are answerable to a number of diffuse constituents with frequently conflicting expectations and perceptions. (Ashforth & Gibbs 1990:177)

This “multiple-audience problem” is particularly acute in the political climate of United States, since, as Meyer and Scott note:

Liberal political regimes that encourage a pluralist approach to decision-making and that emphasize the separation of powers within nation state structures are likely to exhibit higher levels of fragmentation of decision-making within sectors as well as between sectors. (1983:131)

The second problematic feature of legitimation centers on its potential for fostering a fragile rigidity. “In certain conditions, high institutionalization can make a structure more vulnerable to environmental shock (from internal or external environments).... It [becomes] a ‘house of cards,’ in Tocqueville’s phrasing” (Jepperson 1991:145). In particular, high levels of mutual adjustment and taken-for-grantedness may impede organizations in institutionalized sectors from adapting to changed conditions. Notes Powell:

In the absence of incentives embedded in existing institutional arrangements, innovation and diversity will be more likely to come from the periphery of organizational fields or from outside sources....New social practices routinely face active resistance and recalcitrance on the part of those comfortable with the status quo. (1991:198)

Linking the problem of multiple audiences with the problem of rigidity, Hannan (1986:89-90) suggests that as organizations become isomorphic and homogeneous within a heterogeneous cultural environment, unfilled demands create niches for “outlaw” entrepreneurs who devise and adopt innovative organizational forms.

Hannan’s insight ties in with the third challenge to legitimacy, which is the tendency for any degree of institutionalization short of total taken-for-grantedness to generate its own opposition. Both the progress of an institutionalization project and the incorporation of an individual organization into a pre-existing sector are likely to attract the attention of new audiences, and often these audiences will prove hostile -- if only because pro-active managers will already have enlisted most of the potentially supportive audiences during the project’s early stages. Some of the new critics may hope to delegitimize the sector by attacking its least institutionalized element.¹¹

(Thus, for example, environmentalists may attack nuclear waste disposal plans as a way of re-emphasizing the hazards of nuclear power.) Somewhat more broadly, other groups will oppose institutionalization *per se*, either because they endorse an anti-bureaucratic ideology or because they operate on the socio-political periphery and experience the newly-institutionalized organization as an unwanted external constraint (Jepperson 1991:146). For the organization seeking to build legitimacy, each of these hostile responses produces a so-near-but-yet-so-far dynamic, in which every victory seems to mobilize a new, more radical opponent. Private organizations can often escape this cycle by segregating confrontational responses to the fringe from conciliatory responses to the mainstream; however, the aforementioned pluralist "policy veto" may make such an approach more difficult for governmental actors.

Strategies for maintaining legitimacy: Strategies for maintaining legitimacy fall into three groups: perceiving, buttressing and stockpiling. The first cluster, perception techniques, focusses on enhancing the organization's ability to recognize audience reactions and to foresee challenges. Two main strategies in this group deserve note:

- (1) *Incorporate/monitor multiple audiences:* Scott and Meyer (1983:133) argue that "organizations operating in sectors characterized by fragmented or federalized programmatic decision-making...exhibit complex linkages across levels and elaborated and enlarged administrative components at each level." In part, this may reflect efforts to build "bridges" (Scott 1987) across which the organization can learn about constituents' values, beliefs and reactions. Thus, for example, although much of the strategy literature focuses on how co-optation provides symbolic reassurances to constituents (Pfeffer 1981:33), the incorporation of audience representatives may also provide valuable cultural insights to management. The same is true of professionalization, which charters a certain organizational members to actively participate in external normative discourses (DiMaggio & Powell 1983:152). From this point of view, the risk is not that boundary-spanners will "run wild," but rather that they will become lap-dogs (cf. Arrow 1974).
- (2) *Create doubting-thomases:* A recurrent danger in institutionalized organizations is that managers will spend too much time "reading their own P.R." As Hinings and Greenwood (1988:16) note, "a common theme in the [organizational] decline literature is that decision-makers often delude themselves into believing that a problem does not exist or that it is not serious." Thus, most organizations would do well to charter specific sub-units to question taken-for-granted (Mitroff & Kilmann 1984). According to Ashforth and Gibbs,

Attempts to anticipate and prevent or forestall challenges to legitimacy often include...periodic scanning of internal and external environments and questioning the working assumptions about those environments, taking the perspective of constituents when determining and justifying decisions ("how will it look to them?"), and establishing crisis management plans to ensure prompt and coordinated action should a crisis occur. (1990:183)

In addition to developing early-warning systems to protect against unforeseen legitimacy challenges, organizations wishing to maintain their legitimacy may also seek to *buttress* their place within the institutional structure by guarding against miscues. Three available strategies are:

- (1) *Network*: "One of the results of more frequent communication intensity is likely to be the development, through informational social influence, of a more common set of understandings about the organization and its environment. These understandings, these shared meanings, provide organizational participants with a sense of belonging and identity as well as demarcating the organization from its environment and assisting in the control and commitment of those within the organization." (Pfeffer 1981:13) In other words, the more tightly interconnected an organization or a sector becomes, the more likely its institutions and beliefs are to approach the homeostatic ideal (Scott 1987:76-81).
- (2) *Be subtle*: In contrast to the intense political activity surrounding legitimacy-building, legitimacy-maintenance (particularly the preservation of taken-for-grantedness) requires a much softer hand. Once an organization has achieved wide acceptance, value-based evangelism should give way to "cooler" techniques, such as matter-of-fact explanations of "common knowledge" (Pfeffer 1981:15). While the organization may wish to quarantine hold-out opponents in order to isolate them from public discourse, managers should avoid validating opposition by overtly treating it as a genuine threat. In particular, raw coercion rarely represents a productive legitimacy-maintenance strategy, since it tends to disrupt the exteriority and objectivity of social relations (Zucker 1988:33). As Scott notes:

We would expect structural forms imposed by authority to meet with less resistance, to occur more rapidly..., and to be associated with higher levels of compliance and stability than those imposed by force. The structural changes should also be less superficial and loosely coupled to participants' activities than those imposed by coercive power. (1991:175)

As well as invoking legitimate authority, organizations may overcome challenges by manipulating language (Pfeffer 1981:25) and by simply waiting for demographic processes to replace cohorts of critics with new generations of believers.

- (3) *Avoid surprises:* "Having adjudged the organization credible, constituents tend to relax their vigilance and content themselves with evidence of ongoing performance vis-a-vis their interests and with periodic assurances of 'business-as-usual'" (Ashforth & Gibbs 1990:183). Consequently, organizations should avoid unexpected events that might re-awakening constituent vigilance. Admittedly, there are times (for example, following nuclear accidents) when renewed scrutiny is probably inevitable. When reversals are predictable, however, the organization should disclose them in a timely and low-key manner, along with more reassuring information; saving bad news too long virtually invites a delegitimizing exposé.

A final strategy for maintaining legitimacy is to *stockpile* goodwill, generally in the form of dispositional legitimation. A public perception that the organization is a "responsible citizen" can act as a kind of capital reserve:

This goodwill can serve as a "corporate credit" (Madan 1985) -- analogous to an individual's "idiosyncrasy credit" (Hollander 1964) -- whereby management can occasionally deviate from social norms without seriously upsetting the organization's standing....A good reputation, in short, provides leverage or slack for defending against challenges to legitimacy." (Ashforth & Gibbs 1990:189)

In structuring this reserve, managers might want to consider Hambrick and D'Aveni's (1988) distinction between working capital and potential capital. These authors report evidence that many failing business firms miss the early signs of trouble because, although they are highly leveraged, they enjoy ample supplies of working capital. Similarly, one might argue that organizations in institutionalized sectors often overlook looming legitimation crises because, although their public acceptance is low, they enjoy ample support among political and regulatory incumbents. Ultimately, political and regulatory support is probably most stable and useful when backed by popular goodwill.

REPAIRING LEGITIMACY

The challenge: In many ways, the task of repairing legitimacy resembles the task of gaining legitimacy. Unlike legitimacy-building, however, legitimacy-repair generally represents a *reactive* response to an *unforeseen* crisis of meaning -- often precipitated by a crisis of resources. While the maintenance strategies described above can give organizations some advance warning of impending challenges, legitimacy crises usually befall managers who have become enmeshed in their own legitimating myths and have failed to notice a decline in cultural support -- until some cognitively-salient trip-wire sets off alarms.

Managers who recognize weakness before it comes to the attention of key constituents may be able to successfully deploy the same strategies that established the organization's legitimacy in the first place; however, managers who discover problems only when constituents protest face a much harsher reality. In particular, by the time reactive managers begin to address a problem, old legitimation strategies and old legitimacy claims may already have been discredited. Suddenly, the legitimation successes of the past become impediments to the future:

Since a challenge can only be lodged *against* something, there is more apt to be an established organizational infrastructure -- including previously claims to legitimacy -- and this may constrain the ability of management to respond...to the challenge, at least in the short run.... Scrutiny makes it difficult to decouple activities -- especially those involving legitimacy -- and to engage in routine impression management or puffery regarding role performance. (Ashforth & Gibbs 1990:183)

In addition to impairing management's ability to maneuver, an unfolding legitimacy crisis also may sever managers from previously reliable environmental allies. Indeed, legitimation crises tend to become self-reinforcing positive-feedback loops, as social networks recoil to avoid guilt by association. At the most concrete level, this retraction of support can exacerbate performance failures by disrupting critical resources flows. Thus, for example, Sutton and Callahan (1987) report that suppliers often refuse to sell parts to newly-bankrupt organizations, even for cash. The retraction cascade is at its most threatening, however, when the networks in

question provide legitimacy rather than material resources. Since legitimation is frequently highly mutualistic, the risk of negative contagion may drive even long-standing allies to dissociate themselves from a troubled counterpart and to engage in ritualistic sniping and ostracism. Interestingly, this dynamic suggests that the most deeply embedded organizations are also likely to be the most harshly punished. The wider the range of societal activities implicated in an organization's legitimacy claims, the greater the pressure to brand wrongdoing as deviant -- or even as sacrilegious (cf. Ashforth & Gibbs 1990:185).¹²

Strategies for repairing legitimacy: As a general matter, most of the legitimacy-building strategies described above can also serve to re-establish legitimacy following a crisis -- provided the organization continues to enjoy some modicum of credibility and interconnectedness with the relevant audiences. Often, however, the delegitimated organization must deal with the immediate disruption before initiating more global legitimation activities. The limited literature on this topic suggests four broad prescriptions:

- (1) *Offer normalizing accounts:* While legitimacy crises often coalesce around performance issues, most challenges ultimately rest on failures of meaning: At the organizational level, constituents begin to suspect that a putatively laudable actor may actually be a fraud; at the sectoral level, audiences begin to suspect that putatively desirable outputs are hazards, that putative efficacious procedures are tricks, or that putatively genuine structures are fronts. Consequently, the first task in mending a breach of legitimacy will usually be to offer a culturally-acceptable "normalizing account" for the threatening revelation.

At least three types of accounts are possible (cf. Ashforth & Gibbs 1990:180-181). Firstly, managers may *deny* the disruption by (a) questioning the veracity of the accusation ("there was no accident"), (b) questioning the strength of the evidence ("tests for radiation leakage were inconclusive"), or (c) questioning the disruptiveness of the event ("radiation exposure was within acceptable limits"). As Ashforth and Gibbs note, unless such denials are sincere, subsequent public discovery of the dishonesty may severely deplete the organization's dispositional legitimacy reserve. Thus, rather than denying the disruption, managers may choose to *excuse* it by questioning the organization's agency and, hence, its moral responsibility. Unfortunately, this tactic -- which often amounts to blaming individual employees or external authorities -- also has a double-edge, "since constituents expect managers to effectively *control* their organizations" (Ashforth & Gibbs 1990:181). Finally, and most productively, managers may *justify* the disruption, redefining

means and/or ends retrospectively, in order to make the disruptive events appear consonant with prevailing values and beliefs.

Practically speaking, managers often find themselves hard-put to manipulate the substance of normalizing accounts without appearing disingenuous. In such cases, they might do well to devote their energies to manipulating the *form* of the account instead: "As the literature on ingratiation would suggest (Wortman and Linsenmeier 1977), protests of legitimacy are likely to be more successful if they are indirect and subtle" (Ashforth & Gibbs 1990:187). Often, accounts appear more credible and less self-serving when couched in the form of "stories, proverbs, tales, and so on" (Nielsen & Rao 1987:528; see also Martin 1982) -- and this is presumably true regardless of whether the accounts involve denials, excuses or justifications.

- (2) *Restructure*: Pfeffer (1981:39) notes that "restructuring can alter the symbolic value given to different aspects of the organization's operation. Through such symbolic action, it is possible to both motivate and placate various interests in contact with the organization." While indiscriminate structural changes may make the organization appear unstable and unreliable (Hannan & Freeman 1984), narrowly-tailored changes that mesh with normalizing accounts can serve as effective damage-containment techniques.¹³

Two types of restructuring play particularly large roles in this regard. The first -- executive replacement -- invokes the symbolism of charismatic authority and individual disposition (Weber 1968; Gephart 1978) to signify a desire for change. "It is more difficult to obtain support with the same organization and individuals that previously failed. A change, particularly at the top, may convey symbolic reaffirmation of improvement which may generate new support" (Pfeffer 1981:36). The second major restructuring technique -- the creation of monitors and watchdogs -- allows the organization to "post a bond" against future recidivism. By inviting government regulation, by chartering ombudspersons and by instituting grievance procedures, managers offer "symbolic evidence that the demands of various interests are now to be dealt with within the organization" (Pfeffer 1981:36).

- (3) *Dissociate*: In addition to symbolically excising bad internal elements, organizations seeking to regain legitimacy may also symbolically distance themselves (either geographically or politically) from bad external influences. Thus, for example, a radioactive-waste management unit might bolster its legitimacy by shifting its organizational locus from the Department of Energy to the Environmental Protection Agency -- or by transferring its headquarters from Washington DC to Nevada.

- (4) *Don't panic*: While this injunction (Adams 1979:52, 56) may sound facetious, it is not. Staw, Sandelands and Dutton (1981) argue that "precipitous crises lead to a threat-rigidity response that severely impairs decision-making and promotes [organizational] failure." Ashforth and Gibbs, too, posit that managerial overreactions frequently induce "downward spirals" that powerfully magnify initial legitimation difficulties.

While legitimacy-repair may resemble legitimacy-creation, in that both call for intense activity and dramatic displays of decisiveness, legiti-

macy-repair also resembles legitimacy-maintenance, in that both require a light touch and a sensitivity to environmental responses. Panic would not seem to be the ideal emotional state for achieving this balance. Thus, managers facing legitimacy crises might do well to contemplate Hambrick and D'Aveni's (1988:20) finding that even in market-driven sectors organizational collapse can take ten years or more; presumably in institutional sectors declines occur more slowly still.

TWO CAVEATS IN CLOSING

The preceding discussion identifies a number of risks that attend specific legitimization strategies. The literature, however, also identifies at least two dangers that attend legitimacy-management in general. The following paragraphs briefly examine each. This review is intended primarily to highlight the *possibility* of dangerous feedback-loops in the dynamics of legitimation. It offers no solutions, and it makes no pretense of comprehensiveness. It merely sounds a cautionary note in the hope of encouraging reflection.

The first caveat revolves around what Ashforth and Gibbs identify as a "self-promoter's paradox" in organizational legitimation. If we take seriously Nielsen and Rao's (1987) reminder that audiences are active participants in the process of meaning-construction, we must recognize the possibility that audience interpretations will diverge from organizational expectations. In particular, "the greater the need for legitimation, the more suspect of legitimation attempt are constituents" (Ashforth & Gibbs 1990:186). Moreover, "since protests of competence are more likely when actual competence is problematic or unknown, individuals tend to discount such protests" (Ashforth & Gibbs 1990:186) -- or even to take such protests as signals of a *lack* of competence. In other words, the more codified and consistent legitimacy-management strategies become, the more likely it is that audiences will actually learn to see such activities as clues that something is amiss.

Ashforth and Gibbs (1990:186-191) identify three clusters of strategies that they believe may have already gained such inverted meanings: (1) *clumsy action*, in which managers act in unethical, heavy-handed or insensitive ways, such as by attempting to suppress whistle-blowers; (2) *nervous action*, in which managers act in dogmatic, intolerant or evasively formalistic ways, such as by following regulations to the letter while rejecting interpersonally negotiated understandings (cf. Zucker 1988); and (3) *overacting action*, in which managers act in rhetorical, self-aggrandiz-

ing or inflammatory ways, such as by painting everyday interactions as black-and-white confrontations between Good and Evil. The existence of these cynical archetypes removes certain mixes of strategy from the legitimation arsenal, impeding the flexibility of individual legitimacy-seekers and, more importantly, impoverishing the symbolic repertory of the society as a whole.

A similar societal impoverishment forms the basis for a second caveat, as well. This second dynamic might be termed the “sector-leader’s paradox.” Here, difficulties arise because legitimation is *too* successful, rather than because it is not successful enough. The root of the paradox lies in the fact that efforts to legitimate a sector-leading organization (particularly a government agency) may inadvertantly remake the entire sector in the leader’s image. Sometimes, this process proves relatively unproblematic or even beneficial, such as when sector members streamline and coordinate their routine interactions (Suchman 1991b; Powell 1991:194). At other times, however, leadership effects may foster far less desirable forms of isomorphism:

The performance of firms can slip drastically if managers do not understand the undesirable and manipulative aspects of strategy. Managers may emulate questionable practices if their facades or the facades of other organizations prevent them from pinpointing concealed deficiencies (Nystrom & Starbuck 1984). Sometimes managers who wish to appear progressive can espouse innovations indiscriminately, thereby damaging organizational adaptability (Kimberly 1981). (Neilsen & Rao 1987:531-532)

Occasionally, in fact, sector-leadership may produce outcomes that benefit neither the leader nor the followers, nor the sector, nor the society as a whole. Thus, for example, Suchman and Eyre (1992) examine the international military order and conclude that the sector-defining high-tech mythology of the superpowers has driven a massive mimetic proliferation of ever-more-deadly weapons to third world states that neither need such armaments nor possess the political structures to control them. By analogy, one might ponder with trepidation the possibility that a future U.S. nuclear-waste policy (say, for example, a decision to employ retrievable disposal techniques) might inadvertantly form the basis for international beliefs about what

other nations -- including third-world nations -- must do to be "modern."

A final, particularly significant, example of a leadership effect that ultimately redounds to everyone's detriment is the isomorphic rigidification of highly institutionalized orders:

To the extent that centralization of power and resources results in increasing homogenization of structural forms within an organizational sector (see DiMaggio & Powell 1983), then one must be concerned with the loss of this diversity. As Hannan & Freeman (1989:7) point out, such a reduction may diminish "the capacity of a society to respond to uncertain future changes." (Scott & Meyer 1983:140)

Lost diversity may prove particularly regrettable in fields such as nuclear waste disposal, where the "best" technologies are only barely adequate.

CONCLUSION

This paper has attempted to bring some coherence to a literature on organizational legitimacy that is, in reality, several distinct literatures -- strategic and institutional; pragmatic, moral and cognitive; legitimacy-building, legitimacy-maintaining and legitimacy-repairing. Until all of these traditions devote serious and sustained empirical attention to their points of overlap and divergence, any summary is bound to be partial, any conclusions are bound to be preliminary, and any recommendations are bound to be tentative. Nonetheless, given the disparate foci of their various contributors, the multiple legitimacy literatures display remarkable consistency, and their assertions, remarkable compatibility. In a discipline dominated by theoretical traditions that disagree even when they focus on a single phenomenon, such unexpected congruence is reassuring, to say the least.

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FOOTNOTES

¹Before preceding, a word about style may be in order. Most of the following discussion is couched in abstract and general theoretical terms and is broadly applicable (*mutatis mutandis*) to a wide range of public, private and voluntary organizations in a wide range of cultural settings. In keeping with the paper's charter to inform the U.S. Department of Energy's Task Force on Civilian Radioactive Waste Management, however, concrete illustrations will generally address the case of an organization (such as the Department of Energy) engaged in the management and disposal of high-level radioactive wastes in the United States in the 1990s.

²A terminological note may be in order: Institutional accounts frequently employ the terms "legitimacy" and "institutionalization" as approximate synonyms. When applied to a focal organization, the phrase "institutional isomorphism" (conportment with institutionalized models) generally also indicates a state of high legitimacy.

³Readers may note that these four types of moral legitimacy roughly parallel Weber's (1968:215) discussion of legitimate authority. Consequential legitimacy and procedural legitimacy both reflect legal-rational authority, although the former is "instrumentally rational" (based on the pursuit of particular goals) and the latter is "value-rational" (based on the fulfillment of rules of proper behavior) (Weber 1968:24). Categorical legitimacy reflects traditional authority, based on the longstanding designation of certain types of actors as worthy of exercising certain types of power. Finally, legitimacy based on individual leaders corresponds to the Weberian ideal-type of charismatic authority.

⁴Interestingly, in her later work, Zucker claims to "open Pandora's box, allowing disorganization to emerge as a central principle" (1988:25). While this may be true, she continues to treat disorder not as a cognitive goad for the meaning-making activity of institutionalization, but rather as an ongoing entropic tendency, to which relatively taken-for-granted and persistent institutions must respond.

⁵As an aside, it is interesting to note that technological uncertainty and value ambiguity may give even highly technical, market-driven sectors an institutional, "public relations" cast (e.g., the publishing industry). Conversely, when organizations act as "consumers" of their own products, even highly institutional sectors may take on technical elements. This latter state of affairs explains, for example, why religious organizations invest in theology as well as in ritual. Of more immediate relevance, it may also explain why an organization chartered to dispose of nuclear

waste might exhibit genuine concern not only for whether its procedures were legitimate, but also for whether they were effective.

⁶For an alternative treatment of these topics, readers may wish to peruse Ashforth and Gibbs' recent discussion of "the double-edge of organizational legitimation" (1990).

⁷Indeed, when two activities operate on different logics, the friction between their assumptions may actively delegitimize both -- and any organization that attempts to span the divide.

⁸This example highlights an important exception to the earlier suggestion that adaptive managers can "pre-test" their plans by asking, "What would make this organization look more proper, valid and appropriate to me?" When managers come from a specialized professional culture (e.g., nuclear engineering), their cognitive heuristics may contain distinctions (e.g., controlled vs. uncontrolled reactions, or nuclear fission vs. radioactive decay) that are essentially meaningless to lay audiences (cf. Kluckhohn & Leighton 1947:197). In these cases, what appears proper within the specialized culture may appear foolish within the larger political discourse.

⁹A strategy of decoupling may serve some legitimation ends better than others. Scott and Meyer (1983:137) hypothesize that "the exercise of structural controls is more compatible with [decoupling] than is the exercise of process controls, and the exercise of process controls is more so than the exercise of outcome controls."

¹⁰For an opposing view on the utility of coercion, see Zucker (1988:33).

¹¹This represents the converse of Meyer and Scott's frequently-cited observation that "'scrutiny' may well be ritualistic inasmuch as some constituents have a vested interest in not scrutinizing too closely for fear of raising issues which might jeopardize the legitimacy of the entire system" (Ashforth & Gibbs 1990:182).

¹²Actually, the negative effects of embeddedness are probably cross-level phenomena: Organizations receive the harshest punishments when their sectors are deeply embedded; within any given sector, it is the most marginal organizations that are the most likely to serve as scapegoats (cf. Erikson 1966). In this regard, it may also be useful to distinguish the decision to label certain entities as deviant from the decision to punish the entities so labeled. Arguably, highly embedded entities are less likely to be identified as deviants but, once identified, are more likely to receive harsh punishment.

¹³The interaction between restructuring and account-formation deserves to be highlighted. Often, besieged managers reflexively attempt to deny, excuse or justify alleged wrong-doings en toto. Restructuring, however, creates the option of selective confession: Rather than offering an exculpatory account that may strain audience credulity, the organization can admit that some limited aspects of its operations were flawed and can then act decisively (and visibly) to remedy those flaws. Not only do such selective confessions enhance long-run credibility, but also they generally resolve the immediate crisis of meaning far more effectively than would an initial wholesale denial coupled with a subsequent, contradictory restructuring.

RECOVERING PUBLIC TRUST AND CONFIDENCE
IN MANAGING RADIOACTIVE WASTE:
SUMMARY OF WORKSHOP PROCEEDINGS

NATIONAL ACADEMY OF PUBLIC ADMINISTRATION

Prepared for the U.S. Department of Energy
February, 1992

PREFACE

The Director of the Task Force on Civilian Radioactive Waste Management of the Secretary of Energy Advisory Board, United States Department of Energy, asked the National Academy of Public Administration to convene a group of approximately one dozen individuals to attend a two-day, "state-of-the-art" workshop concentrating on the pragmatic issue of how institutions establish their legitimacy and credibility with significant members of their task environments.

The Academy invited a carefully selected group of managers and other individuals who been otherwise involved in the matter of institutional legitimacy to participate in the Workshop. The group represented a diverse set of backgrounds and organizational settings. The Workshop was held in Alexandria, Virginia, on October 31 and November 1, 1991. (See Appendix A.) Also in attendance as observers were individuals from the Department of Energy staff members, contractor personnel, and other interested parties.

Each individual reviewed in advance selected background documents relating to the issue of the management of nuclear wastes. The Academy asked each of them to reflect upon their personal experiences in dealing with the management of substances that offer the potential of harm to the public, and to prepare a brief presentation describing their experiences and presenting their observations as to the most effective management practices that exist for dealing with such issues.

The purpose of the Workshop was not to propose priorities and program directions, but rather was to develop and present the considered views of the attendees on what is known about how organizations establish, maintain, lose, and regain public trust and confidence. The National Academy of Public Administration has been pleased to assist in this important effort.

R. Scott Fosler
President

INTRODUCTION

PROJECT ORIGIN

In 1989, the Secretary of Energy established the Secretary's Advisory Board to provide him with independent advice on long-range strategic planning issues affecting the Department. The Board is composed of approximately 30 individuals, including energy producers, consumers, and policy analysis specialists with knowledge of, and interest in, the broad set of activities for which the Department is responsible.

The Board conducts a large part of its business through Task Forces. As part of its program, the Board's Task Force on Civilian Radioactive Waste Management, which is chaired by Dr. Todd La Porte, University of California (Berkeley), requested that the National Academy of Public Administration (NAPA) plan and conduct a workshop on managing radioactive waste. The Workshop was to be designed to involve experts familiar with "hands-on" management of hazardous waste, radioactive waste, and related challenges involving the need for public trust and confidence. In parallel, the Task Force requested that the National Academy of Science (NAS) conduct a similar workshop involving scholars with expertise in research related to organizational credibility. Representatives from both Workshops will engage in discussions with the Task Force in a second workshop setting in February, 1992.

In its request to NAPA, the Task Force emphasized that the extraordinary challenges of developing a national system for managing and disposing of radioactive wastes were the initial stimuli for the Task Force and for its choice of the conditions of institutional trust and confidence as a principal problem. In order to strengthen public trust and confidence, the Department of Energy must attend both to the way that it deals with individuals and organizations in the outside world and to its internal policies and processes for meeting its responsibilities in radioactive waste management.

In response to a request from NAPA and NAS staff for additional information on the character of the nation's radioactive waste system, Dr. La Porte conceptualized and characterized the United States radioactive waste management system for the information of the participants, a number of whom could not be expected to have such knowledge given the diverse spheres of expertise represented among the group.

THE WORKSHOP APPROACH

The Workshop was chaired by Academy Fellow, Peter L. Szanton. It consisted of individual presentations by the participants based upon their personal experiences followed by discussion and questions. A summary discussion took place on the second day to capture the general conclusions of the participants and to identify and consolidate their considered views regarding management practices that facilitate the establishment, recovery and maintenance of public trust and confidence in institutions.

The presentations were arranged in four groupings in the order shown below, with the individuals involved in each shown as well:

Perspectives from the Environmental Community

- Dan W. Reicher, Senior Attorney, Natural Resources Defense Council

Management Lessons Learned in Nuclear Power

- Dr. John F. Ahearne, Executive Director, Sigma Xi
- Dr. Yves Kaluzny, Head, Nuclear Service, Ministry of Industry, General Director of Energy and Raw Material, French Government

Management Lessons Learned in Establishing and Operating Waste Sites

- Don J. Womeldorf, Chief, Environmental Management Branch, California Department of Health
- Charles W. Taylor, Chairman Emeritus, and Director, Nuclear Fuels Services, Inc.

Management Lessons Learned in Clean-up Situations

- Maj. Gen. (Ret.) George H. Akin, President, Akin Associates
- Thomas P. Grumbly, President, Clean Sites, Inc.

Management Lessons Learned in Transportation

- Leo Tierney, Director, Hazardous Materials Management, Union Pacific Railroad
- Mark Johnson, Director, Hazardous Materials Services, Roadway Express, Inc.

Other participants in the Workshop were: Ms. Gail Bingham, Vice President and Director, RESOLVE, World Wildlife Foundation; Dr. Daniel Metlay, Task Force Director; Dr. P. Brett Hammond, the Director of Academy Studies for NAPA; and Robert C. Crawford, the Project Director. Also in attendance were observers from the Department of Energy, from several of the Department's contractor organizations, and from other public and private institutions.

NATURE OF THE CHALLENGE

There was a general recognition among the participants that the challenge involved with the management of radioactive waste is one of the most complex and difficult issues facing our society. Some of the key characteristics of the waste management challenge include:

- The substances involved represent a substantial threat to individual and environmental well-being;
- Low public confidence;
- The public is reluctant to accept risks that are imposed upon them;
- The threat is essentially invisible;
- The signs of errors in management are hard to recognize;
- High level of oversight with intense government and public interest group involvement;
- There are many different "publics", each with its own special interests and concerns;
- People who were responsible for the problems may have gone away long before they surface;
- The consequence of errors is high, and there is a low tolerance for errors;
- Storage time encompasses generations;

- There are complications caused by the perceptions regarding past activities in both the weapons-related and the civilian programs; and,
- Organizational relationships and apportionments of responsibilities are complicated and complex.

In addressing the central issue of ways to ensure public trust and confidence, the participants generally agreed that the basic issue is whether or not the public believes that the government can and will do what it promises to do. They identified two fundamental questions facing public managers in any effort to improve public trust and confidence:

- What needs to be done to heighten capability in an organization to make change possible?
- What must be done to change organizational and individual behavior to achieve trust and confidence?

A consistent thread running throughout the workshop discussions was the recognition by the participants that faith in public and private institutions and large-scale technologies has been severely strained in recent years. Perhaps the most visible example of this phenomenon is nuclear energy and radioactive waste management.

The Department of Energy has acknowledged that prior governmental actions in this area have affected its credibility - executive branch officials have told like or made promises that were impossible to keep. The government has reneged on agreements and its spokespersons have not been credible and/or were not capable of dealing in an effective way with the concerned public. This is not to imply that the Department of Energy and its associated contractors as a total system are continuing along this path with a resulting low level of public confidence. Many individuals in the management system at all levels have recognized the problems inherent in past approaches and are endeavoring to improve the way that things are done. But the department may still not fully accept conflicting views about policies, approaches, or operations. Unfortunately, structure and tradition do not make such improvements easy to come by.

The Department of Energy is perceived by many on the outside as rigid and reluctant to divulge information. It is often seen as an agency that does not ask outside experts to perform reviews and appraisals and to make suggestions, and it is seen as tending not to involve affected outside parties in discussions of the need for a certain approach or facility, preferring to fall back on "Congress has given us a mandate", and the like. It is viewed by some as just going through the motions of public interaction, paying scant attention to inputs from the public and making little or no change in its preconceived directions based on the outside input. It is seen as making a decision about what is a proper course of action and then trying to convince the public that the Department's approach is the correct one.

In the view of a number of Workshop participants, the Department has not answered some basic questions about radioactive waste and the facilities existing or proposed to handle it, e.g. Why is this facility needed? Why is this option the one that must be followed? Why must it be done at the sites currently under review? Why must radioactive waste be stored underground?

One of the approaches to channeling public concern into constructive modes is a proactive program of risk communication. While there has been no strong legitimized statement emanating from the public process that gives the Department of Energy the right and need to convince the public that it should have, e.g. -nuclear power, a waste repository, etc., there may well be, in certain circumstances, a legitimate role for government in laying out certain parameters for such activities. As expressed in the report of a National Academy of Science study of risk communication:

Governmental attempts to influence citizens' beliefs and actions can be justified only to the extent that some legitimate public process has culminated in the decision that using risk messages to influence behavior serves an important public purpose. (Committee on Risk Perception and Communication, *Improving Risk Communication*, National Academy Press, 1989, pg. 90.)

SUMMARY OF VIEWS OF ACHIEVING PUBLIC TRUST AND CONFIDENCE

The participants suggested a range of management practices that the Department of Energy could initiate or, if in place, reinforce to increase the effectiveness of its radioactive waste management activities. Most suggestions fell into one of two categories: 1). Changing Approaches to the Public, or, 2). Enhancement of Organizational Capability.

OPENNESS

- Continued Secretary-level commitment and constant monitoring is needed to ensure that the Department and its subsidiary organizations use a more open approach in dealing with public stakeholders in the management of radioactive waste.
- A clear, simple overall strategy for the program, presented concisely, is needed for the public, the Congress, and Department staff.
- Appropriate levels of officials need to deal with public groups, in both one-on-one and public gatherings - Senior level officials need to deal directly with the public so that they gain first-hand knowledge of public concerns and so that the public feels that it is dealing with individuals with policy and technical knowledge and broad perspectives who can commit the Department to positive actions in response to public concerns.
- The Department must avoid deciding that a facility is needed and then to try to make the public agree with that decision. The public will ask, "Why must it be operated here, now, or at all?" If the Department responds that such a question is beyond the scope of the discussion, and that they want to talk about operating it, not why it should be run, the dialogue is lost, and prospects for effective communication and consensus become blurred.

- Achieve an understanding with local officials and the public in impacted communities that when problems arise they will be surfaced, addressed and dealt with in an open and responsive fashion and will be resolved as quickly and effectively as possible, bringing to bear all available resources of the Department.
- When severe problems are recognized at a given location, experience in a number of settings indicates that an effective method for dealing with such situations is to throw the doors open, admit the problem, engage in open decision-making with all stakeholders involved, and then continued aggressive, strong management leadership to work through the problem over time.
- Maintain continuing positive and open contact with public officials in areas impacted by waste management operations.
- Endeavor to do a complete and understandable job of communicating risk to affected parties in particular and to the nation in general.
- In view of the extraordinarily complex and potentially disastrous situation faced in some locations, the Department should take exceptional measures to keep the Office of Management and Budget and the Congress well-informed of the status of the program and what needs to be done to protect the population and the environment. This is especially evident given the resource limitations facing government at the present time.

PUBLIC PARTICIPATION

- The commitment to more open and complete public participation and involvement throughout the process needs to be institutionalized so that it is stable from administration to administration.
- Consider developing a structured partnership approach to general policy and planning issues and for specific sites. The Department could develop planning teams involving major stakeholders throughout the deliberation and action phases of a major activity. They would also monitor activities once in place.

- Consider options and approaches for implementing the French approach of highlighting and maximizing economic incentives and benefits to those individuals living in close proximity to radioactive waste facilities. This approach balances risks versus benefits.
- Expand the issues in which the publics affected by waste management activities can be involved and have some input. This could include conducting provisions for health screening over time in the communities surrounding a facility.
- Engage with the public and public representatives in joint data-gathering as well as in sharing data with the public after the government has developed it - for example, in site characterization activities.
- In cases of the sort of Yucca Mountain, in which the Department is charged with characterization of a site, it should supplement the layers of independent oversight of the characterization by setting up a small group independent of the Department with the ability and funds to work. This independent review group would feed back information to the Department and the scientific community representatives working with it.
- Obtain meaningful input from the public before decisions are made and urge the Congress to do the same *before* legislation is passed. For example, in addition to the traditional hearing process, key Congressional committees might be encouraged to engage key stakeholders as a group in exploratory and planning teams as it considers its approach to dealing with radioactive waste management issues.
- Design relationships with outside stakeholders in such a way that incentives for the groups are aligned with their self-interest. Consider their inputs seriously so they have an impact upon the decision-making process. For example, offer public interest groups the opportunity to monitor and evaluate implementation.
- Where the Department does not adopt stakeholder recommendations and/or suggestions, it should clearly communicate the reasons for non-adoption.

- Find and use additional ways to ensure that all of the most directly affected publics have access to their own independent sources of technical knowledge, such as structured linkages to universities and non-profit technical institutions. Respond to such expert inputs and judgments openly, rather than treating them as an unwanted complication that slows things down.
- Consider forming teams of responsible individuals working in the field of radioactive waste disposal and of individuals from communities near well-managed radioactive waste management facilities. Dispatch such teams into communities near, or being considered for, waste facilities to: provide real-life experiences of how waste management can be properly done; provide access to technical resources; and demonstrate that solid and concerned people are involved.
- The transportation industry has developed an activity called, Transportation Community Awareness and Emergency Response (TRANSCAER). This is a partnership between railroads, trucking companies, the chemical industry and communities. The consortium provides information, experts, and other resources that the communities can use in planning to minimize problems caused by the transportation of hazardous materials through the communities. A technique of this sort might be useful in radioactive waste management.
- An industry consortium, the Hazardous Materials Advisory Council, advises the Department of Transportation and is composed of trade associations, the Association of American Railroads, the American Trucking Association, chemical companies, container manufacturers and others. A similar mechanism might gain additional meaningful public interest input into planning for the radioactive waste management program. The mix of such a group should likely be expanded to include representatives of the environmental public interest groups.

BEHAVIOR

- Develop and promulgate a clear, simple overall program strategy. It should demonstrate that openness is the watchword, provide guidance as to how the Department plans to proceed to implement the approach, and assign accountability for making this approach an integral and effective part of the Department's operations.
- Provide the public with more, and more understandable, information dealing with both the nature of the need to manage radioactive waste along with the technical options for doing so, and the implications and risks associated with each.
- Educate Department staff and other stakeholders who will be involved in the planning process in dispute resolution techniques. Encourage them to participate in a process of education in this area and apply the lessons learned as they cooperate with each other in the planning process.
- Radioactive waste management is a complex and sensitive subject. Do not err on the side of low risks and low dollar costs when planning to deal with it
- Consider uncertainties of policy adjustment and resources. When promises are made - keep them!
- Indications are that the notification provisions provided for in negotiated agreements dealing with the management of radioactive waste are not always utilized as required by the agreement. If trust and confidence is to be maintained, such provisions must be followed to the letter. If true joint planning and stakeholder participation is in place, the stakeholders will be aware of the need to and the reason for revisions in milestones and the like well before any official notification is dispatched.
- The Department might consider using negotiated rule-making in selected instances in an endeavor to develop dialogue along constructive as opposed to adversarial lines.

- Reopen, reevaluate previous decisions (including those made years ago such as no reprocessing of fuel from the civilian reactors) to determine their current efficacy given changes in technology and public attitudes. Make certain that the basic issue as to whether certain things still need to be done at all is fully addressed.

ORGANIZATION

It is clear that behavioral change is not sufficient. The Department must have the necessary capacity to make it effective. This section provides the views of the Workshop participants concerning ways to enhance the Department's capability to accommodate the behavioral changes suggested above:

- Keep organization structure simple and responsive.
- Ensure that the assignment of roles among the various responsible agencies, private companies and the public and related groups are clearly specified and understood. Identify the significant stakeholders and spell out their roles carefully and fully.
- Ensure that technically qualified staff represent the Department in dealing with public groups as they participate in program planning and implementation. More staff may be needed.
- Provide sufficient authority to project officials to enable them to handle normal decisions and problems at their level.
- Eliminate differentiation between the management of defense-related waste and civilian waste.

- Establish a new agency or quasi-governmental entity to have as its sole responsibility the accomplishment of nuclear waste management and clean-up. Given the negative image that is the heritage of the past nuclear activities in this country and the overwhelming challenges facing the nation in dealing with the radioactive waste and clean-up problems, this is worth discussing again with Congress and the Administration.
- Continue to establish signed between the Department and various states which permit the states to oversee certain Department operations. These have positive effects in the states that have them.
- Consider having the public health impact assessments for waste sites performed by health authorities with community involvement rather than by entities connected with the Department. Implications are that more credence would be given to such assessments from a detached institution.

PROCESS

- Increase the range of decisions that are subjected to consultation with all affected parties, and be willing to cancel, modify or replace decisions when knowledgeable outside sources provide input that indicates change is needed.
- Develop heightened openness to change. For example, consider options that may be counter-intuitive to approaches based upon traditional technical analysis, especially where public attitude and motivation are concerned. Do not let the technical solution be the only determinant of policy and actions.
- Make a conscious and continuing general effort to break from traditional patterns when it is clear that they are no longer workable given changed and changing circumstances. Build in incentives for employees to stimulate changed approaches and avoid at all costs falling into the siege mentality that so easily results from constant attacks from without and frustrations within.

- Reduce restrictions on information about the program in general and individual projects in particular.
- Set specific and understandable objectives for project activities with realistic timetables. Subject objectives to critical, independent review and then move ahead, indicating the actions for adjustment and modification that were taken based on the reviews.
- Use the National Environmental Policy Act provisions vigorously and positively. Do not arbitrarily or frivolously exclude sites just because they pose problems. Be aggressive in setting and/or accepting strong and reasonable environmental standards and pursue their achievement vigorously.
- In dealing with difficult situations in waste management facilities issues such as are faced at Hanford, consider the establishment of a "remedy selection process" approach. This involves organizing a group of outside, concerned stakeholders is organized to assist with the assessment of options for correction of problems and utilization goals for portions of the reservation and to help in the implementation and assessment stages.
- Work to obtain from Congress and utilize the funds needed to satisfy its advertised clean-up plans. Where Administration decisions provide lower funding than that required, the Department needs to take the lead in revising its plans and informing affected parties of the implications of the reduction.
- When special shipping is required, contact carriers and all jurisdictions through which the shipment is being transported and provide detailed information on arrangements, risks, etc. Department representatives must accompany such shipments. There must be complete candor if state or local units, such as Governor's offices and emergency responders, and private sector parties are to be supportive and prepared to assist in safe passage.

- Communicate better with transportation carriers. Carriers lack clarity about the specific departmental capability to deal with emergency responses to transportation accidents.
- Provide local emergency responders and carriers with the same level of information and training about defense-related waste as they have for dealing with accidents involving civilian radioactive waste.

DEEPER THEMES AND GENERAL CONCLUSIONS

The participants in the Workshop agreed that there are individuals in the Department of Energy and its associated institutions who are already utilizing techniques designed to improve public trust and confidence. Although the participants identified numerous problems with the Nation's current approach to the management of radioactive wastes, and identified management practices that could be applied to improve the situation, there was consensus among those participants with knowledge of the Department's activities that clear improvements have been made during the administration of the present Secretary of Energy.

The Department has adopted a more proactive stance, with more emphasis upon identifying, surfacing and endeavoring to deal with problems at an early stage. For example, upon his assumption of the office, Secretary Watkins acknowledged that there are serious problems in the civilian radioactive waste management program. He restructured it, stretched out program milestones to be more realistic, obtained a well-respected program director, began to reach out to the public in a more effective way, and achieved a fuller and more open airing of technical and institutional concerns. Without question, and with the full recognition that difficult tasks, serious problems, and unresolved issues remain, the program is generally in better shape now than previously.

Workshop participants were asked to consider the radioactive waste issues from internal and external perspectives. They agreed that there was much interconnection between these internal elements (such as management control systems) and external components (such as public education), and that they had to be considered together. There are, for example, legislative and executive branch requirements designed to enhance the Department of Energy's management efficiency.

These are important issues, but no amount of effective management alone will achieve public trust and confidence in this area.

One of the important points that emerged from the Workshop deliberations was that the Department of Energy cannot expect to do the radioactive waste management job alone - and it should not be expected to do so. The Department must work to mobilize the support of others in the public and private sectors by bringing them in as fuller partners in the process than has been the case in the past. The potential partners must respond and contribute in appropriate ways.

One of the foundations for an effective partnership is a consensus on major issues facing the Department as it moves to meet its responsibilities. The workshop participants noted the lack of consensus on past or existing issues, such issues as Yucca Mountain, MRS, and weapons site clean-up. A more comprehensive partnership approach could of assistance to the Department as it moves toward a true national system for dealing with the radioactive waste problem.

Workshop participants discussed the following approaches to improving public trust and credibility:

OPENNESS AND MEANINGFUL PARTICIPATION

The prevailing *themes* running through the Workshop discussions were "openness in the process" and "meaningful participation". "Openness" was seen by the participants as the key to the achievement and maintenance of the public trust and confidence that is deemed essential if the radioactive waste management program is to achieve its goals. "Meaningful participation" was seen as encompassing the concept of openness, but going beyond dissemination of facts, problems, and approaches. Participation would provide opportunities for interested parties in the actual decision-making process. One can have openness without meaningful participation, but one cannot have meaningful participation without openness.

Participants believed that the lack of openness and meaningful involvement by the public and its representatives in the past has been a major factor contributing to the problems that the United States faces in the managing of radioactive wastes. The participants recognized that in the context of traditional management practices, the involvement of "outsiders" in the process has often been considered too time consuming, arduous, not helpful. From the manager's point of view, never/seldom/

sometimes works. However, most Workshop participants thought that the characteristics of radioactive waste management require responsible managers to operate as openly as possible.

Workshop participants recognized that openness in the management of the radioactive waste program requires a conscientious effort at all levels of the organization to identify all parties with a legitimate interest (the stakeholders) in an activity and to inform these parties at an early point in the planning and decision-making processes. This proactive communication should continue through the implementation and monitoring phases.

Effective openness gives stakeholders access to all relevant information and expertise. Openness also means that departmental officials must pay serious attention to stakeholder views, and be willing to adjust plans and implementing actions based on their inputs and thus help the nation achieve its goals. At the same time, it must be recognized that there is not just one "public" out there to be dealt with. There is a complex of "publics", each with its own needs and concerns. Thus the public must be carefully considered and various needs and concerns addressed as best they can be given resources available.

The challenge is to achieve a balance in which both the responsible public managers and all legitimate interested parties and communities share relevant information. While Workshop participants recognize it is not their role to specify to the Department of Energy precisely what that balance should be, they suggest the Department needs to search for a better balance in this regard than has existed in the past or exists at the present time.

A point made in the Workshop by a number of the participants was that, by and large, the American public, when it is adequately informed and involved, is quite understanding of the difficulties faced by government in dealing with severe problems in the face of constrained resources and other limiting factors. People have shown that they will work within these constraints if brought along as part of the team, and if they are honestly and openly dealt with. It is essential, however, that they have the feeling that the government representatives are trying to do the best job that they can in the face of difficult constraints over which they often have no control. One of the examples of such community understanding and cooperation being mobilized in the face of a perceived severe community threat was discussed in the

Workshop in the context of the aggressive activities to deal with hazardous materials clean-up and management at the Aberdeen Proving Grounds.

CHANGE IN THE MANAGEMENT PARADIGM

There was a consensus apparent among the Workshop participants that the Nation is undergoing a paradigm shift about the nature of the management of public organizations, particularly those which have a direct impact upon the lives of our people or of the world in which we live. The change involves a movement away from detailed pre-planning and analytic comprehensiveness, to participatory planning and learning and acceptance of the inevitability of some degree of error. It also brings with it a need to reconsider purely technically based courses of action and to make better decisions that take into account changing conditions and the needs and perspectives of those citizens and institutions who are affected by the decisions and resulting actions.

The Workshop participants believed that the Department of Energy, especially given the high degree of sensitivity and complexity involved in radioactive waste management, would be well-advised to work more aggressively to find ways of sharing responsibility and authority with affected parties to get the job done. At the same time, all concerned - the people and neighborhoods involved and/or affected, the technical community, Department management, its contractors and other supporting organizations, the Administration, and the Congress, must all recognize that such a paradigm change requires serious attention and work by all such segments of the affected institutions if it is to be properly accommodated and turned into an effective tool for concrete achievement. Movement in this direction may well result in a need to gain agreement for adjustment of time lines in given situations, because of the time required to achieve the full benefits that could accrue from such a move.

A staff member of the Office of Technology Assessment (OTA) in the Congress described an interesting approach to satisfying the need to consider the needs and perspectives of those citizens and institutions who are likely to be affected the actions of government. The OTA is known for having a well-honed and comprehensive approach to providing for extensive meaningful involvement of the principal stakeholder groups and individuals in the various studies that it undertakes. Greater participation of all stakeholders, while possibly requiring longer timelines in the early

part of activities, could result in a much less adversarial process than the current process, with less time being required overall. For example, it would appear that, to a considerable degree, the heavy use of litigation by public groups may be associated with the ineffectiveness or unavailability of cooperative means. A move to reduce the adversarial aspects of policymaking could result in less time being required to get the job done with far less residual bad feeling among the parties.

Inherent in such a role for stakeholders is the need for them to accept some responsibility for working constructively to make the process work. In this connection, a number of the participants made the point strongly that the Department must ensure that the stakeholders involved as partners in the process are legitimate representatives of a key segment of the public, and that individuals with private or hidden agendas are not enabled to disrupt an essential activity for their own ends.

Openness and meaningful involvement are critical in ensuring public trust and confidence. However, it must remain clear that the constituted governmental authority will retain the final decision authority for the ultimate course of action.

THE BOTTOM LINE

The Workshop participants recognized the extreme challenge faced by the Department in dealing with the issue of the management of radioactive waste. The situation has developed over many years, societal conditions and relevant technologies are dynamic, the cast of characters has been continually changing, and the nature of the hazards posed to the population and the environment are substantial.

The specific points and general conclusions presented in this report summarize the ideas that emerged during the Workshop. The participants hope that their observations — building as they do on the themes of openness, meaningful public participation, and a fundamental change in traditional management approaches — will be of assistance to the Department as it moves to dispel public concerns in this area and to get on with the task of managing the nation's radioactive wastes in a safe, efficient, and effective manner.

APPENDIX

WORKSHOP PARTICIPANTS

Peter L. Szanton - President, Szanton Associates; Former Associate Director, U.S. Office of Management and Budget; Research Director, Commission on the Organization of the Government for the Conduct of Foreign Policy; Fellow, Institute of Politics, JFK School of Government, Harvard University; President, New York City-Rand Institute. (Chairperson).

Dr. John F. Ahearne - Executive Director, Sigma Xi; Vice President and Senior Fellow, Resources for the Future; Chairman and Commissioner of the Nuclear Regulatory Commission; White House Energy Office and Deputy Assistant Secretary of Energy; Deputy and Principal Deputy Assistant Secretary of Defense; Office of the Secretary of Defense.

Maj. Gen. (Ret.) George H. Akin - President, Akin Associates; Commanding General, U.S. Army Test and Evaluation Command and Aberdeen Proving Ground; Deputy Commanding General, U.S. Army Communications-Electronics Command; Assistant Chief of Staff for Logistics, C4/J4/G4, Combined Forces Command/United States Forces Korea/Eighth U.S. Army; District Adviser, Vietnam, and other key assignments in logistics, operations research analysis, and maintenance at Ft. Lee, VA, Frankfurt, Germany, Anniston, AL, Chambersburg, PA, and Ft. Hood, TX.

Gail Bingham - Vice President and Director, RESOLVE, World Wildlife Federation; Senior Associate at RESOLVE, Center for Environmental Conflict Resolution (became part of The Conservation Foundation in 1981); planning positions in India and in local government in Washington State; National Board Member and former President of the District of Columbia Chapter of the Society of Professionals in Dispute Resolution; Chair of the Board of Directors of the Western Network in Santa Fe, NM.

Thomas P. Grumbly - President, Clean Sites, Inc.; Executive Director, Health Effects Institute; Partner, Temple, Barker and Sloane, Inc. (Consulting); Staff Director, Investigations and Oversight Subcommittee of the House Committee on Science and Technology; Associate Administrator, Food Safety and Quality Service, U.S. Department of Agriculture; Executive Assistant to the Commissioner, Food and Drug Administration; Examiner, U.S. Office of Management and Budget.

Mark Johnson - Director, Hazardous Materials Services, Roadway Express; Member, Board of Directors, Hazardous Materials Advisory Council (HMAC); Past Chairman, HMAC Education and Training Committee; Past Chairman, Hazardous Materials Committee of the American Trucking Association, Member, Summit County, Ohio, Emergency Planning Committee.

Dr. Yves Kaluzny - Head, Nuclear Service, Ministry of Industry, General Direction of Energy and Raw Material; Head, Fuel Cycle Department, Direction for the Safety of Nuclear Installations, Ministry of Industry and Ministry of Environment, French Government; Laser Fusion Research; Engineer, LaHAGUE reprocessing plant.

Dan W. Reicher - Senior Attorney, Natural Resources Defense Council; Adjunct Professor, University of Maryland Law School; Assistant District Attorney, Environmental Protection Division, Massachusetts Attorney General's Office, Law Clerk, U.S. District Court, Boston, MA; Staff Member, President's Commission on the Accident at Three Mile Island; Legal Assistant, U.S. Department of Justice, Hazardous Waste Section.

Charles W. Taylor - Chairman Emeritus and Director, Nuclear Fuel Services, Inc.; Manager, Nuclear Fuel Technology, Manager, Commercial Reprocessing Plant Design and Construction, Manager, Design and Construction of Reactor Materials Plant, W.R.Grace; Research Technologist and Pilot Plant Operator, National Lead Company; Research and Development Chemist, Vitro Corporation of America (Manhattan Project).

Leo Tierney - Director, Hazardous Materials Management, Union Pacific Railroad; the last thirteen years of his thirty-one years with Union Pacific he has been responsible for assuring hazardous materials regulatory compliance and for managing hazardous materials emergency response efforts; prior to this period he served in various positions in the engineering department; currently, Vice-Chairman of the Hazardous Materials Advisory Council (a trade organization which represents shippers, carriers, and container manufacturers).

Don J. Womeldorf - Chief, Environmental Management Branch, California Department of Health Services; also, while with the Department, has had administrative responsibilities in vectorborne human disease management, water management, radioactive materials management, and other programs relating to protecting human health through environmental surveillance and control.

DEPARTMENT OF ENERGY REPRESENTATIVE

Dr. Daniel S. Metlay - Director, Task Force on Civilian Radioactive Waste Management, Department of Energy; Research Scientist, Brookhaven National Laboratory; has been involved in several studies of nuclear waste management, including the Nuclear Regulatory Commission's Task Force on Goals and Objectives, the Office of Science and Technology's Interagency Review Group on alternative technological strategies, and the Office of Technology Assessment's Report to the Congress; has conducted research on public attitudes toward technology, on error correction in Federal bureaucracies, and on the role interest groups play in the regulation of health and environmental risks; was a Professor at Indiana University and the Massachusetts Institute of Technology.

NAPA STAFF

Dr. P. Brett Hammond - Director of Academy Studies, National Academy of Public Administration; Associate Executive Director and Acting Executive Director, Commission on Behavioral and Social Studies and Education, National Academy of Sciences; Faculty Member, University of California at Los Angeles and Berkeley,

working in American State, local and national government and bureaucracy policy analysis, science policy and organization theory; served as Associate Editor of *Policy Sciences* and as a consultant to the Office of Technology Assessment.

Robert C. Crawford - Project Director, NAPA/DOE Workshop; Executive Vice President, CSG Holdings, Inc.; President, CEO Support Services; Director, Intergovernmental Science Program, National Science Foundation; Assistant Associate Director for Research Utilization and for Civil Preparedness Planning, Federal Emergency Management Agency; Deputy Director, State and Local Programs, and Deputy Director for Federal Coordination, Office of Economic Opportunity; Program Analyst, Division of Military Application and Executive Assistant to the Manager, Schenectady Naval Reactors Operations Office, Atomic Energy Commission.

HIGHLIGHTS OF PARTICIPANT PRESENTATIONS

DAN W. REICHER - As a member of the environmental public interest group community, Mr. Reicher presented views on radioactive waste management from that perspective. He began by indicating that his organization, and, in fact, several of the national environmental organizations, have long supported geologic disposal of nuclear waste, but he indicated that his organization has long opposed the monitored retrievable storage concept. His organization feels that nuclear power as an energy source may warrant further study, but that the industry should compete on a level economic playing field. Mr. Reicher commented that past program implementation activities and the current program, which provides for the characterization of a geologic site in only one state, are not likely to cause a large segment of the public to have trust and confidence in the program.

With regard to the issue of improving public trust and confidence, and after noting Secretary Watkins' acknowledgement of past problems and his moves to improve the program, Mr. Reicher advanced five proposals for further improvement: 1). the Department must continue to acknowledge past mistakes as they are noted and really endeavor to change; 2). public access to information and lines of communication must be improved; 3). it must be recognized that there are many publics to be

dealt with; 4). recognize that merely providing mechanisms for public participation is necessary by not sufficient; and, 5). standard setting must result in the establishment of strict standards with tight enforcement.

DR. JOHN F. AHEARNE - Dr. Ahearne began by posing several fundamental questions that the Department is facing: How does one get Yucca Mountain approved as a repository? How does one get the public to accept the clean-up programs at Hanford and Rocky Flats and so forth? How does one get the public to accept starting up at Rocky Flats and Savannah River? How to improve the public confidence in the Department? He pointed out that these are separable questions, they are not the same. He mentioned a study which he chaired for the National Academy of Science which resulted in a book dealing with the communication of risk - and highlighted the fact that the Department of Energy's programs are almost all on the wrong side of the factors affecting how risk is perceived and evaluated. They are unfamiliar, they are not understood, they are not controllable by individuals, and so forth - it has nothing to do with the Department of Energy. Programs such as the radioactive waste program fall on the side of the equation that increases public concern.

A second problem is that there is no readily acceptable need or benefit. What is the Department's answer to the question of why does it have to be built here? - or even, why does it have to be built? With regard to a geological repository, there seems to be no good standing answer to the question of why it needs to be built. Dr. Ahearne then lists some specific Department problems like lack of credibility based upon past performance, a feeling of many that the Department is incompetent, and the weapons program which is an albatross around the neck of any waste management program. In the conflict and confusion over risk questions often the communication process is at fault or at least exacerbates the problem. Risk communication in the public debate over radioactive waste management is successful to the extent it raises the level of understanding of relevant issues or actions among the affected and interested parties. People tend to strongly believe that the costs and benefits are not equally distributed, they do not agree on which harms are most to be avoided or which benefits are most worth seeking, and finally, as citizens in a democracy they really expect to participate in a debate and want their participation to lead to some

effect. Many times Department staff representatives sent to deal with the public are not competent, they are restricted in what they can say, they cannot answer questions, they cannot engage in discussion. The Department in general is rigid and does not listen - it does not like to do critical reviews and it does not like to have knowledgeable outside experts do critical reviews. It needs to have more dialogue and openness.

DR. YVES KALUZYNY - Representing the French government, Dr. Kaluzny focused in his presentation on his country's large scale nuclear energy program with regard to both the power plant and the fuel cycle facilities. He indicated that nuclear energy now generates about 65,000 megawatts of power (75% of electricity production), with five more plants under construction with more planned by the end of the century. Dr. Kaluzny described the plants involved in the fuel cycle, and indicated that there are two surface radioactive waste repositories at the present time, with additional interim storage facilities. The program originated as a military program in the 1950's - the substantial civilian power activity began in 1974 after the international oil crisis. The program is deemed to have succeeded for several reasons - in particular, the public's confidence in French nuclear technology as it was developed in the weapons program, the considerable political stability over the period during which the development was accomplished, and the significant capability of the country's industrial organizations.

As to the choice of sites, the majority were selected before the Three-Mile Island accident by a process of pre-selection and then negotiations were begun with local political leaders. In this process, the leaders were allowed to choose one of the sites, and explanations were then made to explain the economical advantages that would inure from the establishment of such a nuclear power plant in their area. In connection with existing sites, the opposition never stopped any construction, mainly due to the good confidence and trust that the local people had in the utility company involved. Recently, development has become more difficult due to the emergence of the ecological movement. Still, no existing nuclear sites, save for one which became a symbol for the anti-nuclear movement in France, have been abandoned because of public protest. Dr. Kaluzny indicated that there is a need for improvement in the general agreement or consensus about the desirability of nuclear power in France. He

advanced certain requirements for public trust and confidence - such as, good communication on what nuclear energy is and why it is needed, good information on safety considerations, communication before site selection, local committees at each site with wide representation who are kept fully informed, opening of the facilities for visits, and use of general access information systems to gain details on nuclear status in the country. He pointed out that there is no opposition to surface repository sites in France, but that, while there has been significant movement toward the identification of a geologic site, there is substantial opposition to this approach.

This activity has resulted finally in a decision to identify two sites which will be subjected to a 15-year study. At that point there will be a debate and a decision will be taken on whether or not to have a geologic repository, and which of the two sites studied, if either, will be designated to serve that purpose. Dr. Kaluzny described the French reprocessing facilities, the difficulties encountered in siting a new plant and how they were overcome by strong local involvement, and in particular, by the positive economic impact on the area. Many jobs have been created, local tax revenues have increased by 12 times in ten years, and grants and loans for economic development have been awarded. The key is that a true partnership was established and benefits have been factored in to counterbalance the inherent risks. Plant capacity has been increased, with absolutely no problem of acceptance.

MAJ.GEN.(RET.) GEORGE H. AKIN - General Akin described lessons learned at Aberdeen Proving Ground during his assignment there as Commanding Officer. While he was dealing with the serious environmental problems that he encountered upon his arrival at Aberdeen, the General also had to deal with similar issues and problems at other facilities under his command such as the White Sands Missile Range, Dugway Proving Grounds, the Cold Regions Test Center in Alaska, and the Tropic Test Center in Panama. He developed a model for clean-up activities that was ultimately adopted by the Department of Defense for implementation across that system.

As General Akin assumed command, there were three senior civilian employees under indictment for pollution violations, and the installation was not doing at all well in managing the hazardous materials which were a part of or which emanated from its activities. Relentless press coverage was occurring, the Federal Bureau of

Investigation, the Environmental Protection Agency, State and local agencies all were involved. The organization was in disarray, there was a high level of workforce distrust, and no single entity was in charge. General Akin opened up the gates to all parties, calling a meeting to discuss the situation and what was going to be done about it with all parties affected, the Aberdeen staff, EPA, State agencies, the Baltimore Sun, etc. These meetings were held every month - a two-hour session, chaired by the General. The goals of the meetings were twofold: to inform all parties of the problem and to let them know that they were part of the solution, and, to restore credibility by demonstrating in the open that the organization was trying to clean up its act and do what was right.

The staff briefed the General in the open about problems and corrective actions - no holds barred. Strong management action was taken to specify policy and operational controls in activities affecting environmental quality, including disciplinary measures for improper actions whenever appropriate. Significant dollar resources were aggressively sought to assist in the clean-up activities and much of that requested was obtained, some through the Superfund authority. Staff was trained and motivated to perform properly, close work was done with both Federal and State environmental protection staff members, and significant efforts were expended in educating people both about the problems and about what was being done to resolve them.

General Akin advanced numerous suggestions about how managers can improve public trust and confidence, among these are: elevate issues to the management level where people have the authority and can command the resources to do something about a bad situation, be open and honest, get all interested parties involved and helping with the solution, prioritize problems in order to make the best impact with available resources, and get the media on your side. He stressed that there comes a time when one must make the best decision possible given what is known at that time - one must bite the bullet, do what needs to be done, and move on.

THOMAS P. GRUMBLY - Mr. Grumbly began by observing that, while there may be a potential trade-off between the time it takes to get to solutions to problems and the mobilization of the necessary level of public trust and confidence to make truly meaningful decisions, his experience is that if more time is spent up-front

in the decisionmaking process, much less time is spent at the end fighting problems. However, to achieve recognition of this is difficult, especially if a situation is viewed as a significant emergency that appears to be dealt with immediately.

Mr. Grumbly, while acknowledging the extreme difficulty of the radioactive waste management problem, expressed his feeling that there are ways to approach it. He described the American culture as an adversarial one in which we believe that truth comes out of an adversarial process in which both sides present their best case and out of that come the best solutions to problems. Accompanying that, he sees a low level of political participation and education in the society at the moment. Mr. Grumbly pointed out that when these characteristics are coupled with issues that involve scientific bases that are not established, large problems are created.

Mr. Grumbly's organization is involved in the clean-up of waste sites. Involved in this are: the achievement of agreement among responsible parties as to what each will have to pay, the oversight of the technical side of clean-up, and the management of clean-ups on site. In Mr. Grumbly's opinion, it is important in dealing with the sensitive and complex issues surrounding radioactive waste management that managers remain on the lookout for opportunities to address the issues and problems that are counter-intuitive in the sense that one does not always go with the best analytical approach. In particular, he feels that the right people have to be involved from the start if the credibility that is so critical to organizational achievement is realized. These people have to have a significant degree of independence and appropriate incentives.

Mr. Grumbly emphasized that science cannot be imposed on the public - one must develop a dialogue about what the right answer is and what the uncertainties are with a view to achieving a gradual convergence of views rather than having one party dominating the other. He sees a need for the scientific community to be more empowered in terms of the influence of their contributions to the process and a need at the community level to ensure that all stakeholders in the process have the advantage of the scientific knowledge that is available. In radioactive waste areas, the Department should keep the organization and the process simple and should find a better way to set objectives that are specific to specific sites. Individuals at the field level must have the authority to make decisions, the Department must keep its promises, and continuing oversight of contractors is required.

DON J. WOMELDORF - Mr. Womeldorf has been involved in the planning for a low level waste facility for California. He has also been involved in the development of the Southwestern Compact with the States of Arizona, and North and South Dakota. The California Department of Health Services had the lead in adopting regulations which were compatible with those of the Nuclear Regulatory Commission. It was also instructed to find by a competitive process a private firm whose job it would be to be a so-called license designee. The designee was to put all the money up-front, to find a site, to characterize it, and then to apply to the Department for a license.

If a license is granted, then the license designee will operate the facility under the regulation of the Department. Mr. Womeldorf laid out in considerable detail the process that has been gone through to date. Regulations were adopted, a license designee was selected (US Ecology) in 1985, and in 1986 and 1987 they engaged in a massive site selection effort. They began with 18 potential sites, finally selecting one for characterization, submitting a license application in 1989. Review of the application has been underway, while, at the same time, an environmental impact statement is being prepared - a license decision is anticipated imminently.

The Department has a traditional advisory committee that provides overall policy guidance and direction. It also has ad hoc advisory groups which are described by Mr. Womeldorf as being quite important. These groups are set up to deal with issues as they surface in such areas as liability, desing of trenches, fiscal review, mixed waste management, etc. Typically, everybody who is affected is included in the ad hoc groups. They have worked well. The company mounted a public information and involvement campaign in the 18 candidate site areas, going out directly to the citizenry. In addition to producing and disseminating printed information, they provided money to the League of Women Voters to form and coordinate a citizens advisory committee, with representatives of diverse interests in the three counties that were involved. Three rounds of meetings were held in the affected desert communities, to collect comments, then coming back again to show what they had done based upon the comments. Credibility was being established, and the meetings concluded with a third round which ultimately reduced the candidate areas to three. Then, the League of Women Voters formed local advisory committees in the three finalist areas and these met frequently to review site characterization data as it was received.

Ultimately, the site determined to be the technically best was selected. The committee for that site remains in place, and it is intended that it will become a monitoring committee if and when the site becomes operational. In addition to all of the above three public scoping meetings were held, with extensive public agency and entity involvement. There were two hearings of a legislative rather than an adjudicatory nature in 1990 and 1991, and work is still being done as a follow-up to the latter hearing to consider somewhere in the range of 4,000 comments from 850 commentors.

As to lessons learned, Mr. Womeldorf stressed that public and public agency involvement is essential, one must remember that whatever you do you will not reach everyone who is affected, no matter what efforts are made you will not make believers out of everyone, a good tactic is to get people to visit operating sites, do not shrug off perception because that is fact to the perceiver, recognize that there are hidden agendas that you can not directly address and respond to the presented issues so they will stand up in court, and remember that an agency has responsibilities assigned by law, these must be satisfied, the work must go on - with as much public involvement as can be accomplished.

CHARLES W. TAYLOR - Mr. Taylor reflected upon forty years of experience in the field of nuclear energy, zeroing in especially on his experiences in siting a facility in the mid-1950's. He indicated that the societal setting at that time was significantly different than that faced by managers in the radioactive waste management area today. After looking at a site which met his company's specification in terms of proximity to Oak Ridge and transportation, they encountered resistance in the community for economic competition reasons. The locus of their search for a site was then changed because they had no wish to be in a community which did not really want their operation. They exercised one of their back-up options and focused, and eventually sited their plant in a neighboring state where it remains to this time.

Mr. Taylor's point in terms of lessons learned was that do not put yourself in an adversarial position from a siting standpoint if it is not absolutely necessary for you to do so. In the second site, his company reached out to the community, having local political people coming into the plant before it opened for familiarization. Mr. Taylor emphasized the need to have good communication between the people who

are regulating the operation as well as the community itself. He has paid special attention, as a plant operator to being particularly proactive and responsive to the individuals regulating his operation, paying special attention to bringing regulators from the Federal and State governments together to ensure consistency of their approaches. The need for communication has increased as more players have entered into the ballgame and the company has remained proactive in dealing with them.

Mr. Taylor emphasized that solid safety practices and quality control are essential. The key in this area is top level endorsement and follow-through to see that high standards in these important functions are maintained at the operational level. Should accidents occur, facts should not be held back, they should be revealed - the community will be more understanding than might be expected. Such openness goes a long way in maintaining organizational credibility. Mr. Taylor pointed out that, while critical incidents in nuclear facilities are a most serious matter, care must be taken to keep them in the proper perspective in terms of the real hazard posed. In this connection, it is important to understand the waste management business from its real health implications and not from what is perceived by the anti-nuclear community and by individuals who do not understand the technical aspects.

Mr. Taylor indicated that technology exists for safely storing high level wastes and made the point that at some future time when political and economic atmospheres are right it might well be that the considerable valuable material placed in storage might be recovered. Plans were made to close the fuel cycle through reprocessing and reclamation at a New York State site in the 1950's, companies joined together to do the job, the Congress gave a 15-year commitment, and the fuel backlog to that time of some 600 tons of fuel were processed before the plant was shut down. At that point, the plant was expanded to a capacity of up to two tons per day in anticipation of increased power reactor activity in the country. The plant did not operate at the expanded capacity due to Nuclear Regulatory Commission earthquake requirements, and it was turned over to the Federal government in 1972. Mr. Taylor's company was cited by President Johnson for excellence in developing a working relationship between the government and the private sector.

LEO TIERNEY - Union Pacific has about 29,000 employees and operates in 19 states and approximately 3,000 political subdivisions, with a resulting strong grassroots presence in its area of operation. Mr. Tierney described their plant as 100 feet wide and 20,000 miles long. They transport more than 300,000 carloads of hazardous materials a year - this represents about 8% of their business. State and local government are a major factor to be taken into account as they perform their business function, with much oversight involved from that quarter.

The company's public trust and confidence is tested on a daily basis. Union Pacific has been operating at locations for more than 100 years. While they may have used state-of-the-art practices in the disposing of wastes during that period of time, 50 years ago the state-of-the-art was crude to say the least. They have grade crossing problems, they have problems associated with the construction of new yards or the expansion of existing yards, and they have problems associated with hazardous materials transportation. They do have a common carrier obligation to transport goods at a reasonable rate, and therefore cannot avoid risks by refusing to transport certain commodities. They have to manage that risk. They have approximately 275 non-accident-related releases of hazardous materials during the course of a year, and may experience six or so major accidents during a year involving hazardous materials. These incidents with hazardous materials are probably the most frequent test of their public trust and confidence level.

If such public trust and confidence did not exist, they would quickly lose their ability to manage the outcome of a hazardous materials incident. Furthermore, there would be heightened attempts at the Federal, State and local levels to regulate their operations in an effort to improve hazardous materials transportation safety. One of the best ways to establish trust and confidence in their activities is through their emergency response efforts. The railroad has established routine contacts with the emergency response community throughout their territory by frequent contacts by their 23 special agents. The special agents are members of the railroad police department and are trained in hazardous materials response. They provide training in for fire fighters in fire stations, state fire schools and at regional conferences. In addition, they sponsor a hazardous material tank car safety course at Pueblo, Colorado, twice each year. They have good in-house capability to respond effectively to hazardous materials emergencies that occur on the railroad through their special agents.

The railroad must maintain its credibility with the State and local governments with which it must deal. It maintains a presence in the state houses and contacts local governments frequently. The local manager is the key at the community level. To ensure public trust and confidence, managers must follow-through on commitments. They must respond positively to regulators and cooperate in ensuring that standards are met. Mr. Tierney mentioned his involvement over the years with the Department of Energy and identified several issues which have resulted in some adversarial relationships. These included: special trains or dedicated trains, and the training of local responders to handle transportation related emergencies - there is a program to provide emergency response training on the civilian side, but not on the defense side.

Mr. Tierney concluded by stressing the key role that the nuclear power industry itself has in the matter of public trust and confidence and raised the issue of reconsideration President Carter's rule on reprocessing with the thought that such activity would lessen the pressures to get a geologic repository in place. He also wonders why the nuclear power industry does not have the responsibility of designing, constructing, owning and operating necessary waste disposal rather than relying on the government.

MARK JOHNSON - Mr. Johnson's company, Roadway Express, Inc., does not transport waste materials, including nuclear waste. It does, however, transport a lot of hazardous materials, particularly chemicals. The company has about 650 terminals, and operates in over 20,000 jurisdictions in all 50 states. It also has operations in Canada, Europe, and in American territories. In a typical day, the company will pick up and deliver about 60,000 shipments, most of which are less than 1,000 pounds. With an average shipment time of four to five days, they have in transportation about 300,000 shipments at a given point in time. Public trust and confidence is a factor in everyday operations in every Roadway facility.

By way of additional perspective on his personal approach to the issue of public trust and confidence, Mr. Johnson mentioned that he is involved in his home community in a county planning committee that deals with chemical issues, including a local Superfund site. He is also Chairman of an enforcement committee that makes recommendations to a local prosecutor on enforcement actions. Mr. Johnson

indicated that the trucking industry in general has a low level of public trust and confidence. The public does not believe that there is a high level of oversight of the industry, but, particularly with regard to the larger and more responsible carriers, there is such high oversight and a high level of enforcement. In terms of the public view, there is a high consequence of error in terms of disruption of traffic flow in particular, with an accompanying low tolerance for such error to the perhaps tens of thousands of individuals delayed by an incident on a beltway in a major metropolitan area. The industry has had for years a siege mentality stemming initially from the it is both Federally and State regulated, almost a public utility attitude. Also, the public perceives the regulators as representing some other interest than the public.

The chemical industry, like the trucking industry does not enjoy a high level of public trust and confidence, and the two together as they often are in transportation are a bad combination. Both public and private sector organizations in the country have very little credibility given past events. The lack of credibility comes more from not telling the whole truth as opposed to lying. All institutions, and the trucking industry is doing this, must begin to reach out to the public and make an effort to deal with people on a local basis to become a part of the community. Confidence must be gained, or objectives sought will not be achieved, in either the public or private sectors. Mr. Johnson described the public outreach efforts underway in the trucking industry, such as America's Road Team which visits communities to show that truck drivers are real people and to enter into dialogue with the communities. Roadway does this from its own locations as well.

He also described TRANSCAER, Transportation Community Awareness and Emergency Response, a planning group which helps communities plan for transportation emergencies, offering information, resources - it reflects a partnership between railroads, trucking companies, the chemical industry and the community and it seems to be working. Mr. Johnson pointed out that matters clearly are the community's business if they affect the health and safety of the community. Building trust and confidence is a long process. One must listen to the community, not just interest groups - there must be willingness to change plans to accommodate the desires and needs of the community if the just is going to be properly done. Promises must be kept, even at the cost of missing deadlines. Success in improving the credibility of the trucking industry will determine in the long run whether the industry will continue to be in business and be competitive.

MANAGEMENT LESSONS LEARNED IN CLEAN-UP SITUATIONS

MAJOR GENERAL (RET.) GEORGE H. AKIN

Prepared for the U.S. Department of Energy
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Throughout my 35 year career as an Army Officer I have always believed that the Army, the Department of Defense and, in fact, all Government Agencies are too secretive in what they do. I know from my years of military experience that we have been too prone to classifying too many things "Secret" to "Lock the Gates --- Don't let anybody know," and in fact to adopt an almost "Siege Mentality." Particularly, when there is a catastrophic incident that invariably occurs with resulting intense media and public scrutiny. It is unfortunate that we the "Government" have developed this public image of being less than "Open and Honest" because it has also been my experience that 90 percent of what the government does is for the public good. We should be advertising that fact rather than continuing the defensive paranoia that has developed over the years in almost all government agencies.

This then is the challenge to the Department of Energy; how do we change a "perceived" bad image? How do we let the American people know the actions that are being taken in the disposal of hazardous waste are for the public good, that the environment is not being harmed nor damaged so that our children and grandchildren will enjoy the same or better environmental quality of life that we have enjoyed. There is of course no easy answer and the "battle" will not be won overnight, but there are a number of actions that the Department of Energy can take to stop and even turn around the erosion of public confidence in a government agency that is so vital to our nation's future.

The actions which will be described and recommended are those which have been used so successfully at Aberdeen Proving Ground (APG), Maryland, from 1988 to the present. The model which was developed at APG was ultimately adopted by the Department of Defense for implementation throughout the DOD system. Although the solutions that were used at Aberdeen Proving Ground were developed for Clean-Up Situations, they were successfully applied in nearly all environmental actions throughout the Test and Evaluation Command: White Sands Missile Range, New Mexico, Dugway Proving Ground, Utah, Yuma Proving Ground, Arizona, and other Test Ranges in Alaska, Indiana, Alabama and Panama.

No one model will fit all the environmental actions that the Department of Energy must accomplish in order to perform its mission. However, there are what I consider "Common Sense" rules which were developed during my 38-month tenure as Commanding General of Aberdeen Proving Ground, which will apply in most

cases. In actuality, these rules reflect the lessons that I learned in the course of my military leadership experiences with environmentally related issues throughout my 35 year career.

These rules are as follows:

THE "BOSS" IS RESPONSIBLE

Whatever the size of the organization there is one individual who is responsible for everything that the organization does or does not do. This is a tenet that is understood by all but in its day-to-day execution there are many organizations where the BOSS is invisible not only to the outside world but more importantly to his/her employees as well. This is a situation that is totally unacceptable in today's environmentally aware public, community, state and Federal agencies. If an action or material is hazardous to the environment, then the leader who is responsible for an activity in a given community must be highly visible and he or she must be "In Charge." The public demands it!

THE ORGANIZATION MUST HAVE DEDICATED, TRAINED QUALITY PEOPLE

Any organization which is dealing with environmentally hazardous material such as nuclear waste must have exceptional personnel. Management must recognize this "up front" and if the talent is lacking they must take those personnel actions which are necessary to correct the situation. This is done through the recruiting of highly skilled and educated people. Their pay grades must be more than competitive with the marketplace so that they do not leave after receiving expensive training. There must be a system of rewards and punishments with emphasis on rewards. All employees wish to be recognized for good work and they must feel wanted and appreciated. With the sensitivity of environmental actions and the ever present threat of Federal indictment which was initiated by the Justice Department against three civilian employees at Aberdeen Proving Ground, many government workers feel threatened in their jobs and rightly so. When the three senior civilians were subsequently found guilty, fined and given community service sentences, a shock wave was sent through all civil service personnel who work in environmentally sensitive jobs. What made this incident even more demoralizing was the fact the Army could

not provide legal support for the employees' defense because they were charged with a felony. Estimates were given that their legal fees ran as high as one hundred thousand dollars each.

Because of this court case, many top personnel have left these sensitive positions and others are now looking for assurances from management that they, the employees, will be legally supported in their job related actions as long as they are not doing anything criminal.

ALL ELEMENTS OF THE ORGANIZATION ARE COMMITTED AND INVOLVED IN THE ENVIRONMENTAL MISSION

In too many government organizations only the operational elements are involved in the day-to-day task of accomplishing the environmental mission. This is a mistake! *Every* employee is an environmentalist and all staff elements must be involved. This includes Personnel, Budget and Resources, Public Affairs, Legal, Engineering, Logistics, etc. When monthly staff meetings are conducted for the BOSS on environmental matters he or she must insist that the senior leadership/management of the organization are in attendance. This would include Directors, Division and Branch Chiefs and those individuals directly involved. Other desirable attendees at environmental meetings and briefings will be discussed in subsequent paragraphs.

ASSIGN RESPONSIBILITIES - SHARE ACCOUNTABILITY

When the three senior civilians at Aberdeen Proving Ground were indicted and found guilty of knowingly condoning the dumping of hazardous waste illegally, the rules in the way government employees conduct environmental business changed dramatically. The defense used in the past, "that I was just following orders," no longer applies. Additionally, the world and, in particular, the United States, has become very environmentally conscious over the past several years. There has been a tremendous proliferation of complex laws and regulations which are being produced on a almost daily basis at local, state and federal levels. All of this combined has caused government employees to be very sensitive as to the ground rules under which they must work. It has required senior level management, the BOSS, to clearly define in finite terms the job parameters in all areas of environmental re-

sponsibility for his personnel. Who is accountable and what are they accountable for must be clearly spelled out. Additionally, employees want to know that senior management "will be there" if something goes wrong. Will the BOSS take his fair share of the blame is a frequent question? The smartest thing that the Commander, President, or CEO of an organization can do is follow the advice and practice of President Harry Truman- "The Buck Stops Here."

ESTABLISH RAPPORT WITH COMMUNITY LEADERS, LOCAL AND STATE ELECTED OFFICIALS, AND REGULATORS AT ALL LEVELS

No federal agency, Department of Energy, Department of Defense, or others can succeed without the total involvement of all parties. This is where the BOSS must be highly visible, take charge, and clearly define what he and his organization are trying to do - be it cleaning up a hazardous waste site or finding a site for storage of nuclear waste. This is done through education of the community and regulators, honesty, openness, and candor. Or stated another way, we "open the doors" and make all interested parties, local, state, and Federal, a part of the solution and not part of the problem. We familiarize one and all with our operations. We encourage open exchange. We seek advice on issues but challenge gray areas. And let there be no misunderstanding. There are many of these with the huge number of laws and regulations. Regulators at all levels are finding it extremely difficult to give consistent and good interpretations. It was our experience that each EPA Region translated and enforced the laws differently, and the same was true from state to state. Not only on enforcement and translation of the law but also in the interpretation and writings of consent agreements.

ESTABLISH PRIORITIES

A Federal agency such as Department of Energy has too many requirements and not enough resources. Priorities must be set with the full understanding and hopefully concurrence of all parties. This is where rapport and openness with officials and regulators is so important. They must understand that resources are finite with infinite requirements. Some actions or events will slip or not be done at all but if all parties have been kept properly informed and educated as to what you are trying

to accomplish they will understand. They will not like it, but will understand and instead of hindering the action process may indeed help to expedite it.

AGGRESSIVELY PURSUE RESOURCES

In order to get the mission accomplished, any organization must be adequately resourced and staffed. With most federal agencies this is never the case. However, my experience has shown that if you get the community, elected officials and state and Federal regulators on your side and they are convinced that you are making an honest and sincere effort to correct a bad situation, they can make things happen in a positive manner. I have found that the "squeaking wheel" does get the grease, be it in a State Capital or in Washington. I would emphasize here that it just does not happen on its own! The pursuit of resources must be carefully planned and then orchestrated with high level management involvement. This means that the leader of the organization must lead the charge.

MONTHLY UP-DATES TO THE BOSS

One of the most successful aspects of the Aberdeen Proving Ground model was the monthly staff up-date to the Commanding General. This was an unrehearsed two-hour staff briefing which over a 90-day period covered some twenty-one environmental elements of which six were core topics and were of such importance that they were addressed monthly. The briefing covered all the Test and Evaluation Command with special emphasis on Aberdeen Proving Ground where most of the environmental damage had been done. The core topics briefed each month were:

- Personnel Status - Financial Status - Hazardous Waste
- Inspections/Incidents - Regulatory Agreements

A guest speaker was invited each month and was given the opportunity to speak 15-20 minutes on some important environmental subject which would be educational to the entire group. The salient point on the monthly environmental up-date was not the information that was provided the Commanding General; what was more important was that it educated and informed a large number of invitees as to the progress we were making in cleaning up Aberdeen Proving Ground. The list

of invitees included: The Maryland Governor, Congressional Representatives, Maryland Delegates, Maryland Senators, U.S. Senators, County Executives, County Council Members, Local Mayors, Maryland Department of Environment, Environmental Protection Agency, County Health Department, The Baltimore *Sun* newspaper, Local Newspaper, the FBI, the Local Tenant Commanders and Heads of other Federal Agencies. I list these individuals and organizations only to show that initially they were a large part of the problem as we attempted to clean up some 50 years of hazardous waste dumping.

Once we established our credibility through openness, honesty, candor, and trying to do "what was right," they quickly became the biggest part of the solution. I cannot overemphasize how important this action was in dealing with the states, not only Maryland, but the others as well. We must remember that most environmental enforcement comes from the States and they can be as tough or lenient as they wish. They work with EPA, but our experience found that the States had the ability to "change the rules" and would do so in your favor if they believed that a honest and conscientious effort was being made to correct bad situations. This was very important because of the tight resources and short time frames which always exist. Even the press was fair. They told many of our horror stories but also told what we were doing to correct the problem in an objective and fair manner.

ASK FOR HELP -- ELEVATE/ELEVATE/ELEVATE

Any government agency such as Department of Energy must receive a lot of support and help from every level to accomplish its mission. Therefore there must be a complete awareness throughout the DOE management structure of what the field-level problems are. Once these are known, elected officials and Congressional channels must be used to not only gain support but to get resources. These actions can be taking place simultaneously at both the national and field levels, but they must be communicated by senior level management. Our experience indicated that many government administrators and Congressional staffers are looking for those who "ask loudest and longest." These requests may not always be through "Channels," but are equally effective in any event.

COMMUNICATE REGULARLY WITH THE REGULATORS

As we continue to move forward as a nation into more and more environmental awareness and as the laws and regulations become even more complex, we must work on a daily basis with the State and EPA regulators in order to solve the day-to-day problems. We must have daily communication at every level, community, state, and Federal to not only discuss problems but successes as well. All is not doom and gloom in the environmental business. There are tremendous success stories which are happening every day and the public wants to hear them. Particularly if they have a human interest side and good people can be singled out for awards and favorable publicity. We found that the Regulatory Agencies also wanted a positive up-beat approach which of course helped in their role as part of the solution.

SUMMARY

As I indicated at the beginning of this paper, there are no real secrets as to the success of the model environmental program developed at Aberdeen Proving Ground. Basically, it boiled down to giving a group of talented hard working people a sense of direction. A plan was developed, goals were set and then continued high level command/management interest helped to make it happen. A summation of key points are discussed as follows:

- The Boss must be personally involved.
- The Organization must attract, hire, and retain a qualified staff.
- Involve the entire organization.
- Assign responsibilities.
- Fix accountability.
- The Organization must be "Open and Honest" - and is trying to do what is right.
- Identify - Document - Prioritize total requirements.
- Involve Regulators, Elected officials and the Community in the program.
- Make the Organization's needs known - seek assistance Elevate/Elevate/Elevate.
- Publicize good news items-- Sell the Program!

- Bite the Bullet - the BOSS takes the information at hand, makes the best decision possible, and moves on with getting the job done.

BUILDING PUBLIC TRUST BY LETTING GO:
THE PROBLEM OF INSTITUTIONAL CREDIBILITY IN
"TURNED-OFF AMERICA"

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CLEAN SITES, INC.

Prepared for the U.S. Department of Energy
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At least since the progressive era in the early part of this century, public bureaucracies have looked at themselves as the embodiment of the "public interest." Both the Congress and state legislatures have passed a variety of regulatory statutes giving powers to public agencies to "protect" the American people against innumerable harms. The zealotry of this protection has varied according to the politics and economics of our society, but even in the most conservative Administrations, there has been no fundamental challenge -- despite rhetoric to the contrary -- to the specific role of federal and state bureaucracies in determining what constituted "public protection" of health and the environment.

Within elites as well as within the populace, this received wisdom is now under attack. It is no longer certain that public organizations, ranging from the Environmental Protection Agency, and the Food and Drug Administration to the Department of Energy are deemed to be operating in anyone's interest other than their own interest of building appropriations and fiefdoms. The fairness and generalization of this charge can certainly be attacked, but it seems obvious that new institutions, processes and mechanisms will be needed to muster the political support necessary to tackle large problems such as those facing the Department of Energy's (DOE) environmental restoration program.

The thrust of this paper is that DOE should embrace ideas that seem to wrest control of events from its own contractors and staff if it ultimately wishes to develop public confidence. My thesis is that DOE has more to gain by "casting bread upon the waters" than by jealously guarding any traditional prerogatives. By demonstrating its openness to both elite and populist interests, I would argue that DOE can improve dramatically both the substantive level of scientific input into its decision-making, as well as the public's confidence in its ultimate decisions.

This argument comes from ten years of experience in: (1) establishing scientific institutions to address the lack of scientific credibility in air quality research in EPA, and (2) operating a non profit organization that must deal with citizen involvement in hazardous waste decision-making and actual cleanup. Several lessons have evolved from this experience which buttress the larger argument, and describing these lessons forms the rest of this paper. The lessons are:

- Carefully structured non-governmental institutions that are both neutral and independent can have significantly greater scientific and factual credibility than their public counterparts;
- The development of clear cleanup objectives in the context of dramatically wider "stakeholder" participation in decision-making can transform the effectiveness of public organizations;
- Important operational management considerations, which are too often seen as "technical," can be opened to public involvement without degrading the operational environment; and
- It is difficult, but not impossible, to merge the often competing models of "expert-elite" decision-making with a more populist approach.

THE ROLE OF INDEPENDENT SCIENCE IN ENVIRONMENTAL REGULATION

In 1980 an independent scientific institution, the Health Effects Institute, arose from the ashes of the 1977 Clean Air Act debate. That debate, appropriately described as "fractionous" by former EPA Administrator Doug Costle, highlighted the lack of trust between government and industry, and between environmentalists and all others, about the quality of data informing air quality, and particularly mobile source regulatory decisions. HEI, jointly and equally funded by EPA and the worldwide automotive industry, now does almost all the automotive health effects research in the United States, and has become a widely respected scientific institution by all parties. It is governed by a unique and small Board, headed by former Watergate Special Prosecutor and American "hero," Archibald Cox.

HEI is certainly not perfect. Its research has been described as too fundamental by some critics, but there have been several scientific and policy successes that cannot be ignored.¹ The Department of Energy's scientific problems are almost certainly at least as complex as those facing the biological science community that investigates the health effects of emissions, and perhaps more. But there are a number of important items to reflect upon.

First, the placement of science outside the bureaucratic scientific environment of the federal government almost certainly has increased the numbers of quality scientists attracted to dealing with difficult environmental problems. The government and its contractors are not likely in this area to be able to directly engage the numbers of scientists as full-time employees necessary to deal with the rather overwhelming technology problems facing DOE.

Second, by increasing the number of scientists and quality of science, the core issues of the quality of information that underlie much of the distrust of government are being dealt with directly. To the extent that people trust anyone in the society, independent university based scientists still seem to be in the top rung. Not only is information therefore actually improved through this arrangement, but the perception of the information base is also likely to be improved.

Third, an emphasis on improved science and agreement on information plays to a traditional American prejudice. While adversarial behavior seems to be in our genes, there is, I believe, an underlying premise in our society that we ought to be able to agree on the facts, even if we can't agree on what to do with those facts.

Fourth, the individuals who developed HEI had an insight that credibility could rest upon individuals, who could transfer it to an institution. There may not be many individuals like Archibald Cox in society who are perceived to be relatively disinterested public servants, and who are not receiving major economic benefits for their service, but we should try to find the ones that are out there.

Fifth, Americans seem to believe that opinions follow money, i.e anyone can be bought. In HEI's case, this perception was countered by the joint and equal government-industry funding. Accordingly, there has never been any accusation of systematic bias. In DOE's case, the same effect could be generated through capitalizing an independent organization, that was governed by the kind of distinguished Board that characterized HEI.

In an area as contentious as nuclear waste siting and restoration, I would not argue that independent science is sufficient to improve the Department's credibility. But I would argue that the scientific and technical issues are so important that the establishment of an independent scientific capability to deal with important technical issues could improve the quality of debate and clarify the truly technical issues from those in which the policy content is higher.

THE IMPORTANCE OF STAKEHOLDER PARTICIPATION IN DECISION-MAKING

Over the last twenty years, the notion of public participation in decision-making has gained some currency. Whether through genuine belief, or through being forced by the political process, public bureaucracies have grown used to the public meeting process, to elaborate notice and comment rule-making procedures, and even to "advisory committees", formed by interested and often disgruntled citizens. In many of its current activities at Hanford and other nuclear waste sites, the Department of Energy holds interminable public meetings. In the EPA Superfund program, public meetings have become a way of life and some sites have even established more elaborate efforts to "communicate" effectively with the public. In its recent report on *Improving Risk Communications*, a panel of the National Research Council emphasized the necessity of two way communication between regulatory officials and the public, if substantial understanding of existing risks and the risks of remediation or siting were to be achieved.

Two significant problems emerge from my experience with much of this public process. First, much of it is "by the book," and reflects little real commitment on the part of the technically trained people in regulatory processes to understand and deal with the important people management dimensions in decision-making. Second, and more importantly, practically all existing public participation processes assume the basic legitimacy of bureaucratic-consultant decision-making. "Stakeholder" participation, unless done in the context of traditional interest group politics, is not taken seriously as an intrinsic part of decision-making. In my experience, it would startle almost every regulatory official to hear an argument that the "emotional" views of the public need to be factored into a decision about how to proceed with the *same* degree of seriousness, as the decision about where to place the next monitoring well. Let me elaborate on each point.

My experience with three Federal health and safety regulatory agencies, the Environmental Protection Agency, the Food and Drug Administration, and the Food Safety and Inspection Service of the Department of Agriculture, all lead to the same conclusions about the development of regulatory policy. An assignment is made to examine an issue. As an example, it might be an evaluation of an existing National Ambient Air Quality Standard by the EPA. For the group given the task, the major

steps in developing policy will be pulling together all of the scientific data currently available, commissioning additional scientific research, and contracting out massive data gathering efforts to the consultant community. It may take three to five years of assiduous work to pull together all the data, and to sort through the various technical options. By the end of this three to five year period, the public officials will know -- not just suspect -- what they think public policy should be. At some point, relatively early on in that five year process, the key career officials will believe that they have crossed the cost-effective line of data gathering, and will make an internal decision. Additional data will be gathered, but subtly the next batch of data will have a tendency to be directed to support the internal decision. After all, officials will reason, money is not infinite.

By the time policy is to be made even by their own political overseers, the career officials already know what they want, and they have a heavy investment in getting it. The "stakeholders," i.e., citizens or the industry, will really not have gotten into the process at all. They will have had no ability to shape the questions that were asked, to satisfy themselves about the competence of contractors, to review anything other than summaries of data. In short, they have no real way to get into the game until the career officials in the agency have made a heavy personal investment in the outcome.

Public comment and public hearings are often necessary at this point, but public officials dread them, not only because of their inherently repetitious level and occasional emotional outbursts, but because they really don't want to change their minds. Increasingly, the public and industry understand this problem. Some people react with guerrilla theater, others head for their lawyers and Congressmen. In either case, the fundamental flaw is that ostensibly open participation processes are, in fact, largely sham exercises that debase the credibility of the regulatory process, rather than enhance it. Public officials often moan about what else they can be expected to do. The answer is to devise processes that minimize their own emotional involvement in decisions, prior to hearing about other "stakeholder" views.

The second issue, the actual nature of the decision-making process, flows from the first, but is more crucial. Our current public involvement processes, at least in waste cleanup, assume that the public can either comment or sue at the end of the process if they don't like the outcome. In my view, this conception will lead to

continued gridlock. It is, I should add, a conception that is embodied in statutes like Superfund, so this is not a situation in which blame can be easily passed to executive branch regulatory officials.

In my view, waste siting or cleanup decisions should only be made in situations in which both the government and "stakeholders" -- whether states, industries or groups of citizens -- are faced with the following opportunities and choices:

- Each stakeholder has the right to participate in discussions about what technical issues are to be researched and debated, before those decisions are made. These "technical" decisions include issues of existing or alleged health problems. Some public agency, whether it be the Centers for Disease Control, or a state health department, should have independent responsibility for commissioning these health evaluations, rather than the agency responsible for making the ultimate cleanup decision.
- With respect to non-technical stakeholders, they should have the right, and financial wherewithal, to hire independent technical counsel of their own choosing. Prior to coming to closure on the issues to be discussed, (i.e., prior to coming to any planning group that includes the government and all stakeholders) there should normally be extensive technical seminars, with technical representatives from all parties as well as disinterested scientific observers. These will serve to vet the kind of information to be developed and to agree, up front, on all technical information that is to be reviewed. This kind of process protects everyone, including citizens and their political representatives, against the presence of technical charlatans, i.e., those individuals who occasionally masquerade as scientists but who truly have political agendas.
- Stakeholders, including the government, but with the assistance of external facilitators, need to come to clearly understand and, if possible, agree on what remedial objectives are going to be or, what the criteria will be on which the government will make a siting decision. This key step -- setting objectives in a concrete enough way so that all participants at least understand what the decision criteria will be -- is almost always ignored, because it is very difficult. In many

overtly political processes, it is often useful to avoid explicitness about objectives in order to submerge conflict. In my experience, this mode of decision deferral, is precisely the wrong one for dealing with hazardous waste. Time is better spent up front, before regulatory officials have gotten themselves locked on to a particular path, to actually debate among stakeholders what is to be achieved.

This discussion suggests that I view regulatory officials as "stakeholders," rather than all powerful decision makers who embody the legitimacy of the society. That is true, but I also do not contend that decisions must be made by consensus. It is important that people know that decisions will be made, and that they will be made in an accountable way by public officials, but only after those officials have seriously involved the technical and non-technical views of everyone who has a stake in the outcome. Indeed, I would argue that the adoption of a decision process in which public officials are charged with attempting to develop a consensus, but in which they must finally and publicly make decisions, will lead to increased legitimacy. But this will only occur when regulatory officials evidence a willingness to see their roles more broadly.

IMPROVING THE ACTUAL MANAGEMENT OF OPERATIONS

It seems clear to me that we can enhance trust and confidence by improving the quality of science and expanding rather dramatically, the role of stakeholder participation -- but -- there are also important day-to-day management tools that can reinforce public confidence once a project is underway, or that can undermine the progress. Particularly in the hazardous or nuclear waste arenas, things will happen in implementation that bear on the credibility of regulators. Again, my own experience is that "openness is the best policy," but let me briefly elaborate.

First, it is important that operational management structures at sites be kept simple. The EPA, for example, has serious problems in deviating from existing plans at sites, because the site project manager has insufficient authority to deal with problems that arise. Indeed, the term manager is a misnomer. The people are coordinators, and they have no power to deal efficiently with the contracting, technical, or legal disputes that arise at sites. As a result, they lose credibility, and those individuals with much less to lose at these sites are able to defend bureaucratic prerogatives.

All the public or industry sees is inaction, or intransigence, when, in fact, the site manager is simply hemmed in by bureaucratic arrangements that are too cumbersome. Project managers, therefore, need to have serious authority inside their organizations to make things happen. If they abuse it, they should be held accountable.

Second, it is absolutely critical that promises made be promises kept. Whether the promise is made to industry or citizens, the public official can almost guarantee that unfulfilled promises will cause trouble. In conjunction with this, it is also critical to ensure that people understand exactly the nature of promises. My experience is that people hear what they want to hear and that only the presence of experienced people can ensure complete understanding.

Third, there is a lot to be said for open operational oversight by citizens and other stakeholders at critical points in process. For example, a major midwest Superfund site has experienced serious problems in testing for the presence of radioactive waste. Several batches of samples have been declared invalid; community representatives now believe that these mistakes fit into a conspiracy pattern. Regardless of whether these concerns are right, everyone knew that this radiological testing was going to be critical. Rather than the choice of contractor being kept hidden -- through arcane and, in this case, stupid, procurement rules, the entire mode of testing and analysis should have been out in the open, so that mistakes would be minimized and seen in their proper light. Given the current recurrence of the "paranoid style" in American politics, scientific processes are simply going to have to adapt themselves to democratic processes.

Fourth, the role of national environmental organizations can be converted from gadfly to useful oversight, by including members and scientists, as part of the evaluation and oversight processes at these sites.

MERGING ELITES WITH POPULISTS: MATCHING SCIENCE WITH DEMOCRATIC VALUES

It has been too often my experience that health and environmental regulators view their peer groups as exclusively those technically trained people in the professions with whom they do business with on a regular basis. I cannot count how many times I have heard a regulator say, "well, there's no technical reason for doing this test, but we're doing it to satisfy the citizens, or the politicians." There is a funda-

mental misconception of regulatory decision-making in this kind of statement. It assumes that more technical data will somehow satisfy objectives that are often of a fundamentally different nature. This is, of course, false. What is not false, in my experience, however, is the way in which the well-crafted use of data, if embedded in a decision-making-making process that reflects the interest of all parties, can make it possible to get on with business.

Politicians often take it on the chin from scientists and regulators in waste cleanup, because they are perceived to make *ad hoc* interventions on behalf of constituents. What these people often fail to perceive is that citizens and industrialists often have very strong cases about the apparent lack of fairness and probity of processes that make it difficult for politicians to stay out. If regulators can systematically demonstrate that openness, fair play, and a respect for competing views have been at work in site decisions, they can maximize the possibility of constructive interaction with elected officials. Now the fact will always remain that some choices will be made over which there is legitimate argument. No matter how credible an institution becomes, it is still going to be disagreed with. That is the nature of America. However, we can change, I believe, the nature of these battles from ones in which the veracity and credibility of agencies become major issues, into ones in which issues of substance -- like how much protection is enough - predominate.

In my view, however, we will not do so until public agencies like DOE and EPA relax their grip on decision processes and recognize that other models - apart from bureaucratic decision-making -- can and do represent the public interest. We could do worse than emulate the New England Town Meeting, in which all can speak up but must then face their fellow citizens on the street, in putting together new processes for the 21st century. Rather than dismissing this concept as a relic of the past in our "mass society," we need to resurrect it and adapt it to the serious environmental questions that face our entire citizenry.

FOOTNOTES

¹For a detailed description of the Institute and its successes, see *Harnessing Science for Environmental Regulation*. edited by John D. Graham, 1991, Praeger Press.

GAINING PUBLIC TRUST AND CONFIDENCE
IN THE
US HIGH-LEVEL NUCLEAR WASTE PROGRAM

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Prepared for the U.S. Department of Energy
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This paper was prepared at the request of the National Academy of Public Administration by Dan W. Reicher, a senior attorney with the Natural Resources Defense Council (NRDC). The paper discusses the problem of gaining public trust and confidence in the US high-level nuclear waste program.

NRDC is a national environmental organization based in New York with offices in Washington, San Francisco, Los Angeles and Honolulu. The organization has a staff of about 150 scientists, attorneys, resource specialists, and support personnel. NRDC works in a broad array of environmental and energy issues and has long been concerned about the issue of nuclear waste.

In the early and mid-1970's, NRDC filed several successful suits against the Atomic Energy Commission and the Energy Research and Development Administration regarding high-level waste problems at the Savannah River Plant in South Carolina and the Hanford facility in Washington State. In the late 1970's, the organization prepared a detailed report under contract to the DOE regarding high-level waste. In the early 1980's, NRDC filed a successful suit which established that the Resource Conservation Recovery Act, the federal hazardous waste management law, applies to the Department of Energy's defense waste including defense high-level waste.

In 1987, the author led the litigation which overturned the Environmental Protection Agency's (EPA) high-level waste standards in the First Circuit Court of Appeals in Boston. Recently, he was appointed to the National Academy of Sciences Board on Radioactive Waste Management. He has also served as a consultant to the Sandia National Laboratory on radioactive waste disposal at the Waste Isolation Pilot Plant in New Mexico and is an adjunct professor of law at the University of Maryland Law School where he teaches a course in nuclear regulation.

The paper is divided into two sections. The first section considers whether the current US. high-level nuclear waste program -- as conceived by Congress and implemented by the Department of Energy (DOE) -- is likely to engender public trust and confidence. The second section discusses some steps that might be taken to improve public trust and confidence in the current program.

WHILE NRDC SUPPORTS GEOLOGIC DISPOSAL OF HIGH-LEVEL WASTE, WE BELIEVE THE CURRENT PROGRAM IS FUNDAMENTALLY FLAWED AND IS UNLIKELY TO ENGENDER SUBSTANTIAL PUBLIC TRUST AND CONFIDENCE.

NRDC has long supported deep geologic disposal of high-level nuclear waste. Our criticisms have been directed at the approach taken towards and not the concept which underlies geologic disposal. Unlike some citizen organizations, we are not convinced that *long-term* at-reactor storage of spent fuel will provide an acceptable level of protection of human health and the environment. We also do not support away-from-reactor storage in a Monitored Retrievable Storage (MRS) facility because of the likelihood that such a facility could become the de facto permanent repository. Consequently, we believe that there is a need to make progress in developing a geologic repository. *Unfortunately, we do not believe that the current repository program is likely to succeed.*

In the 1982 Nuclear Waste Policy Act (NWPA), Congress adopted some measures that are key to successful development of a nuclear waste repository: screening multiple potential locations, encouraging regional equity in siting, and sharing authority among the federal government and potential host states. DOE, however, initiated a technically flawed and politically motivated program that by 1986 had caused an uproar in numerous states.

In the 1987 amendments to the NWPA, Congress responded to DOE's misguided approach in a heavy-handed and politically expedient manner, eliminating some of the key equity concepts that were the foundation of the original legislation. The amendments singled out one state with a four-person Congressional delegation and no nuclear power plants as the *lone* potential site for a repository. Proposed legislation supported by the Administration would further erode the equity considerations in the original law by removing Nevada's authority over site characterization, allowing co-location of an MRS and repository, and eliminating the cap on the amount of waste that may be emplaced in a repository.

Congress made a fundamental mistake when it decided to put all our high-level waste eggs in the Nevada basket. Politics or science or a combination of both could easily kill the Nevada site, perhaps years from now, at which point we

would be without any potential alternative sites and even further from solving the nuclear waste disposal problem. Sooner rather than later we believe Congress must revisit its decision to tie the entire high-level waste program to a single site.

Progress in permanently disposing of high-level waste will only be accomplished when Congress prescribes, and a governmental or perhaps non-governmental entity implements, a program which emphasizes fairness over expedience and good science over political considerations. There is no doubt that developing such a program will be difficult, but we believe Congress was at least headed in the right direction in the 1982 NWPA.

There is also no doubt that any program, no matter how we developed, will meet with resistance in potential repository locations. However, if such a program is soundly and equitably designed, and fairly and carefully implemented, we believe it might at least be tolerated by a large number of the citizens in the sited state or states. As observers of the high-level waste program have noted:¹

In making politically difficult siting decisions, political leaders have always had two options: overpower a weak constituency by sheer political force, or set up a more objective selection process that might be perceived as scientifically credible. In the latter case, the host area, even though opposed, might be willing to accept its fate.

The same observers quoted the following from a Utah newspaper editorial:²

Neither Utah nor any other state can properly refuse to bear the nuclear waste burden once it (the repository site) has been established to the best of human conditions. However, the honor of making such sacrifice for time without end must confer on the luckless lamb the satisfaction of knowing first-hand that the duty couldn't have been just as well assigned elsewhere.

The NWPA, as amended and implemented, does not meet this standard. As such it is not likely to instill trust and confidence in the public.

SOME SUGGESTIONS FOR IMPROVING PUBLIC TRUST AND CONFIDENCE

This section discusses some steps that DOE might take to improve public trust and confidence in the current high level waste program, despite its fundamental flaws.

DOE MUST ACKNOWLEDGE AND CONFRONT ITS PAST RECORD

DOE must recognize that it will be handicapped in earning the public's trust and confidence simply because of its track record. Try as it might, DOE cannot escape completely its spotty record in earlier incarnations of the high-level waste program, the monumental problems in the nuclear weapons production complex, and public concern over nuclear testing.

Frequently, Department officials adopt a "that was then, this is now" attitude and are angered when members of the public point to the Department's past record. But, just as none of us can escape our past, neither can DOE.

Instead, the Department must acknowledge its record and really endeavor to change its ways. More particularly, the Office of Civilian Radioactive Waste Management (OCRWM) must recognize that it cannot avoid being tarred with the same brush as other US nuclear programs. The repository program is not an isolated civilian program. It is closely connected to a highly controversial civilian power program and, despite its name, it became a component of the Department of Energy's immensely troubled defense nuclear program with President Reagan's 1985 decision to dispose of civilian and defense waste in the same repository.

Ultimately, if the Department's record presents too much of an obstacle to ensuring public trust and confidence, the program may have to be reconstituted in a different agency or even a non-governmental entity.

DOE MUST IMPROVE ACCESS TO INFORMATION

One of the hallmarks of the DOE's nuclear activities has been secrecy -- much of it legitimate, but some of it not. Unfortunately, the tradition of secrecy which grew out of the Manhattan Project, has found its way to some of the Department's environmental and safety programs. For example, the public has been denied access to the probabilistic risk assessments which are used to study the safety of defense

nuclear reactors. The public has also been denied access to parts of the hazardous waste permits which DOE submits to the EPA under the Resource Conservation and Recovery Act. And in a rather ironic situation, NRDC has had to file suit in an attempt to gain access to data on the nuclear test program, which DOE has already provided to the Soviet government.

OCRWM itself got into trouble in 1986 and 1987 with claims by members of the Congress and public that the office had withheld vital pieces of information on the repository program. The Energy Department must resist the tendency to withhold information if public trust and confidence is to be enhanced. This will likely require restructuring the approach to both "restricted data" and Unclassified Controlled Nuclear Information under the Atomic Energy Act.

DOE MUST IMPROVE COMMUNICATION WITH THE PUBLIC

DOE has an unfortunate history of communicating with the public in a confusing, vague and sometimes misleading manner. Too often the benefits of a project are hyped and the costs are minimized. Too often risks are presented in inappropriate context, for example, involuntary risks compared with voluntary ones. Too often experts are trotted out who are either incomprehensible to the public or are so connected to a program that their opinions are not trusted. And too often language is manipulated to obscure reality.

For example, at hearings across the country last year regarding the clean-up of defense nuclear waste, the Department presented a display which tried to put the risks of radiation into context by comparing them with the risk of being bitten by a tiger. This would not pass muster at a health physics conference, nor should it with the public.

Admittedly, the public sometimes has a difficult time distinguishing between radioactive hazards worth worrying about and those which are not. However, DOE's traditional approach has done little to improve this situation. DOE must endeavor to communicate in a more straight-forward and balanced manner if it is to improve public trust and confidence.

DOE MUST RECOGNIZE THAT THERE ARE MANY "PUBLICS"

Too often in the high-level waste program the public has been divided into a few communities: the states, the tribes, the utilities and an amorphous entity variously called citizens groups, or the environmental community, or the anti-nuclear lobby or something else. This tendency to lump instead of split ignores some fundamental realities. Governors do not always represent the views of their constituents. National environmental organizations often do not represent the views of local organizations. Anti-nuclear organizations frequently do not represent the views of environmental organizations. Taxpayers do not necessarily represent the views of nuclear utility rate payers. And government experts do not necessarily represent the views of independent experts.

The national environmental community, for example, ranges from cautious market-oriented organizations, like the Nature Conservancy and the Trust for Public Land to groups at the other end of the spectrum like Greenpeace and Earth First, that often work outside the system. At the local level, it is even broader. DOE must face up to the many publics whose trust and confidence it seeks to gain.

DOE MUST PROVIDE MEANINGFUL OPPORTUNITIES FOR PUBLIC PARTICIPATION

Public participation must be meaningful if the Department has any hope of instilling trust and confidence. This means DOE must seek input at a point in time *before* a decision is made. And it means the Department must actually keep its mind open on an issue. And it means -- and for some officials this is a revolutionary thought -- that DOE might actually change its approach to an issue based on public input.

Meaningful participation also requires that DOE hearings become two-way discussions. Too often hearings are one-way lines of communication where members of the public are given a microphone, and allowed to express their concerns with no response from the Department. The public is very frustrated with such an approach.

In fact, at one recent DOE hearing in New Mexico on the clean-up of the defense complex, local citizens became so angered that they actually took over the hearing, and, with the moderator's permission, actually began to answer questions

from the audience. Up to that point, the Energy Department had refused to engage in any sort of dialogue.

The critical point is that where public participation is inadequate the result, in the case of a large controversial facility like a repository, is not a public that doesn't participate, but one that participates in a frustrated, angry, and often misinformed way. Meaningful public participation therefore is critical if DOE seeks to earn public trust and confidence.

DOE MUST DEAL WITH INDEPENDENT EXPERTS MORE OPENLY AND FAIRLY

Independent experts, i.e. individuals with expertise in the nuclear area who are not connected with the government program, often bring different perspectives to a complex problem and often have the public's trust and confidence. Unfortunately, DOE has gone out of its way in some situations to ignore or reject or discredit such experts. This has had serious implications for public trust and confidence. For example, several physicists, economists, and others testified at hearings on DOE's proposal to build a new plutonium production plant in Idaho. They raised many important points, especially about the need for the facility. Their arguments were roundly rejected by the DOE and were barely considered in the EIS. But, in January of last year, they were the very same points made by the Secretary of Energy when he canceled the plant. DOE must confront independent experts more openly and honestly if it is to improve public trust and confidence in the high-level waste program.

DOE CAN FOSTER PUBLIC TRUST AND CONFIDENCE THROUGH RIGOROUS STANDARD-SETTING

Studies of siting controversies have shown that members of the public are more comfortable about a controversial facility if they know that there are strict standards in place and that they will be rigorously applied.³ Unfortunately, standard-setting in the area of radioactive waste has not inspired much confidence, especially with regard to the regulations developed by EPA for high-level and transuranic nuclear waste. NRDC led a coalition of organizations and states which challenged the adequacy of those standards in the First Circuit Court of Appeals in Boston. in 1985. We argued, among other things, that the regulations ~ allowed contami-

nation of potential drinking water supplies at levels above those set under the Safe Drinking Water Act. We prevailed in that case in July of 1987.

We thought that in the wake of the litigation interested parties would work together- to strengthen the standards. But, instead, we have seen just the opposite with DOE pushing to weaken the standards. Of 18 DOE comments on EPA's second working draft of the new standards, 12 comments call for weakening the standards; the other six have no effect either way. We simply have not seen many instances where DOE has supported strengthening of a nuclear waste standard. This can only serve to undermine public trust and confidence.

We also urge DOE to support strong *application* of the nuclear waste standards. Unfortunately, in legislation recently proposed by the Administration regarding the Waste Isolation Pilot Plant in New Mexico -- a DOE geologic repository for transuranic waste -- the Administration has resisted the proposal that EPA, rather than the Department, certify compliance with the EPA standards.

The bottom line is that if the high-level waste standards end up weaker than when issued in 1987, and if they are not rigorously applied, public trust and confidence will suffer greatly.

THE ENVIRONMENTAL IMPACT STATEMENT PROCESS CAN BUILD PUBLIC TRUST AND CONFIDENCE

The Environmental Impact Statement (EIS) process under the National Environmental Policy Act (NEPA) holds great potential for the sort of informed decision making and meaningful public participation that can increase confidence in a controversial program. Unfortunately, DOE's record in implementing NEPA is not a sterling one. DOE has often avoided looking fully and fairly at impacts and alternatives. It has frequently not provided for meaningful public participation in the EIS process nor adequately responded to public comments. And all too often EIS's have been post hoc rationalizations of decisions already made.

For example, in the wake of litigation brought by 21 citizen organizations, DOE in January, 1990 agreed to prepare two programmatic environmental impact statements -- one on the clean-up and the other on the modernization of the nuclear weapons complex. Unfortunately, as things stand now, DOE has determined that the Yucca Mountain issue is not within the scope of either study. This is at odds with

NEPA and its implementing regulations and is illogical given the critical nature of geologic disposal to the disposal of defense high-level waste. DOE must attend fully and fairly to NEPA if it hopes to gain public trust and confidence.

DOE MUST RECOGNIZE THE LEGITIMATE ROLE OF LITIGATION

Secretary Watkins has bemoaned the "litigious mischief" that states and citizen groups engage in regarding the nuclear waste program. We can understand the Secretary's frustration. However, litigation is the inevitable consequence of a program with flaws as far-reaching as the current one. Furthermore, litigation often, is the only means the public has to influence the decision-making process.⁴

It must also be noted that litigation can actually result in positive change. In 1984, for example, NRDC won a major piece of litigation which established that the Energy Department was subject to the Resource Conservation and Recovery Act, the federal hazardous waste management law. This expanded EPA and state oversight of the massive waste problems in the defense complex and helped push DOE to finally confront them. Without such litigation, we think the Department would have dragged its feet far longer.

DOE MUST RESIST LEGISLATION THAT WILL ERODE PUBLIC TRUST AND CONFIDENCE

In recent months, DOE has promoted legislation to advance the Yucca Mountain and MRS proposal. This includes removing Nevada's authority over site characterization, allowing colocation of an MRS and repository, and eliminating the cap on the amount of waste that may be placed in a repository. While these sorts of fixes might advance the Department's interests in the short term, we believe they can only end up hurting public trust and confidence in the long run. In attempting to limit Nevada's authority over 'Yucca Mountain, DOE -- with Congress' backing -would only further poison relations with the state and its citizens and further strengthen their resolve to prevent the development of the repository.

Adoption of such legislative provisions would also set a tragic precedent for the difficult task DOE will face over the next decade in siting many other controversial waste treatment and disposal facilities to address the massive quantities of waste in the DOE nuclear complex. If Congress and the nation are serious about siting

these critical facilities we should not sanction the approach in the proposed legislation where a state's authority is simply withdrawn in order to grease the skids for the proposed facility. The public will be even less inclined than they are today to consider the siting of a treatment or disposal facility knowing that Congress is willing to simply cast a state's regulatory authority aside.

CONCLUSION

Although the current US. approach to high-level nuclear waste disposal is fundamentally flawed, there are, nonetheless, steps DOE could take to improve public trust and confidence in the program. Whether these steps can overcome the program's inherent problems is highly uncertain.

FOOTNOTES

¹ Colglazier, E.W. and Langum, R.B., "Policy Conflicts in the Process for Siting Nuclear Waste Repositories," *Annual Review of Energy*, 1988, 317, 352.

²*Id.*

³Kunreuther, H. *et al.*, "Public Attitudes Toward Siting a High-Level Nuclear Waste Repository in Nevada," *Risk Analysis*, 10, 1990, p. 469.

⁴See L. Taylor, *Opening Up: Public Involvement in Environmental, Safety, and Health Issues at the DOE Nuclear Weapons Complex* at 79 (May 1991).

REORGANIZING PUBLIC ORGANIZATIONS: ALTERNATIVES, OBJECTIVES, AND EVIDENCE

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INTRODUCTION

The process of reorganizing public organizations represents an institutional design problem in which important trade-offs must be made between such social values as efficiency, equity, and political accountability. Unfortunately, pre-reorganization analyses often gloss over these trade-offs, allowing particular values to become implicitly embedded within the chosen design alternatives. In this literature review (drawn largely from the fields of political science and public administration), values will be treated explicitly, and often at length, in order to call out the important issues at stake in planning any public-sector reorganization.¹

Following this introduction, the main body of the paper is divided into two parts. The first part focuses on various performance criteria² for evaluating alternative organizational forms. The second section fleshes out a wide variety of alternative organizational forms, discussing the reasons these forms have been pursued as well as evidence suggesting the intended and unintended consequences which have followed. Since designing and redesigning public organizations is inherently a political process in which various actors attempt to influence organizational structure and procedures in order to affect policy outcomes and power relationships (Arnold 1974; Seidman and Gilmour 1986; Knott and Miller 1987; T. Moe 1989), no attempt is made in this paper to draw conclusions as to which alternative might be considered "best" or which performance criteria are "most important." Rather, the paper concludes with a summary table in which the alternatives are compared by the criteria in light of available evidence.³

Because the literature on public-sector reorganizations is too extensive to review completely in this paper, it will be useful at this point to draw some sweeping generalizations about the literature in order to suggest its character and to justify this paper's focus on selected pieces. As a whole, the literature is remarkably abstract, both theoretically (assumption-driven) and ideologically (value-driven). In other words, authors tend to draw conclusions deductively and/or polemically, rather than upon the basis of rigorous empirical analysis. Because empirical evidence is relatively scant, we will devote considerable attention throughout this review to fleshing out the logical foundations upon which arguments have been constructed, and the values various writers have implicitly or explicitly elevated by recommending one type of organizational structure over another.

Remarkably few studies have systematically evaluated the successes, failures, and unintended consequences of public-sector reorganizations.⁴ Lester Salamon (1981b:60) even went so far as to proclaim that "Serious empirical work on the real effects of reorganization is not only deficient; it is nonexistent." Though perhaps hyperbolic, Salamon's statement reflects the concern of many academics, including Harold Seidman (1974:489), whose remarks two decades ago regarding our level of knowledge still have a strong ring of truth today.

We're dealing here with mythology — we expect that reorganizations will produce miracles, as a matter of faith. We've had almost no systematic analysis to determine what in fact reorganizations achieve. This was one of my great frustrations when I was responsible for the President's reorganization program. We never had the time or staff to analyze the results of reorganizations. At the National Academy of Public Administration we did do three case studies of reorganizations [Seidman et al. 1971] to see what they accomplished in terms of the objective stated by the President. We found, interestingly enough, that once the reorganizations went through, there ceased to be any interest in the White House. If there had been some follow-up the likelihood of achieving the President's objectives might have been enhanced. There were some changes in a direction totally different from that desired by the President.

Seidman's comments are telling. Presidential attempts at comprehensive reorganization of the Executive Branch are often undertaken as ritual responses to perceived bureaucratic problems. According to March and Olsen (1983:284-85), presidents "go through a cycle of enthusiasm and disappointment," in which they typically enter office with innocent, ignorant, and naive notions about the process of reorganizing, soon realize they "miscalculated the difficulties of achieving substantial reform in the national government," and subsequently back off, often trading their reorganization plans in the process as a bargaining chip with Congress. Vogelsang-Coombs and Cummins (1982:22) argue similarly that "executive reorganizations are pervasive rites of presidential politics" which have "expressive and symbolic political uses, irrespective of whether or not they produce long-term changes in government performance." Thus, the dearth of evaluations is only surprising if reorganizations

are examined instrumentally rather than symbolically (March and Olsen 1983: 289-91).

Reorganization can be seen as a symbolic form of communication in which politicians — especially presidents — attempt to assert control over the bureaucracy by waving the banner of reorganization. The very possibility of reorganization may then stimulate self-inspection by the agencies themselves (March and Olsen 1983:289). As symbols, reorganizations signal political intentions to those within public organizations and the government as a whole, and thus may have an effect independent of implementation, and serve purposes outside of campaign-related rhetoric (Kaufman 1977:405). Reorganization plans often signal support, or a lack of support, for particular programs. Though President Carter publicly emphasized efficiency, simplicity, and reducing the size of government, his first major reorganization (creating a new, cabinet-level Department of Energy) signaled his intention to create a comprehensive energy policy (Kaufman 1977:406).

Symbolism thus has functional purposes which should be considered in addition to the instrumental purposes given greater attention in the literature and in this review. Even though large-scale attempts at reorganization, especially comprehensive multi-agency reorganizations, typically fail to be implemented, let alone achieve their primary purposes without substantial side effects, they may still serve long-term, functional purposes by shaping ideas (March and Olsen 1983), and signaling political intent (Kaufman 1977; Vogelsang-Coombs and Cummins 1982). Reorganization rhetoric may also symbolize and affirm the values which legitimate our political institutions, even if the institutions themselves are not able to achieve those values in practice (March and Olsen 1983:292).

The very idea of “reorganization” symbolizes some level of dissatisfaction with the bureaucracy. Everyone thus supports reorganization in principle, even though specific attempts to reorganize invariably run up against various interests (whether in Congress, the public organizations themselves, or in the private sector) which benefit from the status quo and attempt to impede the effort (Rourke 1957; Seidman and Gilmour 1986; March and Olsen 1983:290). Unlike organizing a new program, in which various interests fight for a design beneficial to themselves (T. Moe 1989), reorganization faces the additional inertial constraints of “entrenched interests” and organizational routine, and thus requires great effort on the part of

political leaders and program administrators if they desire to bring about real operational change rather than simply rearrange organizational charts. As Fesler and Kettl (1991:99) succinctly note: "Where a program is placed matters, and many in and out of government care." Thus, reorganization plans which do not consider the political context of the current organization can expect to confront "unexpected" surprises.

Reorganizations are also initiated for apparently non-functional reasons, particularly when they come from *within* public organizations. Public managers sometimes reorganize as an habitual response to perceived problems rather than as a direct response to external changes affecting organizational performance (Bozeman and Straussman 1990:137). For example, some public managers reorganize routinely, believing the process itself will stimulate people to work harder (Wilson 1989:212), or simply "because a new executive feels that it is expected of him and because it gives him a feeling of influencing the organization" (Simon, Smithburg, and Thompson 1950:174). Unfortunately, such untargeted reorganizations, undertaken solely to loosen up deeply-rooted, informal relationships, may simply provide an opportunity for new and unanticipated relationships to develop in their stead (Kaufman 1971: 55-6).

Even when reorganizations are initiated for functional reasons, they usually do not address the most controversial issues or resolve those underlying tensions. At the federal level, evidence suggests that reorganization plans initiated at the White House or Cabinet level tend to be "transmitted *after* the most controversial issues have been resolved elsewhere," and that the plans themselves do not always relate specifically to the most controversial issues (Seidman et al. 1971:A-4,5). Mosher (1967) presents similar evidence at the state level. In summary comments to twelve case studies, Mosher (1967:501) argues that reorganization efforts are typically just one step in a progressive series of attempts to resolve underlying tensions, and that "the majority of reorganization efforts are unsuccessful or only partially successful" in reducing those tensions.

These prefatory comments are intended to warn the reader against overly instrumental interpretations of the discussion which follows. Though some have argued that reorganizations are simply functional responses to social, economic, or technical changes in society (Grafton 1979), political scientists have increasingly taken an institutional perspective in which both symbolic politics and self-aggrandiz-

ing turf battles determine the rhetoric of reorganizations. In this perspective, public organizations are profoundly political bodies, and thus all reorganizations should be analyzed as occurring within a political system and subject to political maneuvers. Thus, even if reorganization planners substantially agree on the values they seek to enshrine by selecting a particular organizational structure, several challenges still remain. Empirical evidence suggests that relatively few reorganizations successfully achieve their intended purposes. Political and organizational obstacles to change are legionary, and thus any attempt to reorganize a public organization should be seen as just one more step in a long string of efforts to resolve the underlying tensions the reorganization is intended to resolve.

PERFORMANCE CRITERIA FOR ASSESSING ALTERNATIVE ORGANIZATIONAL STRUCTURES IN THE PUBLIC SECTOR

The most illuminating discussions of public-sector reorganizations treat values explicitly (Simon, Smithburg, and Thompson 1950; Kaufman 1956; Salamon 1981b; March and Olsen 1983), focusing on the criteria various actors pursue in planning and negotiating the redesign of public organizations. Though normative treatises can also be useful, particularly when authors compare various design theories on the basis of logical merit and the criteria proffered (White 1989; R. Moe 1987; Knott and Miller 1987), this paper neither constructs nor defends any one theory. Instead, the focus is on the value trade-offs embedded within various design alternatives. The order in which the criteria are presented below is not intended to suggest that some criteria are necessarily more "important" than others, but is instead indicative of the relative emphasis these criteria receive in the literature.⁵

ECONOMY AND EFFICIENCY

The efficiency criterion and its companion, economy (or cost savings), appear in many guises, and thus should be treated as several related criteria. For example, in the so-called "administrative science" era of public administration, which reached its zenith in the 1930s, economy and efficiency were used in the context of "streamlining" the bureaucracy (i.e., grouping programs with similar functions, reducing organizational redundancies and overlaps, and clarifying lines of accountability). In this context, economy was thought to be the result of implementing a grab bag of prin-

ciples which were neither precisely defined nor logically consistent (Simon 1976; Kaufman 1977).

According to Meier (1980:398), the logic of classical administrative theory is “simple and persuasive” on its face:

Organizations with one person in charge, no duplicated programs, functional organization, limited spans of control, etc., can accomplish tasks with fewer employees and at less cost. The logic of classical organization theory, therefore, implies that executive reorganization along specified lines can reduce government employment and expenditures — not necessarily absolutely (so that a government’s total employment will be lower after a reorganization than before) but rather relatively (i.e., employment will be lower than it would have been had the government not reorganized).

However, when Meier tested this relative-cost-savings hypothesis with a longitudinal analysis of sixteen state government reorganizations, he found only three reorganizations producing statistically significant long-term declines in employment. Moreover, none of the sixteen reorganizations showed significant short-term declines in employment, nor did any produce statistically significant short- or long-term reductions in expenditures. “In short, the conventional wisdom that executive reorganization along the principles of classical organization theory introduces economies into bureaucracy is not supported for major American state government reorganizations from 1965 to 1975” (Meier 1980:410).⁶ Though similar studies have not been conducted at the federal level,⁷ Salamon (1981b:66) cites estimates which suggest administrative reorganizations could cut only a fraction of one percent of any given budget without cutting into the programs themselves.⁸

In microeconomic theory, efficiency has several precise definitions, all of which fit within a well-delineated model of individual behavior. Unlike administrative science, microeconomics suggests efficiency is produced through competitive markets rather than hierarchical monopolies. In theory, private markets produce goods and services at the lowest cost (production efficiency), and allocate them to their most valued uses (allocative efficiency), if individuals and organizations are self-interested and competition is “perfect.” Though perfect competition requires

negligible information costs, easy access into and out of markets, and the presence of many non-colluding competitors — conditions seldom, if ever, attained in actual markets — economists argue that it is the incentives, not the pure conditions, which are important, and thus the closer are markets to “perfect” the stronger are the efficiency-inducing incentives.

“Public choice” theorists therefore conclude that many aspects of governmental operations can and should be privatized since monopolistic (non-competitive) bureaucracies, filled with career civil servants (whose jobs are protected), do not face the proper incentives to promote either production or allocative efficiency, nor the incentives to take risks and to innovate (engineering or technical efficiency). Privatization is only appropriate, however, in those cases in which competition exists in the private sector (or in which the government expects to regulate the programs it has privatized), and in which more important criteria are not threatened in the process. According to Simon, Smithburg, and Thompson (1950:171-72):

Efficiency is a meaningful criterion only when an organizational choice is to be made in terms of agreed-upon objectives. When the very point at issue is the determination of what the organization objectives are to be, or what relative emphasis is to be placed on different objectives, efficiency cannot be the criterion of choice.

Efficiency is often presented as the primary reason for reorganizations because it is the “most universally appealing” criterion, and thus “helps mobilize massive support which it is hoped will overcome anticipated opposition to specific proposals” (Musicus 1964:108). At the state level, Mosher (1967:514) similarly found efficiency to be the rallying cry behind most reorganizations, even though the actual goals of those initiating the reorganizations were more commonly related to changes in the organization’s image, policy, or program. Efficiency can thus be understood symbolically, as a deeply held and widely shared value (March and Olsen 1983), in addition to its logical relationship to various theories. Economy and efficiency may thus be the most often expected, but least often delivered, objectives of reorganization (Salamon 1981b:64).

EFFECTIVENESS

Effectiveness refers to the ability of an organization to “get the job done” — to carry out its primary mission and to meet its goals. Though program goals are purportedly the *raison d’etre* of public organizations, effectiveness is more often assumed than discussed by reorganization planners and theorists. This is surprising, and potentially troubling, for at least two reasons. First, even though the evolution of goals is often a contributing factor to reorganizations, the “real” goals of the actors involved are not always publicly announced (Mosher 1967:495-97). Thus, it can be very difficult to evaluate the success of reorganizations since it is not always possible to know why they were undertaken or precisely what the goals of the organizations are.

Second, even if goals are known and agreed upon, other criteria sometimes conflict with effectiveness. For example, if, in the guise of economy or efficiency, costs are continually cut in an attempt to ferret out “waste” in the form of organizational slack or redundant systems, program effectiveness at some point will be threatened.⁹ Accountability and control may also threaten effectiveness if political superiors rely on strict hierarchical rules which do not permit professional expertise to play a role in technical, legal, or medical decision-making processes. Thus, James Q. Wilson (1989:11-12) argues that reorganization planners should consider public organizations from the bottom up, as well as from the top down, since then “we can assess the extent to which their management systems and administrative arrangements are well or poorly suited to the tasks the agencies actually perform.” Though tasks vary considerably between public organizations — from high to low technology, from regulatory to line functions, and from administrative to advisory roles — reorganization theorists seldom attempt to account for this variation.

POLITICAL ACCOUNTABILITY AND CONTROL

Since public organizations exist in order to perform public functions, theorists generally agree these organizations should be accountable to elected officials, and in some sense controlled by them. The tougher questions are “Accountable to whom?” and “How much control?” Some place great value on executive leadership as a means for coordinating national policy in the fragmented bureaucracy (Emmerich 1971; Szanton 1981; Seidman and Gilmour 1986). These theorists typically favor

hierarchical designs, with clear lines of accountability to the president and relatively limited decision-making discretion within the organizations themselves. Kaufman (1956) argues that the continued calls for executive leadership since the 1930s should be understood in an historical context, as a response to the perceived fragmentation of the federal bureaucracy which resulted from the increasing use of such alternative organizational forms as independent commissions and government corporations. Empowering the executive to lead public organizations through hierarchical designs is thus valued as a means for overcoming the perceived problems of fragmentation. According to Kaufman (1956:1063), the charges against fragmentation have been many:

[Fragmentation] bred chaos; agencies pursued contradictory policies in related fields. It fomented conflict; agencies engaged in bitter bureaucratic warfare to establish their spheres of jurisdiction. It opened gaps in the provision of service or of regulation; clienteles were sometimes denied benefits or escaped supervision because they fell between agencies. It was costly; many agencies maintained overhead organizations that could have been replaced more cheaply and effectively by a common organization, and citizens had to make their own way through bureaucratic labyrinths. And, most important of all, it led to irresponsibility; no one quite knew how the pattern of organization and program came into existence or what could be done to alter it, each segment of the fragmented governments became a self-directing unit, the impact of elections on the conduct of government was minimized, and special interest groups often succeeded in virtually capturing control of individual agencies. No one seemed to be steering the governmental machinery, though everyone had a hand in it....

Regardless of whether diverse organizational forms and autonomy from executive control actually produce these popularly hypothesized effects, the evidence that centralizing authority under the President reverses them is scant, complex, and contradictory. Moving an independent agency into an executive branch department may, in fact, "be of little more significance than a change of address" (Rourke 1957:477).

Congressional control and accountability are generally exercised through

committees, through oversight hearings and the appropriations process. From this perspective, hierarchical designs may be unnecessary, since Congress has the "power of the purse." However, the more a public organization relies on funding sources external to the appropriations process (e.g., user fees or bond sales), the more independent it is from congressional control. Government corporations, for example, are advocated by those seeking autonomy from "micromanagers" in Congress (as well as in the Executive Office of the President). Congress is seldom looked upon as a source of coordinated policy, since its program-oriented committee structure breeds fragmentation, and since the committees are often accused of being allied with special-interest groups. Congress is also seldom advocated as a source of control, since "Congress can exercise only a general and intermittent oversight over administrative agencies, and has had to confine itself to providing general standards guiding the exercise of administrative discretion and to occasional intervention to correct abuses or to force specific changes in policy" (Kaufman 1956:1062).

PUBLIC PARTICIPATION IN DECISION-MAKING PROCESSES

Public participation is usually valued as an alternative means of political control and accountability. Since public organizations are ultimately accountable to the public, they can either be held accountable to elected representatives or to citizens directly. In the 19th Century, especially following the so-called Jacksonian Revolution, citizen involvement in public organizations reached a high point through the use of long ballots, in which "almost every public official from President down to dog-catcher came to power via the electoral route" (Kaufman 1956:1059). In the latter half of the 20th Century, public participation arrived in a different form. Rather than electing citizens as administrators, systems were set up which permitted, and even required, citizen input in decision-making processes. According to Kaufman (1977:394):

Underlying this strategy is the premise that if people affected by governmental decisions and actions take part in the formulation of such measures, no interest will be overlooked or neglected and no significant consequence unanticipated. Few claims are made for the efficiency of such procedures, but responsiveness and, to a lesser extent, effectiveness can allegedly be

improved in this fashion, thus diminishing the feeling that government is out of control.

Decentralized authority is an indirect means for increasing public participation at the street level since it is here that organizations interact with clients. Thus, while centralizing hierarchical structures is thought to increase political control and accountability (if not economy, efficiency, or effectiveness), decentralization is believed to increase the opportunities for an organization's clients to influence internal decision-making processes (Bozeman and Straussman 1990:148; Kaufman 1977:401).

PROFESSIONAL AUTONOMY WITHIN THE ORGANIZATION

Professional autonomy is similar to the notion of "neutral competence." However, while the core value of neutral competence is the "ability to do the work of government expertly, and to do it according to explicit, objective standards rather than to personal or party or other obligations and loyalties" (Kaufman 1956:1060), professionals maintain loyalties to their various associational codes of ethics and conduct (Seidman and Gilmour 1986:178-85). Though completely objective decisionmaking (neutral competence) is unlikely in public organizations, objectivity can be enhanced by organizational designs which encourage decision-making processes incorporating expert opinions and professional standards rather than patronage appointments and political micromanagement.

Accordingly, those advocating practitioner or professional expertise as the primary criterion for reorganization opt for relatively flat hierarchical designs and/or independence from political control and public participation. Interest groups may still influence policy indirectly, however, if they successfully empower professions whose worldviews and decision-making processes are sympathetic to their own cause (T. Moe 1989). In either case, professions often seek to control the internal labor markets of various public organizations, and such efforts may have important implications for operations and policy.

SAFETY AND RELIABILITY

Certain programs require safe and/or reliable performance. For example, in our current culture, it would be difficult to imagine governmental programs regulat-

ing pharmaceuticals, air traffic, or nuclear power which did not rate safety and reliability as important, if not paramount, operational criteria. Though governments can certainly regulate private organizations to ensure safe and reliable delivery of services, Ronald Moe (1987:457) argues that public concern for safety may be sufficient justification for placing a program in the public (rather than the private) sector, regardless of whether these concerns are technically merited.

Organizational redundancy — i.e., creating parallel systems and/or units with overlapping duties — is a standard method for ensuring reliable operations (Landau 1969). If one system fails, back-up systems ensure continued operations; if one organization or organizational unit is not sufficiently watchful, others with overlapping duties provide additional assurance that specific details are attended to and that the routines themselves are technically appropriate. Since safety often depends upon reliable operations, these criteria present challenges to those seeking efficiency by reducing “wasteful” redundancies and overlaps both within and between public organizations (Landau 1991). One method for analyzing this trade-off is to recall that low-cost production (productive efficiency) can only be measured against a given level of output; thus, if safety and reliability are considered to be integral components of organizational operations, then redundancy will not only seem appropriate, but should be treated as a standard “cost of doing business.”

EQUITY IN SERVICE DELIVERY AND REGULATORY EFFECT

Equity is typically ignored or glossed over in discussions about reorganizations, which is somewhat surprising since equity is often touted as a primary justification for governmental regulation and service provision. There are, however, no theoretical or empirical reasons to believe that one type of organizational design is likely to promote more equitable outcomes than another. Wilson (1989:353) even goes so far as to argue that “there are no clear theoretical grounds on which to make predictions about whether government bureaus or private firms will be fairer in distributing outputs and acquiring inputs.” It is possible, for example, that regulated private markets may actually promote greater equity than public organizations, since it is sometimes easier for public organizations to regulate private firms than other public organizations given that unclear lines of authority often link public organizations (Wilson and Rachal 1977). Moreover, some regulatory agencies and commis-

sions actually benefit specific sectors of the public, despite their purported mandate to regulate in the public interest, since they are sometimes designed to benefit certain special interests (T. Moe 1989) or may have come to be "captured" by the special interests they were originally intended to regulate (Bernstein 1955).

POLITICAL EFFICACY

Thus far, we have discussed criteria which evaluate organizations in terms of their outputs and/or processes. Political efficacy is a different type of criterion in that it accounts for the political constraints which reorganizations confront during implementation. Some plans are likely to encounter more opposition than others, particularly if they attempt to trod over established and powerful interests. In fact, relatively few reorganization plans are translated into action precisely because of resistance by bureaucrats and elected officials seeking to protect their turf, and by all those interest groups which fear they will not benefit from the reorganization (Seidman 1974; Seidman and Gilmour 1986; Fesler and Kettl 1991:101-2). Reorganizers thus rely on symbols, such as efficiency, to rally others behind their plans when attempting to overcome these political constraints (Musicus 1964; Mosher 1967).

Some argue that reorganization plans can only be successful (efficacious) if they "mirror" the committee structure of Congress (Seidman 1974:489), and thus take into account the political needs of Congressmen, many of whom have purposely sought membership on certain committees in order to promote the interests of their constituents. According to Wilson (1989:268):

Taking a bureau out of one department and putting it into another often means shifting oversight responsibility for that bureau from one committee (or subcommittee) to another. A willingness to surrender turf is as rare among members of Congress as it is among cabinet secretaries.

Presidents also pursue reorganizations in order to fulfill campaign promises — promises which may conflict with the re-election needs of Congressmen. Since presidents are subject to four-year election cycles, we can probably expect they will be more likely to pursue unpopular policies which disrupt the relationships between interest groups, Congressional committees, and bureaucrats in their first year in

office, and to let these efforts languish as their re-election (or "lame duck" status) approaches.

While this may sound excessively cynical or pessimistic, March and Olsen (1983) note some positive aspects of these political constraints. The "rhetoric of realpolitik," as they refer to it, is an empirical and prescriptive counterpoint to the orthodox rhetoric of public administration which emphasizes efficiency and managerial control. Not only *do* many actors influence organizational structure, it is *good* they do so since "a single individual has neither the cognitive capacity, nor the time and energy, nor the moral and representational standing assumed by the managerial perspective" (1983:283). Though largely rejected as an official basis for reorganization, awareness of political constraints makes it possible to achieve limited changes in organizational structure (Arnold 1974; March and Olsen 1983; Seidman and Gilmour 1986).

In this regard, some observers have noted that successful reorganizations appear more likely in those cases in which the impetus comes from "insiders." According to Tierney (1981), the postal reorganization of 1971, for example, was relatively successful because it was largely engineered by officials in the old Post Office Department. Similarly, Mosher (1967:514) concludes from twelve state-level case studies that reorganizations tend to be more successful if they are directed towards solving administrative problems rather than making programmatic changes, and are generated (at least in part) by "insiders" rather than private outside consultants. Politicians, however, may be "loath to seek advice on change from people with heavy stakes in existing institutions and arrangements" and may want to seek diverse viewpoints or carefully select reorganization advisers in order to enhance the prestige and authority of a reorganization plan (Kaufman 1977:412).

PUBLIC TRUST AND CONFIDENCE

Public trust — a complex, multi-faceted concept — has received little attention in the context of public organizations; and, like equity, has seldom been considered by reorganization scholars and planners. Some tentative links between public trust and public-sector reorganizations have been drawn, however, in a previous paper I prepared for the Secretary of Energy Advisory Board entitled "Public Trust in Organizations and Institutions" (Thomas 1991). Some of these links are cited below

and in subsequent sections, but readers should consult the previous paper for a fuller treatment.

Because trust is multi-faceted (with both interpersonal and institutional dimensions), it is unlikely any particular reorganization will increase (or decrease) public trust in a consistent way. The very act of reorganization, for example, is likely to endanger the existing interpersonal trust-based relationships which have developed between individuals associated with the public organization, including civil servants, clients, and various members of the citizenry. If reorganization planners are concerned about retaining the trust of these segments of the community, they should avoid disrupting existing social relationships — which may prove difficult since most reorganizations are intended to alter many of the established relationships which have developed between organization members and individuals in the organization's environment. Though trust can be instilled through new social exchanges, this may be a lengthy process.

On an institutional level, reorganizations may produce public trust if they bring into the organization various institutional processes which themselves are trusted by the public. Thus, reorganizations which enhance professional decision-making processes may bolster public trust since many professions are trusted by large portions of the public. In addition, regulatory oversight may bolster public trust if the regulatory process is both effective and trusted by the public.

STRUCTURAL ALTERNATIVES FOR PUBLIC-SECTOR REORGANIZATIONS

The previous section presented various criteria for evaluating alternative organizational designs. In this section, structural alternatives are discussed in light of these criteria. These alternatives are broadly construed, and thus should be seen as categories rather than specific models.¹⁰ They are presented, roughly, from most to least centralized. The final category, however, differs from the others in that it is composed of alternatives which do not require significant structural changes.

CENTRALIZE HIERARCHICAL RELATIONSHIPS WITHIN THE EXECUTIVE BRANCH

The so-called principles of administrative science, particularly as delineated by Roosevelt's 1937 Committee on Administrative Management (the Brownlow Committee) and the two Hoover Commissions of 1949 and 1955, have had a profound and long-term impact on politicians and public administrators (Arnold 1974; March and Olsen 1983; Knott and Miller 1987). Even some academics (Emmerich 1971; Miles 1977) continued to cling to these "management principles" long after such reorganization efforts proved politically intractable and the logical validity upon which they rested had been seriously challenged by Herbert Simon (1976) and others. Though streamlining (reducing "wasteful" organizational overlaps, duplications, and redundancies) and hierarchical accountability to the President have been relatively consistent themes since at least the 1930s, they are certainly not the only criteria by which to assess reorganization strategies which centralize hierarchical relationships within the Executive Branch, nor is the evidence clear such reorganizations promote either efficiency, control, or coordination.

Herbert Emmerich (1971:8), who promoted presidential control as a dominant criteria, defined "reorganization" as any change in the size, distribution, and nature of executive functions, including changes in staff, financing, and management controls which "measurably affect the ability of the heads of the executive branch — the President and his department heads — to supervise and direct the manner in which the functions are exercised." Emmerich treated the presidency as the "focal point" of "responsible" administrative management because the President is the only position capable of overcoming the "centrifugal forces" of specialized interests which operate directly on agencies and through Congress (1971:10-11). Specialized interests are "irrational and illogical," he argued, because they impede reform efforts aimed at unifying the executive branch (1971:16), which ostensibly would benefit the public interest as defined by the President. Given his emphasis on presidential control, it is not surprising that Emmerich disparaged such organizational forms as independent regulatory commissions, government corporations, and contractual relationships (1971:11), all of which — as will be discussed later — provide fewer means for presidential control.

Because of his emphasis on presidential authority as a means for coordinating

and directing national policymaking, Emmerich can be seen as a modern-day Hamiltonian, and thus his reasoning should be examined in light of James Madison's fear of concentrating too much power in any one branch of government. In *Federalist 10*, Madison argued that the protection of individual liberty from political tyranny should be considered the most important criteria when designing democratic forms of government. Since overly centralized power may permit a single faction to dominate all others, power should be distributed widely, as it is in the Constitution, in order that each center of power can provide checks and balances against the others. Thus, organizational structures which protect personal liberty necessarily create impediments to coherent and coordinated national policy (Salamon 1981b:79-80).

In practice, however, reorganizations within the Executive Branch are seldom conducted in such a sublime philosophical atmosphere. Not only are symbolic rhetoric (Kaufman 1977; Vogelsang-Coombs and Cummins 1982; March and Olsen 1983, 1989; Knott and Miller 1987) and battles over political turf (Arnold 1974; Seidman 1974; Seidman and Gilmour 1986) often paramount, but empirical evidence supporting the claims that formal centralization promotes either presidential control or bureaucratic efficiency is extraordinarily weak. Mergers are a standard means for reducing the number of agencies and thus increasing executive control (Musicus 1964:109). The empirical evidence regarding the effects of mergers, however, is quite complicated. According to Wilson (1989:267-68), the creation of the Department of Health, Education, and Welfare, which merged a variety of agencies, "made little difference: the component bureaus, each with its distinctive culture, professional outlook, and congressional supporters, continued for the most part to operate independently of each other and of HEW's central leadership." Wilson argues that reorganizations which simply move boxes around on the government's formal organization chart may have relatively little effect — outside of causing turmoil and confusion — unless they redefine the core tasks of the bureaus. "The 'semi-merger' of the FBI and DEA [following the drug-control reorganizations of 1968 and 1973] made a much bigger difference because it altered promotion lines, provided new resources, and led (after a period of resistance) to redefining somewhat the core tasks of both the FBI and DEA" (Wilson 1989:267).

The effect of moving organizational boxes on organizational operations may depend upon the "hospitality" of the host agency or department. Miles (1977:157)

argues that agencies "should be placed in settings that are most conducive to the achievement of their central missions." This logic assumes, of course, that reorganizers want a particular organization to be effective. Conversely, "if a small unit is located in an organization to which it is only distantly related, or where its contribution is generally felt to be unimportant by the rest of the organization, it may become a 'stepchild' and may consequently be neglected by the top executives and others in the organization unless moved elsewhere" (Simon, Smithburg, and Thompson 1950:169).

Hult (1987:6) provides the most rigorous empirical evidence of the effects of mergers. She tracked three cases at the state and federal levels, finding great complexity and no clear patterns.

Contrary to expectations of both advocates and opponents, these reorganizations led to some changes but not others; nor were all of the shifts necessarily desirable. Consolidation succeeded in making one of the new agencies more responsive to elected officials and, in another case, weakening iron triangle-like ties. It also fostered a shift in policy direction and some, albeit limited, improvement in the pursuit of policy goals. However, in one of the agencies, merger had no identifiable effect whatsoever. And, even in the others, consolidation was not a quick, easy, or automatic way of producing desired change. Its consequences depended on a wide range of factors, only some of which could be manipulated by policymakers or agency officials.

Hult (1987:9) concluded, however, that mergers which bring together "competing empires" or "interdependent" organizations are more likely to bring about changes in relationships and performance than mergers of organizations with quite dissimilar functions. Though Wilson (1989:267) argued that mergers are only successful if they redefine the core tasks of the organizations since the tasks themselves largely determine organizational outcomes, Hult (1987:8-10) suggests that political control can be strengthened through merger if the existing organizations are either in competition or interdependent with one another.

Political control may also be strengthened if top managers find strategies which attract the support of external advocates of one subunit for the work of others,

and in so doing diversify interest group ties and loosen the links forged by old clientele groups. Certain variables, however, appear to be outside the control of policymakers (Hult 1987:10):

Technical uncertainty and resource scarcity placed ceilings on performance that were not always expected or completely understood. Changes in issue salience and policy context were difficult to anticipate and steer.

While centralization is avowedly pursued as a means for controlling public organizations and/or reducing costs, the degree to which either objective is achieved through centralization is relatively unknown. Success appears contingent upon numerous other factors.

INCORPORATE AN INDEPENDENT ORGANIZATION INTO AN EXECUTIVE BRANCH DEPARTMENT

The standard justification for incorporating an independent agency or bureau into an executive branch department is the desire to increase the coherence of presidential programs by increasing executive control over a governmental function (Emmerich 1971). Even if an independent agency can not be moved into a department with a common mission (thus "streamlining" or "rationalizing" the bureaucracy), the very act of incorporation may be beneficial if it decreases the likelihood of capture. Fesler (1974:491) argues that capture is less likely to occur in large departments because they encompass many bureaus, each representing differing missions and interests, thus allowing the department administrator to play one set of interests off another. This is not a neat division, however, since large departments do not always represent multiple interests. Labor groups, for example, fought to have OSHA placed within the Department of Labor precisely because they considered the department to be a safe haven for labor interests (T. Moe 1989).¹¹ It is also possible for independent agencies and commissions to regulate multiple industries, as is the case with the EPA. In sum, while avoiding interest-group capture may be an important objective of reorganization, it is not necessarily achieved by moving an organization into an executive branch department.

Nevertheless, interest groups allied with or receiving benefits from an inde-

pendent public organization will typically oppose inclusion within a department because they fear their direct influence in the agency and/or their indirect influence through Congress will wane as a result. Rourke (1957) found, however, that such interest-group fears may be misplaced. He concluded his case study of the transfer of the Bureau of Employment Security from the Federal Security Agency to the Department of Labor in Reorganization Plan No. 2 of 1949, by arguing that, "contrary to their expectations, the influence of groups which aligned themselves in opposition to the plan has been, if anything, increased rather than diminished" since the Plan's approval (1957:476). The Secretary of Labor did not come to play an important role in employment security policy, and thus the effect of the reorganization "proved to be of little more significance than a change of address" (1957:477). Moreover, the interest groups continued to muster majorities in Congress in support of their favored proposals. Therefore, incorporating the Bureau of Employment Security into the Department of Labor did not increase executive control over the program.

Though operations were unaffected in this case, Rourke (1957:477) argues agency transfers can have a large effect if the new department is hostile to the organization's mission. "The Corps of Engineers, for example, if threatened with transfer to the Department of the Interior, might conceivably face the prospect of having its conservation functions absorbed by the Bureau of Reclamation" (Rourke 1957:477). Similarly, notes Kaufman (1977:403): "If the Arms Control and Disarmament Agency had been set up in the Department of Defense instead of as an independent unit, it seems likely that the advocates of arms limitations would have had less impact on policy than they did."

Intragovernmental regulation can serve as an alternative means of controlling independent organizations. The evidence so far, however, suggests it is difficult for one public organization to exert regulatory control over another when lines of authority between the organizations are not clearly delineated and agreed upon. For example, Wilson and Rachal (1977), drawing on the difficulties the EPA faced in attempting to regulate the Tennessee Valley Authority (TVA), argue that it may be easier for a government agency to regulate a private firm than another public organization.¹² Though there appear to be differences in the degree to which different types of public organizations can regulate the activities of others, the evidence at this point is quite limited, and therefore incorporating an independent agency into an executive

department may provide a stronger means for executive control and program coordination than intragovernmental regulation.

CREATE AN INDEPENDENT AGENCY OR COMMISSION

Independence from presidential control provides a public organization with a more autonomous political milieu within which interest groups, public managers, and professional decision-making processes can achieve greater prominence. While single-headed organizations responsible directly to the President are generally favored by those seeking presidentially coordinated national policymaking through clear lines of authority and minimal duplication of efforts, independent agencies and multi-headed boards and commissions are advocated by those seeking to remove "politics" from particular governmental programs (Simon, Smithburg, and Thompson 1950:47-49). These distinctions, however, are quite general; in practice, the debates are more confusing, and the empirical evidence supporting such propositions is far from conclusive. For example, though independent status may permit organizations to develop their own personnel systems, including exemptions from Civil Service regulations, some executive departments do contain agencies (e.g., the Foreign Service) with independent personnel systems (Seidman and Gilmour 1986:270).

On one level, the independence debate involves a political battle between Congress and the President over the lines of accountability and the means of control and oversight. Placing a program within an agency or department of the Executive Branch and thus "taking hierarchy as the main basis for organization assumes either explicitly or implicitly that it is the President who is entitled to determine the government's programs" (Mansfield 1974:492). Conversely, "Congressional committees, especially the appropriations committees, sometimes take a very firm position on insisting that as far as instructions to agencies are concerned, their marching orders come from the committee and it is up to the committee, and not the President, to say how high they should jump" (Mansfield 1974:492). Though independent agencies and commissions are intended to operate independently of departmental control, they are still "subject to congressional oversight as well as presidential direction through established executive branch procedures" (Wise 1989:22).

Since the debate over organizational independence is largely based on rhetoric rather than empirical evidence, it is useful at this point to review a particular debate

in order to better understand the various issues which actors believe to be at stake. Wise (1989:22-23) provides a relatively quick synopsis of the debate over whether the Federal Aviation Administration (FAA) should be independent, or remain a part, of the Department of Transportation (DOT). Independence, proponents argue, would elevate airspace issues by increasing the certainty of funding for that function (since an independent agency is not subject to departmental budgetary review prior to OMB review), and by decreasing the layers of decision making necessary for implementing safety regulations and program initiatives. Moreover, independence would ensure that such important airspace issues as air traffic control are not subordinated to policy decisions influenced by non-air-safety factors, such as government fiscal priorities; and would provide clearer lines of accountability than would inclusion within a complex set of relationships in an executive branch department.

On the other side, proponents of the current structure (inclusion within DOT) argue the FAA would benefit from the Department's political clout within the Executive Branch. Moreover, they argue that DOT often facilitates (rather than delays) the rule-making process by catching errors prior to OMB review, that airspace policy should be coordinated with national transportation policies, and that large departments are better able to weigh the national interest because they do not respond as readily to specific constituents (e.g., airlines and the aircraft industry). Wise (1989:23) sums up this debate over the FAA's organizational independence by noting that economic and managerial issues are not at stake; independence would do "little of significance on either the economic or managerial dimensions."

CREATE A GOVERNMENT CORPORATION OR ENTERPRISE

Government corporations and enterprises come in many forms, but have some important common characteristics. For example, they are relatively free from both political control and bureaucratic constraints on operations. They are also more responsive to market-like forces than are executive-branch or independent agencies since they raise much of their revenues independently through user fees and bond sales rather than through the appropriations process. Thus, supporters argue public corporations are a more efficient organizational form for those government programs possessing market-like qualities — i.e., clearly defined outputs which can be priced and sold in private markets. Though public corporations may not be strictly competi-

tive and profit-driven (Wise 1989:24), they do face different incentives and possess different powers than other organizational forms. According to Seidman (1952:91): "This means removal from the necessity of annual appropriations; power to borrow money; ability to retain earnings as working capital or for reserves; freedom, in the matter of expenditures, from general governmental regulations and restrictions; and freedom, in auditing and accounting, from control of regular government accounting officials." They also provide a politically popular outlet for calls to reduce the size and influence of government.

Government-sponsored enterprises (GSEs) are "financial institutions chartered by the federal government to achieve the public purposes of facilitating the flow of funds to agriculture, housing, and higher education" (CBO 1991:xvii). There are currently only five such enterprises, with obligations totaling approximately \$1 trillion. GSEs make their investments and loans on the basis of implicit federal guarantees, and thus the federal government bears much of the risk typically borne by creditors in private financial markets. GSEs, however, operate like private financial institutions since the federal government "can allow a GSE's owners and management considerable discretion in determining the enterprise's exposure to each type of risk and the distribution of its overall risk" (CBO 1991:xvii).

Government corporations are more diverse than GSEs. For example, some corporations are wholly owned by the government, while others have mixed public/private ownership. They also vary in administrative structure. Not only do their boards of directors play differing roles, some public corporations have operated effectively without boards (Seidman 1952:92). In general, boards are thought to be useful in marshalling political support and shielding the corporation from various pressures; but they may also be costly to operate, confuse lines of accountability, and make it more difficult to recruit and hold top officials who may perceive boards as possessing most of the organization's power (Dean and Seidman 1989:19). Public corporations also vary in the degree to which they are covered by the Corporation Control Act and OMB regulatory review (Wise 1989:25-26). In general, these oversight mechanisms have increasingly fallen into disuse (R. Moe 1988:48-9).

Seidman and Gilmour (1986:283) argue "the distinguishing attributes of a U.S. government corporation are not inherent in the corporate form but stem solely from specific grants of power that have been customarily included in corporate

charters enacted by the Congress.” Similarly, Dean and Seidman (1989:4) argue that no clear organizational model exists for public corporations:

The Government Corporation Control Act is not a general incorporation law. There is no comprehensive federal statute dealing with the powers, organizational structure and legal status of government corporations. Corporations possess only those powers which Congress sees fit to include in their individual enabling acts.

The basic underlying justification, however, is derived from a particular philosophy of government, a position Seidman (1952:90) succinctly summarizes (but does not support): “If a service cannot be performed by private enterprise, then obviously the next best thing is something which looks as nearly as possible like a private institution and which has as little as possible to do with government.” This philosophical justification may explain why most public corporations have boards of directors even though there is no clearly discernible instrumental reason why they should mimic the structure of private corporations.

Though public corporations may respond to a deep-seated distrust of government, and are thus seized upon as a panacea for the perceived inefficiencies and corruption of politicized bureaucracies (Seidman 1952:96), Kaufman (1971:54) argues that public managers have also participated in the proliferation of public corporations through their earnest desire to lift political constraints from their activities and thus to have relatively free reign in deciding how best to meet program objectives.

Hemmed in by jurisdictional limitations, by elaborate procedural requirements with regard to finances, personnel, purchasing, and other housekeeping chores, and by the hazards and detailed controls of the appropriations process, bureaus often cannot accomplish the missions given them. The corporate form generally excepts a government agency from many of these obligations, while leaving it with the powers and the public-interest perspective that motivate governmental assumption of the function. For this reason, it is becoming an increasingly popular instrument; the layers

of safeguards and commands that contain the discretion of bureaus have unfitted them for the tasks that now confront them, forcing the designers of governments to employ a relatively new device to get out from under.

Indeed, the major impetus behind the postal reorganization of 1971 came from public managers seeking autonomy from such constraints. According to Tierney (1981:1):

The architects of the reorganization believed that the mail delivery system was essentially a business operation that could be managed more efficiently and effectively if it were converted from an old-line cabinet agency to a government corporation. The department's old organizational arrangements appeared to restrict managerial flexibility, stifle innovation, discourage cost-consciousness, and cater to the demands of special interests.

The new Postal Service has "in many ways been remarkably successful," particularly in modernizing the physical plant, providing new services, decentralizing decision-making authority, and producing "a more streamlined and effective management structure" (Tierney 1981:173). Nevertheless, the Postal Service remains a public organization, not an autonomous corporation,¹³ and thus reorganization "did not substantially alter the interests, goals, or demands of the organizations and groups that compose the postal policy arena" (Tierney 1981:180-81). The organization must still attempt to satisfy many constituencies by pursuing incompatible objectives. Moreover, unlike public corporations created from scratch, "the reconstituted Postal Service inherited an organizational legacy that included outmoded physical plants, an inflated workforce, rigid standard operating procedures, and a set of established expectations (both inside and outside the organization) about what the Postal Service should do and how it should be done" (Tierney 1981:176). These inertial constraints made it difficult for public managers to meet the high expectations of reformers, whose enthusiastic rhetoric helped secure passage of the reorganization act (Tierney 1981:175).

Political autonomy for public corporations is typically justified by the industrial or commercial nature of the organization, and thus the benefits which can be accrued through self-contained financial systems rather than dependence upon annual

appropriations. Since public corporations do not perform quasi-judicial or quasi-legislative functions like some other public organizations (Seidman 1952:93), political oversight may be less appropriate. Though public corporations may be relatively free from political control and accountability (depending upon Congressional desires to intercede), other forms of external control assume prominence. For example, public corporations typically must please three important clienteles: "the banking interests who market their bonds, the buyers of their bonds, and the users of their facilities and services who furnish the revenues that make their bonds salable" (Kaufman 1971:73). Moreover, public corporations may be regulated by other public organizations. Though some argue that intragovernmental regulation may be problematic if lines of accountability are unclear (Wilson and Rachal 1977; Wise 1989:24), public corporations can be legally designed to be responsive to certain regulatory bodies. Thus, even though the corporate form may free a program from certain political constraints, other constraints can be imposed. This is important not only as a means for providing some coherence to national policy, but also in that regulatory institutions may be a source of public trust in the organization's operations (Thomas 1991).

Many of the same debates regarding political independence presented above in the context of independent agencies and commissions have also been raised regarding public corporations. For example, according to Seidman (1952:94):

Autonomy is two-edged. It means not only freedom from outside direction and control, but also exclusion from the "official family" and close working relationships with top policy-making officials. These informal day-to-day associations afford an official the most favorable opportunity to influence policy determinations.

Reorganization planners must also decide whether pursuit of coordinated national policy is more important than financial autonomy, and whether market pressures should be allowed to have a potentially greater effect on organizational policy than issues related to the public interest or federal sovereignty (Wise 1989:24). Not surprisingly, public corporations are repudiated by those advocating presidential control of public organizations (Emmerich 1971; Seidman 1952:95).

PRIVATIZE (OR DEPRIVATIZE) VARIOUS OPERATIONAL COMPONENTS THROUGH CONTRACTING

Privatization — “the practice of delegating *public* duties to *private* organizations” (Donahue 1989:3) — has recently garnered a great deal of political cachet. Broadly construed, the term incorporates a number of differing strategies for financing and conducting public programs, from liquidating government assets to the use of contractors, vouchers and tax credits. The following discussion focuses specifically on the use of contractors, not only because the scope of this literature review is necessarily limited, but also because contracting is becoming an almost ubiquitous form of privatization in this country. Moreover, liquidating government assets — an extreme form of reorganization comparable to ceasing operations altogether and relying on markets or other levels of government to assume a given function — would be inappropriate for this discussion since it necessitates reviewing additional arguments justifying government intervention in general.¹⁴

Contracting has recently received a great deal of academic attention because of its growing magnitude and the resulting implications for managing public programs (Salamon 1981a; Donahue 1989; Kettl 1991). Despite the well-known scandals in defense procurement, contracting appears to remain a popular alternative, and perhaps a politically expedient choice, since privatization may appeal to an underlying antigovernment culture or antibureaucratic bias in the United States (Seidman and Gilmour 1986:121).

The two standard motivations behind privatization in general, and contracting specifically, are increased efficiency and reducing the size of government. Though selling government assets certainly reduces the size of both the federal workforce and budget, contracting may only reduce the size of the federal workforce. Contracting does not necessarily reduce the federal budget since contractors can pay higher wages (including benefits) than public organizations, and since contractors may provide different levels of service than public organizations would otherwise provide. A recent study by the General Accounting Office (GAO 1991:65) found that agencies hiring contractors generally did not know whether contracting had cost more or less than administering the work in-house since cost comparisons were neither required nor carried out. “Some agency officials believed contracting for consulting services cost more, and certain anecdotal evidence supported this belief” (GAO 1991:66).¹⁵

Though contracting may actually raise costs in some circumstances, this does not necessarily indicate that contracting is less efficient, since contractors may provide a different level of service.¹⁶

In theory, efficiency in contracting depends upon several conditions. First, the organization's product must be quantifiable and relatively simple to delineate in a contract. As a product becomes increasingly intangible and/or complex, contracting becomes less feasible since it is more difficult to define the product in a contract and to monitor and evaluate contractor performance. Unfortunately, as Wilson (1989:348) notes, "the output of government always is complex and often controversial. If an agency has multiple or vague objectives, it is not easy to tell whether those goals are being attained efficiently, or being attained at all."

Second, the market for private contractors must be sufficiently large in order to generate competitive bidding between contractors and to act as a performance incentive after the contract is awarded. If a particular market has relatively few contractors, collusion or non-competitive understandings between contractors may arise during the bidding process. The public organization must also rely to a greater extent on its own oversight mechanisms to ensure that contractual terms are then fulfilled. Unfortunately, the more an organization relies upon the expertise of contractors rather than public servants, the more difficult it may become for the organization to evaluate and monitor the performance of its contractors.

Kettl (1991), for example, described the effects of congressionally-mandated contracting on the Superfund program within the Environmental Protection Agency (EPA). Since Congress did not want to create a large new bureaucracy when establishing Superfund, it placed administrative caps on the EPA, forcing the agency to spend nearly 90 percent of its budget on contractors (1991:7). Thus, while contractors were developing the cutting-edge expertise for neutralizing hazardous wastes, Superfund contract managers within the EPA became demoralized by relatively low pay and prestige, which led to high turnover rates in the program (1991:8-11). Without the ability to develop or retain expertise, the agency has been relatively incapable of monitoring the performance of its contractors, and has even hired contractors to evaluate the performance of other contractors (1991:12).

Thus, even if markets are relatively competitive, public organizations may lack the necessary expertise to determine whether they have been sold poor products

and thus to switch suppliers. In other words, without a skilled cadre of technicians and managers, public organizations may become "captured" by contractors (R. Moe 1987:458). GAO (1991), for example, recently found contractors in several agencies performing "inherently governmental functions," defined as those "requiring either the exercise of discretion in applying government authority or the use of value judgment in making decisions for the government" (1991:4).¹⁷ The GAO (1991:6) study concluded that

contracting for governmental functions is largely due to staff shortages, lack of staff with sufficient expertise, and the fact that contract money is easier to obtain than staff. To ensure that the government has the ability to administer activities that may involve governmental functions without having to rely on service contractors, GAO believes Congress should consider providing agencies with the authority and flexibility to accomplish this goal by staffing such functions internally.

Though competition is a necessary condition for achieving greater efficiency through contracting, competition does not necessarily ensure efficiency, nor is efficiency the only criteria by which to evaluate privatization alternatives. For example, privatization generally weakens the lines of accountability to political representatives since "a private entity under contract has only an indirect and tenuous relationship to elected officials" (R. Moe 1987:457). Contracting also squeezes public managers in the process since, in relinquishing to various third parties some of their discretion in spending federal funds and in using federal authority to achieve programmatic ends, public managers are put in "the uncomfortable position of being held responsible for programs they do not really control" (Salamon 1981a:260). In light of the loss of control and accountability which contracting entails, it may not be an appropriate alternative for politically sensitive programs in which program effectiveness, public safety, social equity, or public trust are important criteria. In this regard, contracting may be especially inappropriate for those programs in which efficiency is not regarded as the primary value to be obtained.

In deciding which activities should be assigned to the private versus the public realm, Ronald Moe (1987:456) argues that sovereignty should be the "single most important" criteria. Since sovereigns possess certain rights and immunities, sover-

eign powers should not be assigned to the private sector. The U.S. government, for example, possesses the legitimate right to use coercion in taxing individuals and firms and in enforcing laws. Sovereigns are also immune from suit without their permission, and can disavow debts, take private property ("eminent domain"), and create systems of property rights. Thus, according to Moe (1987:457), any reorganization which assigns certain functions to the private sector must ask: "Does the performance of this function necessarily involve the powers properly reserved to the sovereign?"

Wilson (1989:348) extends this argument in a different direction by noting that all government programs are funded by taxpayer dollars, and there is thus an implicit, if not explicit, duty to deliver tax-paid services equitably and accountably. "Government programs, funded by coerced payments (that is, tax revenues), usually are expected to benefit all people in a given category 'equally' or 'fairly' (though what constitutes equality or fairness is very much a matter of dispute)." Moreover, "Some people worry that the private delivery of publicly sanctioned services will reduce the extent to which government is accountable to the people and thus reduce the extent to which we are citizens, not merely customers."

REORGANIZATION STRATEGIES NOT SPECIFICALLY TIED TO ORGANIZATIONAL STRUCTURE

Organizational change can be achieved through means other than major redesigns of the organization's structure and its relationship to the political environment. While such alternatives appear less grand, they may also be more feasible since they generally arouse fewer opponents to change. Moreover, since large-scale reorganizations often have unpredictable and unintended results (Kaufman 1971:55-6), marginal changes may be more controllable.

One such alternative is to recruit unorthodox viewpoints and ways of thinking into the organization (Kaufman 1971:56-7). This may include hiring members from different professions, geographical areas, or social groups, and placing them in various advisory or formal roles. While such efforts may have positive effects on public trust (Thomas 1991), many actors initiating or implementing reorganizations do not value unorthodox viewpoints. Emmerich (1971:18), for example, argues that

A large part of the separatist tendencies of the bureaus and administrations may be traced to professional particularism. The intensely specialized approach of the professionals in the public service is one of the strongest of the centrifugal forces that beset administration.

Thus, diversifying professional viewpoints may also increase the fragmentation already inherent in our political system.

Various analytic techniques, if institutionalized, may permit increased decision-making coordination and thus overcome some of the perceived problems of fragmentation since such techniques require programs to justify their operations and expenditures on the basis of systematic criteria (Szanton 1981; Aberbach and Rockman 1988). As with structural changes, however, some critics charge that analytic techniques do not necessarily alter bureaucratic behavior. For example, according to Hugh Heclo:¹⁸

Reorganization plans or techniques like management by objectives and zero-based budgeting are all executive proclamations that presume rather than create changes in subordinates' behavior. Instituting new management techniques and making them part of the bureaucracy's standard operating procedure lie at the end of statecraft, not the beginning.

Other modest alternatives address concerns about public grievances. If desires for reorganization are driven by public dissatisfaction with organizational encounters, client surveys can suggest where specific problems exist. Some of these problems may be alleviated simply through the creation of information centers to guide citizens through complicated institutional processes, or ombudsmen to handle grievances (Kaufman 1977:415-16).

These marginal organizational changes, as well as others, may be more likely to engender public trust and confidence than wholesale reorganizations, at least in the short run (Thomas 1991). Large-scale reorganizations may disrupt established social relationships between organizational members and individuals in the environment. Since interpersonal trust is established through repeated social exchanges, large-scale disruptions of such relationships may decrease trust in the public organization among

those individuals and groups. At the institutional level, some degree of trust may be established simply by recruiting or empowering members of trusted professions. This is not to suggest that large-scale reorganizations are not likely to produce trust in the long run. Public trust may be augmented, for example, if the reorganization increases regulatory oversight of the public organization. Decentralizing authority may also increase public trust if it empowers professions, or compels public officials to interact to a greater degree with private citizens.

CONCLUSION

This paper emphasized the incompatibility of various values and the necessity of choosing between them when deciding whether and how to reorganize a public organization. Since these decisions are profoundly political and should be made by the political actors involved, it would be inappropriate at this point to suggest that certain values, and thus particular alternatives, are necessarily “better” than others. Moreover, even if the actors involved in a specific reorganization were to agree on value priorities, no evidence exists to suggest that specific organizational designs would apply in all circumstances. As Herbert Kaufman (1977:402) noted:

Obviously, no reorganization is inherently right or wrong. No given administrative pattern will invariably increase efficiency, effectiveness, or responsiveness. In particular circumstances, identical organizational arrangements may produce diametrically opposite effects while radically different arrangements may produce identical effects.

Despite the large volume of rhetoric surrounding reorganizations in general, remarkably few empirical studies have charted the intended and unintended effects of particular reorganizations. Table 1 presents a “quick and dirty” summary of this evidence and some of the logic behind organizational design theories.¹⁹ Given the remarkable gaps in our knowledge of the effects of reorganization, any future attempt to reorganize which is driven by instrumental rather than symbolic purposes should seriously consider whether the benefits desired exceed both the political effort required as well as the unknown and unintended effects which will surely follow. Though actors often latch on to reorganization as a panacea for governmental ills, not

all ailments require major surgery. In this vein, efforts short of grandiose reorganizations may be more likely to achieve certain desired outcomes.

TABLE 1

AN/FM Advisory Panel
ORGANIZATIONAL ALTERNATIVES MATRIX EVALUATION

August 1984

Please rank each Organizational Alternative on each Organizational Test.
Use ratings 0 to 4, 0 being lowest and 4 highest.

ORGANIZATIONAL TESTS

ORGANIZATIONAL ALTERNATIVES	Mission Oriented	Ability to Maintain Credibility	Stability and Continuity	Programmatic Authority (Incl. funding)	Access- bility	Respon- siveness	Internal Flexibility (Hire/Fire)	Political Accountability	Immunity from Political Interference	Financial Accountability	Ability to Sti- mulate Cost- Effectiveness	Technical Excellence	Ease of Transition (Phases)	TOTAL
Present Org. Structure														
Sub-Cabinet Office														
Administration in Cabinet Dept.														
Federal Executive Agency														
Independent Federal Commission														
Government- Controlled Corp.														
Mixed Govt.- Private Corp.														
Government- Chartered Corp.														
Utility-Type Private Corp.														
Private Corporation														

Name of Panel Member

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FOOTNOTES

¹"Reorganization" will be loosely treated as any overt, planned attempt to change the structure, and thus the operational characteristics, of a public organization.

²The terms "values," "criteria," and "objectives" will be used interchangeably in this paper.

³The summary table at the end of this analysis can serve as an aid to the reader in sorting the criteria and alternatives.

⁴Rourke (1957), Mosher (1967), Seidman et al. (1971), Meier (1980), Tierney (1981), Conant (1986), and Hult (1987) are notable exceptions. Each examines — with varying degrees of rigor — the effectiveness of specific agency reorganizations at the state and/or federal levels. Their conclusions are interspersed throughout this review.

⁵Public trust and confidence, though seldom discussed in the reorganization literature, are included in this paper because of the specific concerns being addressed by the Secretary of Energy Advisory Board, which commissioned this paper.

⁶Conant (1986) presents a recent case study from New Jersey in which two principles of administrative management — grouping like functions and increasing (rather than decreasing) spans of control — may have produced cost savings on the order of 2 or 3 percent of the state operating budget. Unfortunately, the results are confounded by numerous measurement problems, as well as the absence of statistical controls for effects not related to the reorganization. Moreover, since spans of control were increased (i.e., the number of managers reduced), it is perhaps not surprising that costs were reduced. The more difficult question in this case would have been discovering whether management problems developed as a result, and thus whether the reorganization was efficient (as opposed to simply economizing).

⁷Seidman and Gilmour (1986:13-4) point out that many reorganization plans themselves are not even accompanied by precise estimates of cost savings.

⁸These studies only attempt to measure cost savings (economy) because serious methodological difficulties exist when measuring efficiency in the public sector. As Salamon (1981b:67) notes: "The major stumbling block continues to be the problem of valuing the outputs of government in the absence of a true market." While economy simply assesses inputs, efficiency examines the trade-off between outputs and inputs.

⁹See Seidman and Gilmour (1986:17-20) for supporting anecdotes.

¹⁰Seidman and Gilmour (1986:254-57) have developed a much more extensive typology which includes many organizational forms (e.g., foundations, institutes, and intergovernmental organizations) not considered in this paper.

¹¹It would also be difficult to argue that the Bureau of Land Management in the Department of the Interior is not captured by mining and ranching interests.

¹²Paehlke (1991), however, provides contrary evidence, suggesting public corporations may be no more difficult to regulate than private corporations.

¹³Seidman and Gilmour (1986:272) note that the new "Postal Service is defined by law as 'an independent establishment of the executive branch of the United States,' but in all other respects it is endowed with the powers and characteristics of a wholly owned government corporation."

¹⁴Many of these arguments are reviewed by Donahue (1989).

¹⁵At the state and local level, however, Poole and Fixler (1987:614-15) provide a brief review of empirical studies which suggest that "contracting out tends to be less costly than government provision." These studies tend to focus on services with relatively clear goals and means, such as garbage collection and public transportation.

¹⁶As discussed previously in the section on efficiency, low-cost performance can only be compared relative to a given level of service.

¹⁷Many of these functions also appear to be dominated by contractors in Superfund (Kettl 1991).

¹⁸As cited in Seidman and Gilmour (1986:88).

¹⁹Table 1 does not summarize all of the issues, evidence, and speculations presented in this paper. It is intended solely as an aid to the reader, and is not intended to be conclusive.

AM-FM'S CORPORATE SOLUTION FOR RADIO-
ACTIVE WASTE MANAGEMENT:
APPEALING BUT INAPPROPRIATE?

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INTRODUCTION

The Nuclear Waste Policy Act (NWPA) of 1982 directed the Secretary of Energy to “undertake a study with respect to alternative approaches to managing the construction and operation of all civilian radioactive waste management facilities, including the feasibility of establishing a private corporation for such purposes.”¹ To conduct the study, the Secretary created the Advisory Panel on Alternative Means of Financing and Managing Radioactive Waste Facilities (AM-FM). This paper is an analytic critique of AM-FM’s final report, “Managing Nuclear Waste — A Better Idea” (December 1984).

Given the length of AM-FM’s report, it will not be possible in this paper to provide a point-by-point analysis. Instead, I will focus on the report’s major assumptions and conclusions regarding reorganization of the civilian radioactive waste program. Specifically, I will address two broad questions in this analysis:

- Upon what logical and evidentiary bases did AM-FM recommend a public corporation as the most appropriate organizational form for the radioactive waste management program?
- Are AM-FM’s assumptions and reasoning consistent with current theories and empirical evidence in the academic literature on public-sector reorganization?

The first question focuses on the logical structure of the report, and thus analyzes the report on its own terms. In this respect, AM-FM’s report is essentially a policy analysis. The early chapters discuss program goals (or objectives), alternative organizational structures, and criteria (or tests) by which to evaluate those alternatives; subsequent chapters then evaluate the proposed alternatives and present the Panel’s concluding recommendation to transfer the radioactive waste management program from DOE to a new public corporation. This is a standard format for policy analyses, and it is also an appropriate format for the report since it allows the reader to follow AM-FM’s argument on a step-by-step basis. However, as will be demonstrated throughout this paper, the report is not always internally consistent, and sometimes also neglects to explain how important decisions were reached at various

stages in the analysis.

The second question analyzes AM-FM's argument in light of a review of the academic literature on public-sector reorganization (Thomas 1992) which I conducted *prior* to reading and critiquing AM-FM's report. Because my literature review covered fields of social science research (i.e., political science and public administration) which the Panel did not review in preparing its report, much of this paper directly challenges some of the assumptions and theories which underlie the report. Though readers might question the validity of my challenges given that I have drawn upon some materials which were unavailable to the Panel in 1984, it should be noted the report neither cites nor refers to those materials which were available in the early 1980s. Moreover, many of the post-1984 citations to which I refer are simply extensions of previous lines of research.²

In the sections which follow, we will walk through the logical progression of the report, analyzing AM-FM's assumptions and theories regarding reorganization of the radioactive waste management program. My synopsis of AM-FM's argument will necessarily be incomplete, not only because of space limitations, but also because the report itself does not adequately explain the reasoning behind many of the Panel's decisions.

PROGRAM OBJECTIVES

AM-FM's argument begins with the assumption that "*safe* long-term disposal of high-level radioactive waste" should be the single, overriding objective for all phases of the radioactive waste program (III-2).³ Generally speaking, if we accept an objective as overriding, then at least two consequences follow. First, the organization's structure should be conducive to pursuing a single objective; and, second, all subgoals should be compatible with the overriding objective.

AM-FM clearly pursues the first consequence, arguing, for example, that autonomy (both programmatic and funding) is an important structural feature for promoting mission-oriented behavior. Though autonomy does not necessarily depend upon organizational independence, it does require that programs housed within larger entities — as the radioactive waste management program is currently housed within DOE — should be "relatively independent and insulated from competing pressures from other parts of the larger entity" (III-2). Thus, AM-FM does not immediately

preclude the possibility of retaining the current organizational form or moving the program to another multi-program department; but the report does suggest quite early that structural independence may be preferable. On this point, evidence suggests AM-FM is probably correct in assuming an organization's ability to consistently pursue an overriding objective would likely be compromised in a multi-purpose department (Thomas 1992:33-36).

Unfortunately, the report does not first make the case that radioactive waste disposal need not be coordinated with other federal programs. Coordination is one of the major reasons for housing a program within a multi-purpose department and under presidential leadership (Thomas 1992:26,30). Thus, AM-FM's case for organizational autonomy and independence, which it develops throughout the report, would have been stronger if the Panel had demonstrated that safe long-term disposal should also override the objectives of all other federal programs (e.g., those comprising national environmental and energy policies), and that these programs would have little to gain from organizational interdependence.

In regards to the second consequence of pursuing an overriding objective — compatibility of subgoals with the primary mission of safe long-term disposal — AM-FM's argument is much less developed, and thus difficult to analyze and critique. The primary problem here is that the report never defines "safe disposal," even in broad terms, and thus the overriding objective is extremely vague. While few would disagree with the import of AM-FM's overriding objective given the long-term toxicity of radioactive waste, without upper and/or lower bounds on safety, the overriding objective assumes the role of a conceptual theme, rather than a clearly defined (or even broadly bounded) target. Thus, it is difficult to ascertain whether, and especially to what degree, other programmatic objectives — such as cost-effectiveness or reprocessing — conflict with the overriding objective.

In discussing subgoals, the report usefully distinguishes five phases of the program — siting, construction, operation, transportation, and monitoring after closure — arguing program objectives for each phase should differ because of the differing cluster of activities required by each phase. Unfortunately, the report does not tell the reader how the Panel derived the "key objectives" for each phase. While the Panel may have had strong justifications for making such decisions, based either upon background reports, testimony, and/or internal deliberations, the justifications

are not presented in the report itself. More specifically, the report does not explain why some of these objectives change in subtle ways from phase to phase. For example, why is "public acceptance" important in the siting phase but not in the next two phases, construction and operation? Is public acceptance of the project only important during siting considerations? This appears to be AM-FM's thrust since the last two phases, transportation and monitoring after closure, simply include "addressing public concerns" as an important objective but not "public acceptance."

Moreover, regardless of the validity of the key objectives, the report only begins to trace out the logical consistency of these subgoals and their relationship to safe long-term disposal. Efficiency, for example, is cited as a key objective in the construction and transportation phases (III-7,11), but the report is extremely vague when addressing potential conflicts between organizational incentives which control costs (III-7) and those financial incentives which are necessary to achieve technical excellence (III-6) and thus safe long-term disposal (V-6). Though the report enumerates many such incentives, it does not explore their interdependencies or attempt to reconcile potential conflicts.⁴ We will return to this theme later in the paper since the Panel subsequently ranks cost-effectiveness as one of the five "most important" criteria for evaluating organizational alternatives (VIII-15).

Even within a given phase of the program, and regardless of the imperatives of the overriding objective, the report does not adequately identify the interdependent relationships between the Panel's key objectives. In the siting phase, for example, AM-FM assumes the key objectives should be (1) achieving technical excellence, (2) gaining public acceptance, and (3) obtaining construction authorization. Although the report identifies some important relationships between these objectives, it overlooks others. Public acceptance, we are told, is in part dependent upon the objectivity and credibility of technical activities (III-4). Yet the report neglects to reconcile other aspects of public acceptance — i.e., those based on "issues such as equity and procedural fairness" (III-4) — with the Panel's assertion that "[a] technically sound site is essential to the safe management of radioactive waste" (III-2). Are procedures which enhance equity and procedural fairness compatible with those which promote scientific objectivity? Unfortunately, the report only briefly mentions equity and procedural fairness in passing (III-4),⁵ and does not further develop these concepts in relation to either public acceptance or organizational credibility.

The report's distinction between the five phases is a useful exercise, however, because it simplifies the analytical problem by ordering objectives temporally. If the program can indeed be separated into distinct phases, then it is plausible to assume the "best" organizational alternative might be a set of distinct organizations, each appropriate for a specific phase or phases. In this regard, AM-FM repeatedly notes throughout the report that siting and closure — the first and last stages — may involve tasks requiring organizational structures which are incompatible with each other as well as with the middle three operational phases. Given the extraordinary timeframe of the program and the range of tasks to be performed, it may in fact be unrealistic to assume that one type of organizational structure is appropriate for all five stages. Carried further, it is possible to imagine a series of sets of organizations (whether longitudinal or contemporaneous), each designed to carry out various aspects of one or more phases.⁶

PROGRAM CHARACTERISTICS

The report next presents a list of "salient characteristics" of radioactive waste management (IV-1). Since I am relatively unfamiliar with the specifics of the program, I will not attempt to examine the adequacy of this list. Instead, I will focus on its relationship to AM-FM's argument. In this regard, two issues are particularly troubling. First, the Panel does not methodically link its list of program characteristics to the rest of the argument. Later chapters of the report simply draw upon these characteristics in a casual fashion. Some characteristics assume prominence; others are never systematically tied to organizational form. In subsequent sections of this paper, I will attempt to reconstruct some of these links by culling phrases and ideas from various chapters in the book.

Second, the list offers a relatively early indication of the Panel's private-sector orientation, and thus its bias towards market-like alternatives for radioactive waste management. Though evidence of this bias can be found throughout the report, it is readily apparent in the discussion of program characteristics, particularly in the Panel's repeated use of the term "business" (rather than "public program" or "operation") to characterize radioactive waste management.⁷ According to the report: "A primary characteristic of waste management is that it seems to be inherently a monopoly or a franchised type of business..." (IV-1). Because this term is used so

frequently to characterize the program, readers are led early in the report to assume radioactive waste management activities are more like those of a private business than a government operation, thus implying that alternatives which take advantage of the program's "business-like" character should be preferred. Indeed, this emphasis continues in subsequent chapters when the Panel presents and evaluates alternatives. Corporate alternatives receive significantly greater attention in these later chapters in terms of the variety of options presented and the level of detail and analysis which accompanies them.⁸

Similarly, the Panel argues the "monopoly nature of the business is...likely to result in utility-type regulation..." (IV-2). Again, this phrase conjures up images of private monopolies, though now subject to rate and service regulation. Together, these assumptions tend to preclude certain organizational options and lead to greater emphasis on others. For example, though AM-FM later suggests the Federal Energy Regulatory Commission (FERC) could assume responsibility for regulating the utility (VI-6) or corporation (VIII-6), another possibility would be to have waste-producer fees set by a commission organized solely for this task. U.S. Postal Service rates, for example, are reviewed by the independent Postal Rate Commission.⁹ Likewise, the radioactive waste management program — whether an independent public agency or a private corporation — could have its rates reviewed by a specialized rate commission, rather than a multi-purpose regulatory commission.

The pro-market, or anti-government, ideological orientation of the Panel is also apparent in its discussion of political accountability as a program characteristic. Though Panel fears of "political interference" are more prominent later in the report, they surface briefly in this chapter when the report argues the program is "subject to a great deal of political oversight" (IV-5) which "not only limits the organization, but will consume a great deal of time and attention by senior management officials" (IV-6). In general, the report stresses the liabilities of political accountability, rather than the positive aspects of political oversight.

Though perhaps expected given the prevalence of anti-government rhetoric during the Reagan Administration, this pro-market bias is troubling given the absence of documentation in the body of the report. With no citations to be found anywhere in the text, such statements must be read simply as Panel assertions rather than necessary characteristics of the program. The composition of the Panel is probably indica-

tive of the source of the report's ideological orientation. Combined, its thirteen members had only limited experience in federal government; and a majority (seven of the thirteen) were either corporate executives or attorneys from private law firms (Appendix A). Many academics and public officials would characterize the program differently. Yet, the report's bibliography (Appendix G) does not include any citations from the extensive academic literature on organizational forms or the effectiveness of reorganization as a strategy for organizational change. Nor is it apparent from the list of panel briefings and public comments accompanying the report (Appendix F) that social scientists with expertise in this area (with the possible exception of representatives from the National Academy of Public Administration) presented evidence regarding the advantages and disadvantages of various organizational forms. Instead, AM-FM relied heavily upon numerous background papers produced by Battelle Memorial Institute (Appendix G), a non-profit research consultant specializing in the development of new technologies, including radioactive waste management.

CRITERIA FOR EVALUATING ALTERNATIVE ORGANIZATIONAL FORMS

Following its enumeration of program objectives and characteristics, AM-FM presents thirteen "tests" by which alternative organizational structures for the radioactive waste management program can be evaluated. The report notes the Panel derived these tests from the objectives stated in Chapter III, as well as from the list of "salient characteristics of radioactive waste management" developed in Chapter IV (V-1). Unfortunately, the report does not clearly explicate the connections between the organizational tests and the program objectives and operational characteristics which logically preceded them. In general, however, the tests are more clearly tied to the objectives than they are to the program characteristics.

In the following paragraphs, I attempt to reconstruct these links in order to better understand why the Panel believed the tests to be important. I have preserved the order of presentation in the report even though the Panel notes this ordering is not indicative of the relative importance AM-FM accorded the tests (V-2).¹⁰ The underlined phrases indicate how the tests are initially worded in the report (V-1). Non-underlined phrases represent my own reconstruction of AM-FM's argument. With

these caveats in mind, the following thirteen tests represent AM-FM's view of an appropriate radioactive waste management organization:

- *The organization should be mission-oriented* in order to pursue the overriding objective of safe long-term disposal of radioactive waste (III-2). This means gearing all of the organization's activities toward this end, rather than allowing resources to shift between a series of relatively unfocused activities (V-2). Since the "mission orientation" test speaks to the ability of the organization to pursue the program's overriding objective, it should be paramount in all phases of the program (III-2).
- *It should be able to maintain credibility with all stakeholders*, including "states, tribes, local governments, environmental groups, scientific groups, nuclear utilities, residents near potential repository sites, and federal agencies such as the Nuclear Regulatory Commission and the Environmental Protection Agency" (V-3). Credibility will likely reduce the opposition of these groups to the organization (V-3), and is thus particularly important in the siting phase, since organizational credibility enhances public acceptance and thus facilitates the process leading to construction authorization (III-4,5). Given the veto provisions in NWPA, the organization "must be capable of accomplishing its mission within a negative and perhaps obstructionist environment by spending a substantial part of its time dealing with state, Indian tribes, and other constituencies to resolve issues and concerns" (IV-6,7).

Credibility is intertwined with several other organizational tests since the ability to maintain credibility is dependent upon similar factors (V-3). These factors include: commitment to the overriding mission ("mission orientation"); technical objectivity ("demonstrating technical excellence"); sharing information and being open to new options ("accessibility" and "responsiveness"); and sticking to plans ("stability and continuity"). Credibility is particularly dependent upon stability and continuity (V-3; XII-1). Though AM-FM enumerates the importance of some of these factors after

construction has been authorized, credibility is itself prominent only in the siting phase.

- *It should have stable and continuous processes* since stability and continuity promote “long-term relationships with interested groups” and assure the maintenance of “careful and consistent technical standards” (V-3).¹¹ Stability implies that “changes in structure, process, or personnel be carefully planned, logically defensible, and understandable to outside observers” (V-3). Thus, stability and continuity are important determinants of the ability of the organization to achieve at least two of the other tests: credibility and technical excellence. Stability also permits a consistent management system to evolve in which long-range planning aids the organization in securing adequate funding (III-7) and managing the flow of radioactive waste into the facility (III-8). The primary sources of instability and discontinuity are political appointments and budgetary politics (VIII-4).¹²

- *It should have programmatic authority (including funding)* so the organization is “free to choose among alternative approaches and priorities to meet its goals” (V-4). Though organizational choices could still be reversed by Congress or the courts if the choices do not clearly relate to the organization’s mandate, the organization should be able to make these choices “without substantial prior restraint” (V-4). This test is based (at least implicitly) on the Panel’s belief that the organization should be imbued with technical excellence, and that technical (rather than political) expertise should be the logical foundation for carrying out the activities of all phases of the program (see Chapter III). Programmatic authority is also necessary in order for the organization to make and keep commitments, to negotiate solutions to disagreements at the local level, and thus to gain public acceptance (III-5).¹³

Though funding authority appears somewhat incidental in the report’s description of this test, repeated attention is given throughout the report to independence from the vicissitudes of the congressional appropriations process. Stable financing, for example, is cited by the Panel as a key objective in the construction phase because of its affect on quality, timeliness, credibility,

and cost-effectiveness (III-6).¹⁴ Long-term financing is also an integral component of providing continuity after the facility has been closed, a key objective during the program's final phase (III-11).

- *It should be accessible* to all stakeholders in order to "maintain credibility and public confidence, and to facilitate prompt achievement of the program's goals"

(V-4). Accessibility refers to organizational openness to the comments and participation of interested groups and individuals, as well as the willingness of the organization to share information and hold hearings (V-4).

- *It should be responsive* to stakeholders (presumably for the same reasons the organization should be accessible to them). Responsiveness means the organization is not merely accessible, but also considers in good faith, and evaluates carefully, the comments and suggestions of stakeholders (V-4). Accessibility and responsiveness both have "a major influence on an organization's ability to maintain credibility"

(V-1). More broadly, the organization can increase the likelihood of achieving public acceptance if it actively seeks to interact with outside groups through both formal and informal channels (III-4). Though public acceptance is primarily important during the siting phase because it facilitates construction authorization, AM-FM believes the organization should also address public concerns during the transportation phase "if it is to accomplish its mission with minimal interference and delay" (III-10). Finally, the organization should be open and responsive to requests for information when the facility has been closed (III-12).

- *It should have internal flexibility to allocate and reallocate resources, including the ability to hire and fire.* Internal flexibility is the intra-organizational complement to programmatic and funding authority. Since the organization is to be given the authority to raise funds and to carry out its programs independently of political direction, it should then not be burdened with rules and procedures which inhibit its ability to alter programs, to transfer re-

sources, and to hire individuals at competitive wages and to fire those who are unproductive (V-5). Internal flexibility enables the organization to achieve technical excellence (III-3), which is itself an integral component of maintaining credibility and carrying out organizational objectives. Moreover, internal flexibility facilitates construction authorization by giving staff members the "power and ability to interact with regulatory officials about standards and designs [which] should reduce controversy and speed approval" (III-5). Presumably, internal flexibility will also allow the organization to respond to fluctuations in waste volume (IV-2) and to cope with technical and regulatory uncertainty (IV-4,5).

- *It should be politically accountable* "to ensure that the organization complies with the broad objectives of the program and performs its functions in a manner consistent with legislative, regulatory and procedural standards governing the program" (V-5). The Panel defines "political accountability" narrowly, however, arguing that the organization should only be accountable on "broad issues, such as overall program objectives," and that actions should be reviewed "after they take place" rather than before (V-6). This type of political accountability would be sufficient to help build public support "since it provides a review mechanism for the organization's activities that is accessible to all interested parties" (V-5). AM-FM sought to limit the scope of political accountability apparently because it was troubled by the complex web of congressional committees which then had jurisdiction over the program, arguing such oversight "not only limits the organization, but will consume a great deal of time and attention by senior management officials" (IV-6).

- *It should be immune from political interference*, since political preferences "should not affect hiring practices, pre-siting decisions, and day-to-day activities" (V-6). Though political accountability is important, the organization should not have to respond to the demands of newly elected officials; decisions should be made on technical, rather than political grounds (V-6). Again, as seen above in the test regarding programmatic and financial au-

tonomy, AM-FM strongly emphasizes technical decision-making processes, and seeks to limit the involvement of elected officials.

- *It should be financially accountable* to either private accounting firms or public accounting agencies in order “to ensure that funds are spent for legitimate and intended purposes” (V-6). Presumably, financial accountability, along with political accountability, would assure stakeholders the organization is not abusing the independent authority (both programmatic and funding) which AM-FM argues should be an integral component of the program.
- *It should be able to stimulate cost-effectiveness* because the radioactive waste management program will be an expensive undertaking, and should thus “be able to provide incentives for improved performance” (V-6). Though the report is unclear as to how or which costs should be contained, it consistently argues cost-effectiveness should be “commensurate” with technical excellence (V-7) and “subject to the paramount goal of safety” (III-11). The goal of competitive procurement, for example, should be to find “the most cost-effective proposal, not necessarily the cheapest” (III-3). AM-FM thus appears to be concerned about efficiency (least cost production for a given quality of output) rather than economy (achieving cost savings regardless of the output quality).¹⁵ “Cost efficiency” is in fact cited earlier in the report as a key objective for the construction phase (III-7). Efficiency should be encouraged by creating incentives for innovation and cost control, combined with external financial monitoring and close oversight of contractors (III-7).¹⁶
- *It should demonstrate technical excellence*, which is a “fundamental goal of the organization” (V-6). Technical excellence, “not merely competence” (V-7), is a necessary condition for achieving the overriding objective of safe long-term disposal (V-6); and is also a “key objective” in the siting and construction phases. Technical excellence is interdependent with several other tests. Failure to achieve technical excellence, for example, could lead to delays in meeting the overriding objective, as well as “substantial public

distrust" (III-2). Technical excellence depends upon the ability to recruit qualified individuals and to conduct tests and construct and operate facilities according to appropriate technical standards, factors which AM-FM believes require programmatic and funding authority, as well as internal flexibility, buttressed by the careful oversight of independent experts (III-3; V-6,7).

- *It should be able to effect a smooth transition in replacing the present organizational structure* in order to avoid delaying the program's schedule, damaging its integrity, and/or inflating its budget (V-7). Though the report does not specify the necessary or sufficient conditions for a smooth transition, it does assert that the longer the program is housed in the current organization, the more difficult will be the transition to a new organization (VIII-13). As will be discussed below, the Panel does not address political considerations regarding organizational change, and thus the feasibility of recommending various alternatives to the present structure.

These thirteen organizational tests intertwine to produce a complex array of interdependent demands on the preferred alternative. Though the report does not explicitly arrange these tests in a hierarchical or causal order, it is certainly possible to do so based upon the arguments I have reconstructed above. Underlying the tests is the assumption that technical or professional processes, rather than political concerns, should motivate decisions. In this regard, technical excellence — a necessary condition for achieving the overriding objective of safe long-term disposal (V-6) — is enhanced by stability and continuity (and thus immunity from political interference), internal flexibility, and programmatic and funding authority.

In addition to technical excellence, credibility also plays a pivotal role in the organizational tests since credibility facilitates construction authorization, and thus allows the program to proceed to subsequent phases. Credibility is similarly enhanced by many of the other tests, including mission orientation, accessibility, responsiveness, stability and continuity, and immunity from political interference. Cost-effectiveness is not clearly tied to either of these two sets of logical relationships, but is rather treated as a separate theme which the Panel believes should not detract from either safe disposal or technical excellence. In sum, though AM-FM

does not methodically link its organizational tests to the program characteristics and objectives presented earlier, the tests themselves are consistent, and can be reduced to two major themes: gain construction authorization through credibility, and achieve safe disposal through technical excellence.

Though AM-FM's list of tests is extensive and consistent, it does not exhaust all possible criteria by which we could assess organizational performance. As previously noted, the Panel excluded equity and procedural fairness from consideration, even though these criteria might be important determinants of public acceptance. Safety itself is not a test, but is rather an overarching objective which the Panel believes can be achieved through other tests, such as mission orientation and technical excellence. Credibility is also not equivalent to public trust and confidence (Thomas 1991). Since little is known about the links between organizational structure and such amorphous concepts as equity, safety, and trust (Thomas 1992), it is, on one hand, expedient to exclude them from the organizational tests. On the other hand, the Panel never justified excluding equity and procedural fairness from consideration. Moreover, AM-FM does not define some of the concepts it uses — safety and credibility, for example, are simply defined in terms of their antecedents. Thus, the report glosses over some important issues, and in so doing appears to exclude certain criteria from the evaluation process.¹⁷

TEN ORGANIZATIONAL ALTERNATIVES

AM-FM presents ten organizational alternatives for the radioactive waste management program, including the current structure within DOE (circa 1984). As the report notes, the alternatives "cover the spectrum from a conventional government agency to a purely private corporation" (VI-1). This means the alternatives vary primarily on the public/private dimensions of ownership and control. As we move down the list, the organizational types evolve from politically centralized organizations to politically decentralized and ultimately privately owned organizational forms. The following descriptions are condensed from those given in Chapter VI of the report:

- *The present organizational structure*, which includes three primary components: the DOE Office of Civilian Radioactive Waste Management

(OCRWM), several DOE regional operations offices, and a number of contractors. The OCRWM Director reports directly to the Secretary of Energy, and is appointed by the President. The Operations Offices are independent of OCRWM, and report directly to the Secretary of Energy. "These offices are involved in a wide variety of activities, including many that are not related to radioactive waste" (VI-2). According to the report (VI-2): "OCRWM has responsibility for overall program planning, financing and execution, while the Operations Offices manage research and site investigation activities. Contractors are heavily involved in program activities at both the headquarters and Operations Office levels."

- *A sub-cabinet office* within an existing cabinet department or federal executive agency, such as the Bureau of Reclamation within the Department of Interior or Superfund within the Environmental Protection Agency. "This organizational alternative is essentially very similar to OCRWM, but is described here in generic terms for purpose of comparison" (VI-3). As with the current structure, the office would have a few senior political appointees and the remainder of the staff would be career civil servants. Major policy decisions would have to be approved by the cabinet secretary or agency administrator, and possibly by other officials within the larger organization since the office would rely on the organization's staff branches for legal, administrative, and financial services.

- *An administration responsible to a cabinet department*, such as the Bonneville Power Administration and the Army Corps of Engineers. While similarly housed within a department, an administration would be more independent than a typical sub-cabinet agency. Autonomy could be achieved through reliance on its own staff functions rather than the department's legal, administrative, and financial staff. Though relatively autonomous, major policy actions would probably still be cleared with the cabinet secretary or one of his or her deputies. Financial autonomy from the department (but not from Congress) would be achieved by giving the administration a separate section in the federal budget.

- *A federal executive agency*, such as the National Aeronautics and Space Administration (NASA), which is independent of other organizations in the executive branch and whose administrator reports directly to the President. The agency would have its own staff, would develop its own budget, and would not have its appropriations channeled through another organization. Thus, a federal executive agency would be independent in the same way a federal commission (below) would be independent.¹⁸ Inexplicably, however, AM-FM chose to attach the term “independent” only to the title of the commission alternative (below). In theory, they are both examples of independent federal organizations.

- *An independent federal commission*, such as the former Atomic Energy Commission. This alternative differs from the federal executive agency with regard to political appointees. Rather than having a single administrator reporting to the President, a commission is headed by five or seven individuals who set policies based on majority rule, and who are appointed by the President to staggered, multi-year terms. The commissioners “sometimes represent particular constituencies, and may intentionally provide a specified partisan political balance on the commission” (VI-4). Though the report also notes that a defining attribute of the commission form may be the ability to obtain exemptions from civil service provisions, there are no clear theoretical reasons why such exemptions could not also be obtained for other executive branch alternatives, including independent executive agencies and sub-cabinet offices.

- *A government-controlled corporation*, such as the Tennessee Valley Authority. As the Panel correctly notes, there is “considerable variation among the specific characteristics” of government-controlled corporations, which the federal government generally employs in the case of commercial interactions with the public where the organization is “usually intended to break even or make money on some or all of its activities” (VI-4). In the general model, all stock is either held by the federal government or the corporation is created without equity. The organization is headed by a board of

directors appointed by the president, which in turn selects the executive officer. According to the report (VI-5): "Presidential influence would be less than for an executive agency, but Congressional involvement and oversight would still be significant."¹⁹ The corporation's budget would be independent of other organization's budgets, "would probably be more similar to the budget of a private firm than that of a public agency," and would follow private-sector rather than governmental auditing procedures (VI-5). The staff may or may not be covered by civil service provisions.

- *A mixed government-private corporation, such as AMTRAK.* A mixed corporation differs from a wholly-owned corporation in that some of its stock is held by private individuals or corporations, with the sale of stock providing the corporation with another source of revenue. The federal government, however, usually maintains majority ownership, and places limitations on who can own stock and how much stock they can hold. Seats on the board are then "usually apportioned to reflect the ownership shares of the different groups" and thus "provide another avenue for oversight" (VI-5). Given that some stock is held privately, OMB and Congress might have less financial oversight, and "the corporation's employees might not be covered by civil service provisions, although some sort of labor agreements would probably be in place" (VI-5).
- *A government-chartered private corporation, such as the Communications Satellite Corporation (COMSAT),* which is created by the federal government and then transferred to private ownership, either gradually or immediately. "This approach is often thought of as a way to reduce obstacles to private activities in a particular field" (VI-6). As with the mixed-ownership corporation, the government would establish limitations on stock holdings, with seats on the board apportioned based upon these holdings. While the government might hold a few seats to make sure the public interest is represented, the corporation would be "free to set policies as it wishes, without approval or oversight by the government," as long as those policies conformed to the corporation's enabling legislation (VI-6). Though the govern-

ment-chartered private corporation would maintain its own budget, which would not be subject to government approval, the federal government might still collect and funnel revenues to the corporation.

- *A utility-type private organization*, such as the Ohio Valley Electric Corporation or Middle South Utilities. With the exception of being regulated, this alternative would be organizationally unrelated to the federal government. Instead, it “would be a private entity organized in a fashion similar to a utility, and in fact might be a consortium of nuclear utilities or other groups” (VI-6). Congress would presumably give the organization “full authority” over the program (VI-6). Like the other corporate alternatives, the utility “would probably have a Board of Directors selected by the stockholders or participants in the organization” (VI-6). Regardless of whether the utility is for-profit or not-for-profit, its fee structure would be regulated, and its internal finances would follow private accounting practices.

- *A private corporation*, such as Westinghouse Electric Corporation, which would be free to set prices in “the absence of economic and policy regulation” (VI-7), and thus would be dissimilar to the utility-type private alternative. Though the firm would probably be granted a monopoly over radioactive waste management activities, “it is possible to imagine allowing several firms to be involved” (VI-7). The corporation’s prices would be regulated by the market, rather than the government, since individual utilities could choose either to expand on-site storage or switch to a competitor.

Although this list might appear to encompass all potential alternatives, these ten organizational types are neither mutually exclusive nor completely inclusive. In other words, the categories both overlap and exclude several feasible types. The U.S. Postal Service, for example, could be categorized in this typology either as an independent agency (albeit multi-headed) or as a government-controlled corporation. Noting this discrepancy in an appendix to the report, AM-FM simply chose to classify the Postal Service as a government-controlled corporation, even though it is not clearly an example of the latter (C-27).²⁰ Moreover, the first two alternatives, as the

report itself notes, are “essentially very similar” (VI-3) — the present structure simply being an example of the sub-cabinet model. Thus, AM-FM actually presents nine general models rather than ten; only four of which — less than half — represent non-corporate forms.²¹ The Panel could have expanded its range of alternatives, and thus have been more inclusive, if it had offered (and later evaluated) a clearly specified sub-cabinet alternative to the present structure.²²

As these examples suggest, the Panel’s list does not exhaust the number of potential alternatives. Though AM-FM argued its alternatives represent general models, and thus each alternative model includes a variety of specific organizational structures (VI-1), the models are not general enough to include all feasible organizational structures. Moreover, the report does not justify excluding certain organizational forms from consideration, noting only that the chosen “alternatives were derived from literature search, organizational structures used in other countries, suggestions made at the Panel’s public meetings, and research into various existing organizations” (VI-1).²³

For the purpose of balancing the report’s presentation, some additional organizational alternatives could include:²⁴

- *A cabinet-level department*, such as the Department of Energy, in which all activities related to radioactive waste management would be housed under a cabinet secretary. Cabinet departments are sometimes created as symbolic gestures demonstrating presidential or congressional concern for an issue (Thomas 1992:4-5). Thus, this alternative might elevate radioactive waste management in terms of national priorities, and may even increase the certainty and continuity of congressional appropriations. A cabinet-level department would also increase political accountability and control, and might provide a strong means for presidential administrations to coordinate radioactive waste management with related issues (Thomas 1992:14,34). Major policy decisions would not have to be approved by non-elected officials outside the organization, since the new department would not be housed within another organization. This would be the most politically centralized alternative, and would thus expand the range of alternatives along this dimension.

- *A centralized sub-cabinet office.* As contrasted with OCRWM, this alternative's regional offices would be centralized under (rather than independent of) the director of the sub-cabinet office. Thus, it would be highly centralized under a hierarchy of political appointees (the Office Director and Department Secretary), permitting greater coordination within the organization (rather than fostering competition among the units). Other elements of this sub-cabinet alternative might include the use of fewer contractors at the regional and/or headquarter levels, and the abandonment of activities unrelated to radioactive waste management by the regional offices. In other words, many of the problematic features of the current organization addressed in AM-FM's report could simply be restructured, without moving the program to an entirely new organization.
- *A sub-cabinet institute,* such as the National Cancer Institute (housed within the Department of Health and Human Services), or the Institute for Materials Research (housed within the Department of Commerce). Since the early phases of the radioactive waste management program require basic scientific research with regard to geologic isolation of radioactive materials, a logical alternative would be to reorganize at least part of the program into a research institute to be housed within DOE or another department. This alternative might lend the program a degree of legitimacy and trust if the public perceived research was being carried out according to scientific standards and professional practices (Thomas 1991).²⁵
- *A private institute,* such as the Rand Corporation, Brookhaven Laboratory, or the Oak Ridge National Laboratory. Private institutes are organized by the federal government to provide contractual services, often on a non-profit basis. Since the institute would be privately operated, it might have greater internal flexibility than a sub-cabinet institute to achieve technical excellence. On the other hand, monitoring costs might be greater, and a private institute might be perceived as less credible or less accountable than a sub-cabinet institute.

- *A public organization at the state or regional level,*²⁶ such as those specified by NWPA for managing low-level radioactive waste. Essentially, the federal government would give programmatic authority to a newly created state agency or regional body, and retain regulative authority. Since the specified state(s) would have greater control over the organization, this alternative would be more likely to address the concerns of local stakeholders. The state or regional organization could also be given financial authority, perhaps including discretionary control over a specified percentage of the nuclear waste fund as a means for ameliorating perceived social, economic, or environmental impacts.
- *A multi-organizational system,* in which several public and/or private organizations each carry out specified activities. Generally speaking, all of the alternatives discussed thus far in this paper would involve several organizations since regulatory authority would be housed in agencies such as the EPA and the NRC. This alternative, however, would parcel out functional aspects of the program, clearly specifying their legal relationship to one another. This might include, for example, a national institute to conduct scientific research, an operations organization to construct and operate the facility, an independent rate commission to establish fees,²⁷ and a regulatory oversight organization charged specifically with overseeing operations.

In sum, AM-FM's list does not exhaust the potential range of alternatives. Moreover, corporate alternatives comprise half its list. This emphasis creates the impression that corporations (whether public, private or mixed) represent approximately half of the available (or feasible) alternatives. However, as my additional list of alternatives suggests, AM-FM excluded several types of public organizations from consideration; and it did so without justifying such decisions in the body of the report.

AM-FM NARROWS THE ALTERNATIVES FROM TEN MODELS TO FOUR GROUPS

The Panel's emphasis on corporate alternatives continues in the next chapter (VII). Here, the original ten alternatives are reduced to four; and, again, this is done without providing the reader with any explicit theoretical or empirical justification for grouping the alternatives in this manner.²⁸ Without even evaluating the original ten alternatives in light of the organizational tests, the Panel simply winnowed consideration to the following four groups:

- The present organization
- An alternative governmental approach
- A public/private entity
- A private corporation

AM-FM also changed its methodology in this chapter. Rather than presenting the four groups as general models, the report notes the Panel used the groups as organizing principles, dividing itself into several work groups, each of which then developed specific models within the four categories (VII-1). Rather than discussing and evaluating the categories themselves, the report presents and evaluates the specific models developed by the work groups.

Since several alternatives in the original list — i.e., the sub-cabinet office, the administration responsible to a cabinet department, the government-controlled corporation, and the utility-type private organization — disappear from consideration, it would seem as if they are no longer in the running.²⁹ In addition, the federal executive agency (FEA), though discussed in tandem with the independent federal commission (IFC) under the group entitled "alternative governmental approach," is given subordinate treatment.³⁰ If the Panel had evaluated the categories rather than the models within the categories, then the report might still have included evaluations of several of its original alternatives. Instead, it appears AM-FM simply winnowed some alternatives from consideration without evaluating them. Surprisingly, however, a version of the government-controlled corporation ultimately reappears as AM-FM's preferred alternative.

Given this evolving methodology and the absence of justifications for exclud-

ing and winnowing various alternatives, AM-FM's argument becomes almost inscrutable at this point in the report. Rather than attempt to guess the Panel's reasoning behind such decisions, I will simply discuss some of the problems which might arise in considering the four categories and the specific models the Panel presents within the categories.

In the first category, the present organization, AM-FM again simply presents OCRWM, citing the specific structural and operational characteristics of the program as it existed in 1984. Even though the report notes the existence of "serious questions" regarding OCRWM's "ability to carry out successfully the formidable tasks mandated by the Nuclear Waste Policy Act" (VII-3), the Panel chose not to offer a modified version of OCRWM as one of its final list of alternatives. "Quite simply, the Panel did not view its charge from the Secretary of Energy as that of assuming the role of a management consultant" (VII-3).³¹ Since the Panel notes the existence of OCRWM's "serious" shortcomings in both this chapter (VII-3) and the conclusion (XII-1), but does not recommend changes which would mitigate the problems, this alternative appears to be a strawman. Moreover, in selecting OCRWM specifically, all other variants of the sub-cabinet model are essentially excluded from consideration.³² Since the Panel does not offer a sub-cabinet model in the "alternative governmental approach," OCRWM becomes the only alternative in a cabinet department.

For the "alternative governmental approach," AM-FM offers an independent federal commission (IFC), and briefly compares it to a federal executive agency (FEA). Despite the assertion that these two models are "relatively distinct" (VII-6), the report only distinguishes them on the basis of top management. The IFC would have five commissioners appointed for seven years to staggered terms, while the FEA would have a single administrator appointed to a twelve-year term. The report, however, presents no evidence as to why the Panel prefers IFC over FEA, nor does it inform the reader as to how the Panel arrived at the number of commissioners, the length of terms, or any of the other specific details in the models. IFC differs from the current structure in at least several ways: it would be led by a commission rather than a single director; it would be independent of a cabinet department; and it would have three advisory groups, one representing major constituencies and the other two charged with technical review and cost-effectiveness.

For the "public/private entity," AM-FM presents the "Corporation for Waste

Management" (CWM), a mixed-ownership, government-chartered corporation, the equity of which would be apportioned among various stakeholders. In presenting this model and the two private corporate models in the following category, AM-FM again demonstrates its bias in favor of corporate alternatives. These three models each receive approximately five pages of description, while OCRWM and IFC each received approximately two pages. In the case of CWM, the bulk of this description is devoted to careful delineation of stock ownership and corporate control. Nuclear utilities would receive the greatest share of stock at 38%, with the federal government and all other stakeholders each receiving 31%. The Panel further specifies breakdowns within these categories, and ties ownership percentages directly to the appointment of the seventeen board members.³³ The board of directors would select the president and set the fees charged to utilities. It would also be responsible for all external and internal accountability functions. The corporation would be exempt from civil service requirements, and the nuclear waste fund would be removed from the federal budget. As with IFC, the Panel does not explicitly justify any of these specifications.

For a private corporation, AM-FM offers two models rather than one, introducing them both with great fanfare: "Indeed, it can be strongly argued that a free enterprise economy generally favors such options and, therefore, that each of the other three must bear the burden of showing itself superior in order to be selected" (VII-15). In light of the overriding objective upon which AM-FM's argument is founded, this is a bold, if not reckless, assertion. A free-enterprise economy is typically lauded for profit-motivated efficiency, rather than for safety or long-term, multi-generational considerations. If safe long-term disposal is indeed the overriding objective, then market-driven alternatives should bear the burden of showing themselves superior to public-sector alternatives.

The first of AM-FM's two private models, ANCORP (the American Nuclear Corporation), would be privately owned and controlled. "A major portion of its ownership would be in the hands of such nuclear stakeholders as the electric utilities and the purveyors of nuclear energy equipment and services" (VII-15). The federal government would organize ANCORP, quickly turn it over, and then regulate it as a private firm during the construction, operation, and transportation phases. Since ANCORP would not be a government entity, the Panel decided this alternative would

be inappropriate for site selection. Oddly, the Panel recommends OCRWM continue its site-selection efforts, despite repeated assertions throughout the report of OCRWM's shortcomings regarding this phase. After OCRWM selects a site, ANCORP would have the option either to use the repository, reprocess the waste, or store the waste either at reactor sites or in a monitored retrievable storage (MRS) facility. ANCORP's revenues would come from fees charged to utilities as well as from "any economic value from reprocessing" (VII-18). The Panel thus assumes "Decisions about use or disposal of spent fuel should be made on sound economic grounds" (VII-16).

The second model, BIDCORP³⁴, would differ from ANCORP in the following ways. It would be responsible for all phases, including site selection; it would be selected on the basis of competitive bidding, rather than being organized by the government; and site selection would be conducted by a board representing various constituencies. In most other respects, ANCORP and BIDCORP are similar, and are presented on a relatively equal footing in the report.

TEST-BY-TEST EVALUATIONS OF THE FOUR GROUPS OF ALTERNATIVES

The report then devotes two chapters (VIII and IX) to evaluations of the four groups of alternatives. The potential force of these chapters is diminished, however, since the Panel has already selected, winnowed, and refined many alternatives. Only the five finalists — OCRWM, IFC, CWM, ANCORP and BIDCORP — are explicitly evaluated. Moreover, the report has already "tipped its hand" in many respects, having begun the evaluation process while presenting the alternatives. For example, rather than impartial treatments in earlier chapters, we have thus far been told there are "serious questions" regarding OCRWM's ability to carry out its mandate (VII-3); and that the public alternatives "must bear the burden" of showing themselves superior to the private corporate alternatives since a free enterprise economy favors the latter (VII-15). Such assertions are indicative of the overall thrust of the report, and foreshadow the outcome of the evaluation chapters. In short, the report does not allow the reader to independently evaluate the various alternatives.

AM-FM approached the evaluation process in two ways: a qualitative test-by-test analysis, and a quantitative matrix analysis. Though the Panel found neither

TABLE 1
REORGANIZATION STRATEGIES IN THEORY AND PRACTICE

	Economy (cost savings)	Efficiency	Effectiveness (achieves organizational goals)	Political Accounta- bility and Control	Public Participation in Decision- Making Processes	Profes- sional Autonomy	Safety and Reliability	Equity	Political Efficacy	Public Trust and Confidence
Centralize Hierarchical Relationships Within the Executive Branch	Theory discredited; evidence not supportive	Theory discredited; evidence not supportive	Unknown	Potentially increased for President	Potentially decreased	Potentially decreased	Unknown	Unknown	Popular with President; resisted by other actors	Unknown
Incorporate an Independent Organization Into an Executive Branch Department	Unknown	Unknown	Unknown	Potentially increased for President	Potentially decreased	Potentially decreased	Unknown	Unknown	Realized by committees and affected interest groups	Unknown
Create an Independent Agency or Commission	Unknown	Unknown	Unknown	Potentially decreased for President	Potentially increased	Potentially increased	Unknown	Unknown	Resisted by President	Unknown
Create a Government Corporation or Enterprise	Unknown	Relatively strong evidence in the case of "business- like" operations	Relatively strong evidence in the case of "business-like" operations	Depends upon the enabling legislation	Unknown	Potentially increased	Unknown	Unknown	Generally popular option	Unknown
Privatize Various Operational Components Through Contracting	Evidence mixed	Theory and evidence strong – but requires competition and well-specified contracts	Theory and evidence strong – but requires competition and well- specified contracts	Requires increased monitoring capacity in public organizations	Unknown	Unknown	May depend on oversight and monitoring capacity of public organizations	Unknown	Generally popular option	Unknown
Pursue Strategies Not Specifically Tied to Organizational Structure	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Generally elicits less resistance than structural strategies	Unknown

TABLE 2
REORGANIZATION STRATEGIES IN THEORY AND PRACTICE

	Economy (cost savings)	Efficiency	Effectiveness (achieves organizational goals)	Political Accounta- bility and Control	Public Participation in Decision- Making Processes	Profes- sional Autonomy	Safety and Reliability	Equity	Political Efficacy	Public Trust and Confidence
Centralize Hierarchical Relationships Within the Executive Branch	Theory discredited; evidence not supportive	Theory discredited; evidence not supportive	Unknown	Potentially increased for President	Potentially decreased	Potentially decreased	Unknown	Unknown	Popular with President; resisted by other actors	Unknown
Incorporate an Independent Organization Into an Executive Branch Department	Unknown	Unknown	Unknown	Potentially increased for President	Potentially decreased	Potentially decreased	Unknown	Unknown	Resisted by committees and affected interest groups	Unknown
Create an Independent Agency or Commission	Unknown	Unknown	Unknown	Potentially decreased for President	Potentially increased	Potentially increased	Unknown	Unknown	Resisted by President	Unknown
Create a Government Corporation or Enterprise	Unknown	Relatively strong evidence in the case of "business- like" operations	Relatively strong evidence in the case of "business-like" operations	Depends upon the enabling legislation	Unknown	Potentially increased	Unknown	Unknown	Generally popular option	Unknown
Privatize Various Operational Components Through Contracting	Evidence mixed	Theory and evidence strong – but requires competition and well-specified contracts	Theory and evidence strong – but requires competition and well- specified contracts	Requires increased monitoring capacity in public organizations	Unknown	Unknown	May depend on oversight and monitoring capacity of public organizations	Unknown	Generally popular option	Unknown
Pursue Strategies Not Specifically Tied to Organizational Structure	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Generally elicits less resistance than structural strategies	Unknown

process to be individually conclusive, my critique focuses on the qualitative test-by-test analysis since this effort generated more information regarding AM-FM's argumentation. In addition, I agree with the Panel's assertion that a quantitative, numerical approach is inappropriate for analyzing "the complex factors intrinsic to this type of study" (VIII-14). In the following pages, I walk through AM-FM's test-by-test evaluation of the five alternatives, comparing the Panel's analysis to what is known in the academic literature regarding organizational structures and public-sector reorganization, occasionally expanding AM-FM's analysis in order to include organizational alternatives which the Panel excluded from its final list.

As aids to the reader in sorting the strengths and weaknesses of the various alternatives, I have reprinted two tables. The first table served as the Panel's internal survey instrument for its quantitative matrix analysis (VIII-16). The second table, from the concluding section of my literature review (Thomas 1992:53), summarizes some of the principle findings regarding public-sector reorganization. Though AM-FM and I developed different lists of alternatives and criteria, the concepts underlying our respective lists are similar in many respects.³⁵

MISSION ORIENTATION

"Mission orientation" is an important organizational test for the Panel because it reflects on the organization's ability to pursue its overriding objective. AM-FM asserts that "doubts remain as to OCRWM's ability to operate decisively and to exert its programmatic integrity within a larger agency which has disparate responsibilities and priorities" (VIII-2). In other words, if the chosen alternative "is part of a larger organization with multiple missions, it is conceivable that waste management may not receive the top-level attention it needs, or that its program requirements may on occasion be subordinated to other agency objectives" (V-2). As previously noted, this is probably a fair assumption for any sub-cabinet alternative, including OCRWM. Some sub-cabinet offices, however, have been known to operate independently within a larger agency (Thomas 1992:31-32), and the report itself notes the existence of such exceptions (V-2).

The report also argues OCRWM's field offices detract from single-mission orientation since each has multiple missions. Moreover, "This deficiency is aggravated by OCRWM's lack of direct authority with regard to waste management per-

sonnel within the field organization" (VIII-2). While such assertions are also consistent with the academic literature, it must be remembered these "deficiencies" are specific to OCRWM and not to a generic sub-cabinet alternative. OCRWM, however, is the only sub-cabinet alternative now under consideration.

In general, AM-FM is probably on safe grounds asserting that IFC and CWM would fair best among the five finalists in terms of mission orientation (VIII-2). Private corporations are typically short-run profit-seekers, rather than long-run safety-seekers, and thus either ANCORP or BIDCORP may run into "conflict among its missions of safe, prompt, profitable and cost-effective management" (VIII-2). For IFC and CWM, mission orientation can be written directly into their enabling legislation, and organizational independence would probably provide an environment conducive to pursuing the overriding objective. However, some political scientists have argued independent commissions fear they will become powerless because of their organizational autonomy, and thus seek alliances with interest groups to shore up their standing in Congress and thus guarantee continued appropriations (Bernstein 1955; Rourke 1969). If independent commissions are indeed more likely to be "captured" by particular interest groups, IFC's mission orientation could be threatened. For somewhat similar reasons, CWM might be vulnerable to "capture" by the nuclear utility industry because of the strong representation of the industry on CWM's corporate board.

CREDIBILITY

As the report notes, credibility is "a major difficulty for OCRWM" (VIII-3) — perhaps even a greater problem today than it was in 1984. AM-FM appears to assume that any of the other three alternatives will fair better on this test in the short run because they will be new organizations untainted by past performance. Long-run success, however, would be "very heavily dependent" on how well they perform (VIII-3). Yet, little is known about the links between organizational structure and public or stakeholder perceptions of credibility, trust, and confidence (Thomas 1991). Though reorganization is often perceived as a panacea for relieving such organizational problems, there is some reason to believe the very act of reorganizing may undermine trust among certain stakeholders (Thomas 1992:23-24,50). Thus, while OCRWM may fair poorly on this test, there is little evidence AM-FM's alternatives

(or any alternatives for that matter) will fair any better in either the short or the long run. Credibility problems may simply be inherent in the characteristics of the program rather than the organizational structure within which the program is housed.

AM-FM also assumes its four alternatives to OCRWM will be more credible because major stakeholders will play important advisory roles, either as IFC commissioners and advisory group members, or as corporate board members. In this regard, AM-FM seems to suggest IFC may also fair better than the corporate alternatives because utility and financial interests will not be as strongly represented (VIII-3). While this line of argument is intuitively appealing, and probably consistent with a long stream of academic literature which argues organizations can use their boards to coopt potentially antagonist sectors of their environment (Scott 1987:187-89), there is no a priori reason to assume advisory boards could not also be legally attached to OCRWM or to any other sub-cabinet or cabinet-level alternative. Indeed, in a separate section of the report, AM-FM later recommends advisory boards or councils for *any* chosen alternative (Chapter X).

On another angle, however, AM-FM suggests private corporations may fair better in terms of credibility than the public alternatives. "To the degree that the public and important interest groups perceive that NRC will be better able to regulate a corporation than it would a government agency such as OCRWM, the overall credibility of waste management would improve" (VIII-4). In this vein, the report claims there is "considerable reason" to believe the NRC would be more effective regulating a private corporation than a public agency (VII-19). Though unsubstantiated in the report, both claims are consistent with the literatures on regulatory compliance (Thomas 1992:32-33) and public trust (Thomas 1991). Public agencies can indeed be more difficult to regulate than private organizations if lines of authority are unclear. This problem could be ameliorated, however, if legislation clearly specifies regulatory relationships between public agencies.

Finally, the report overlooks some factors related to credibility. For example, academics have hypothesized that private corporations are more credible or trustworthy simply because government is distrusted in the United States (Thomas 1992:38). The report also does not evaluate the alternatives in light of various factors the Panel previously deemed important for maintaining credibility, such as procedural fairness, equity, and stability and continuity. Though AM-FM never pursued fairness and

equity, it argued that credibility is particularly dependent upon stability and continuity (V-III; XII-1), and thus should have interwoven its test-by-test evaluations in order to check for consistency. Though commissions might be more credible than corporate boards in terms of representing various stakeholders, they may not (as will be seen below) rank high in terms of stability and continuity.

STABILITY AND CONTINUITY

In the report's original presentation of this test, stability and continuity were broadly construed (V-3), but in evaluating the four alternatives the Panel focuses almost solely on the negative effects of "untoward political influence," which it fears may lead to "drastic change in waste management policies or activities" (VIII-4). Political instability appears primarily to be a short-run concern, however, since the report later acknowledges that "a Federal Government agency is likely to have the longest stable institutional life of any organization in a position to monitor and protect repositories over millennia" (IX-1). Following this short-run versus long-run logic, one might assume the Panel would favor OCRWM and IFC on this test, since the program's overriding mission is "safe long-term disposal" (III-2). Yet, the report argues that instability and discontinuity is "a major problem for OCRWM or any federal entity whose senior staff and their superiors serve at the pleasure of the President — particularly when OCRWM's mission will span a number of Administrations" (VIII-4). Though this tension is never addressed, the Panel does argue, probably correctly (Thomas 1992:33-34), that IFC would be relatively insulated from political influence compared to OCRWM because IFC's commissioners would be appointed to staggered terms (VIII-4).

In focusing on politics as a source of short-run instability and discontinuity, the Panel also overlooks instabilities produced through the fluctuations of private markets and national economies. Once again, the bias of the Panel towards market-based alternatives is readily apparent. Though the report earlier noted that a primary characteristic of any radioactive waste management organization is that "it must operate in a business climate which is largely dependent upon economic trends and emerging energy policies" (IV-2), the Panel does not follow through in evaluating the alternatives. In overlooking the effects of markets and economies, a more subtle point is also missed: presidential policies have a strong effect on waste volume and

market trends. Thus, even allowing for short-run political instabilities, it is possible that a centralized public organization, which is linked through the President to a coordinated national policy, might actually be more stable than a market-based alternative whose investors may be no less transitory and demanding than presidential administrations.

PROGRAMMATIC AUTHORITY

AM-FM's evaluation of the alternatives is also decidedly one-sided and incomplete in terms of programmatic authority. In the case of OCRWM, for example, the report focuses almost solely on congressional committees as "strong constraints" while only noting in passing the existence of "other constraints" (VIII-5). Presumably such constraints include presidential administrations and interest groups, as well as the Department of Energy itself. Indeed, the Panel appears to recognize the affects of the latter in noting that "IFC should have a decidedly greater measure of programmatic authority than OCRWM because it would stand outside of any larger executive agency" (VIII-5). This comparison is very skimpy, however, since there is no indication IFC would be subject to less congressional oversight than OCRWM. In fact, Seidman and Gilmour (1986:280) argue that organizational independence may actually increase the susceptibility of a program to both congressional and industry influence. Moreover, IFC would be constrained by its three advisory groups, one of which represents major stakeholders, since IFC would threaten its credibility if it ignored these groups.

In comparing IFC to the mixed-ownership corporate model, the report argues: "The CWM would also have virtually complete programmatic authority" (VIII-6). This statement is incongruous, however, since the report never demonstrated "virtually complete" programmatic authority in the case of IFC. The Panel also attributes "virtually complete" programmatic authority to its private corporate alternatives, limited only by government regulations and "the possibility of Congressional assertion of influence" (VIII-6). While the latter appears to be a fair assessment of the private models, it is difficult to understand AM-FM's use of the term "virtually complete programmatic authority" if it applies equally to IFC, CWM, and the private corporate models.

Moreover, the report further argues CWM "would be subject to relatively few

restrictions (e.g., the possibility of Congressional override of increases in the waste fee), but would essentially be able to direct the program as it sees fit" (VIII-6). Such a statement is based on the implicit assumption that Congress would be willing to legislate autonomy for a program it has long sought to oversee. Public corporations, however, are not created according to a standard model (Seidman and Gilmour 1986:283). In other words, if Congress wishes to create a public corporation, it need not bestow "virtually complete" programmatic authority; and, similarly, if Congress wishes to bestow programmatic authority, it need not create a public corporation.

The report also fails to follow through in discussing funding authority. Though included in the original description of this test, funding authority is barely broached in evaluating the alternatives, which is surprising since revenue flexibility is an important attribute of both public and private corporations. AM-FM thus missed an important opportunity to demonstrate the utility of the corporate form.

ACCESSIBILITY

The report focuses primarily on formal, rather than informal, means for accessibility. Thus, even though DOE and its predecessors have long had a reputation for being relatively inaccessible, OCRWM and IFC are given high marks because AM-FM emphasizes accessibility in terms of public laws and formal roles rather than organizational culture. The report argues that "all federal agencies" share a "high degree of accessibility" because they are subject to congressional oversight and several statutes prompting disclosure of information to the public (VIII-6). In addition, most government corporations are also subject to disclosure statutes, including freedom of information, conflict of interest, and sunshine in government (NAPA 1981). The report neglects, however, to discuss the important role played by organizational culture in facilitating such disclosures and opening the organization to various stakeholders.

In comparing the alternatives on this test, AM-FM focuses primarily on top management, arguing IFC outperforms OCRWM on accessibility because its five commissioners would provide multiple channels of access for various stakeholders. This assertion is consistent with the academic literature, which argues that single administrators are more likely to be under the control of the President, and are thus less likely to provide access to multiple interests (Thomas 1992:26). On the other

hand, the commission form may be inherently vulnerable to “capture” by specific stakeholders (Bernstein 1955). It is thus possible a multi-headed, independent commission, such as IFC, could become overly accessible to the utility industry, at the expense of other stakeholders. Since the mixed corporation and private corporations have specified board representations, it would be easier to predict in advance the relative influence of the various stakeholders.

RESPONSIVENESS

AM-FM evaluates responsiveness in much the same way as accessibility — comparing the alternatives in terms of formal obligations and top management. In doing so, however, it focuses primarily on responsiveness to Congress and various regulators, even though the report originally defined this test in terms of responsiveness to the comments and concerns of “the public and interested groups” (V-4). Since responsiveness to Congress is more closely related to political accountability, I will discuss this aspect of responsiveness in a subsequent section of this paper.

In regards to the report’s original definition of responsiveness, AM-FM’s evaluation of the alternatives is quite similar to its evaluation under accessibility, though IFC’s informal advisory groups are also drawn in. Presumably, the advisory groups would enhance IFC’s accessibility as well as its responsiveness, since in both cases the organization’s credibility would be at stake if it ignored these groups. CWM (the mixed-ownership corporation) appears particularly attractive on this test because AM-FM designed its board of directors to be responsive to a variety of stakeholders. Responsiveness to diverse stakeholders, however, is not an attribute of mixed-corporations *per se*.

AM-FM is also probably correct in asserting that the corporate alternatives might be more responsive to regulators than the executive branch alternatives. Though AM-FM views political accountability as a negative attribute for the program because of the potential for political interference in day-to-day operations, it views regulatory responsiveness as a positive attribute. As the report notes: “Protection of public health and safety is...a preeminent concern of government” (IX-4). In this vein, the report argues mixed and private corporations are likely to be more responsive to federal regulatory agencies than either OCRWM or IFC (IX-2,4). This is a subtle point, with some empirical support in the literature (Thomas 1992:32-33); but,

since evidence is mixed, regulatory responsiveness should not be weighted heavily in evaluating the alternatives. Though the Panel later argues that regulatory responsiveness is one of the six major advantages of its preferred alternative, a wholly-owned (rather than mixed-ownership) public corporation (XI-8), this conclusion is inconsistent with the challenges confronted by the EPA in its attempts to regulate the Tennessee Valley Authority (TVA) — a wholly-owned public corporation (Wilson and Rachal 1977).

INTERNAL FLEXIBILITY

AM-FM correctly asserts that OCRWM faces “Serious impediments” to internal flexibility in the form of civil service constraints, DOE conflict-of-interest rules, and the need for political clearance on appointed positions (VIII-8). Such impediments have often been used to justify the creation of public corporations when internal flexibility is desired (Thomas 1992:38-39). Congress need not create public corporations to give programs such flexibility, however, since it can simply legislate exemptions to any of these impediments, as the report itself notes in evaluating the independent commission alternative (VIII-8). Moreover, it is important to remember OCRWM plays the role of a strawman in this report, since a generic sub-cabinet alternative could also be given such exemptions. In a separate section of the report, the Panel appears to recognize that personnel flexibility and staff incentives are also available for an OCRWM-like alternative (X-4). This is not pursued in the main argument of the report, however, and thus leads the reader to believe that corporate-like alternatives necessarily perform much better in terms of internal flexibility. Moreover, most public corporations are subject to conflict-of-interest rules (NAPA 1981). In addition, unless exemptions are made, the employees of public corporations are considered to be employees of the U.S. government and are subject to applicable regulations and civil service rules. Thus, the public and semi-public alternatives are not as distinguishable on this test as implied by the report.

Regardless, the private alternatives would almost certainly have greater internal flexibility than either OCRWM, IFC, or CWM because of their general autonomy from government control. For example, private corporations would not be bound by the federal government’s procurement procedures, which some have argued impede government agencies from hiring the most qualified contractors by limiting

the discretion of public officials (Kelman 1990).³⁶

POLITICAL ACCOUNTABILITY

AM-FM correctly asserts that IFC would be less politically accountable than OCRWM because of the term appointments of its commissioners (VIII-7,8). Not only are commissioners' jobs protected, commissioners are less likely to be aligned with the President as a group than would be a single administrator. IFC would also be organizationally independent of a cabinet department, and thus would not report to a cabinet secretary — an important fact to which the report's evaluation barely alludes (VIII-8).

The report also claims IFC would be less politically accountable than OCRWM because of the "structure of the Waste Fund" (VIII-8; see also VIII-7). This assertion is inexplicable, however, since the report previously stated that "IFC would have the same budgetary independence as OCRWM" (VII-6). Independence from the appropriations process is an important issue for assessing political accountability, since budgetary control is an important means by which elected officials hold public organizations accountable for their actions. Unfortunately, the report inconsistently develops this point.

The corporate alternatives would indeed be less politically accountable than either OCRWM or IFC, both because of the structure of their boards (which tend to diffuse lines of responsibility and accountability) and because of their independence from the appropriations process. (Though most public corporations raise their revenues independently, some depend on Congressional appropriations for a portion of their operating budget.) Again, however, Congress would have to be willing to forego some of its control over the program.

IMMUNITY FROM POLITICAL INTERFERENCE

The Panel's ordinal ranking of the alternatives for this test — private corporations high, OCRWM low — appear to be logically consistent with its rankings for related tests, such as internal flexibility, programmatic authority, and political accountability. In other words, as immunity from political interference increases, stability and continuity, programmatic authority, and internal flexibility also tend to increase, while political accountability decreases. Though logically consistent, these

trade-offs nevertheless represent fundamental values in a democracy, and thus the report should have been more explicit in calling out the trade-offs rather than simply evaluating the alternatives on a test-by-test basis. Pursuing such an approach forces the analyst to consider the normative aspects of democratic government, rather than simply asserting or implying that "political interference" is an undesirable attribute.³⁷

This approach would also have simplified the Panel's exposition by reducing several tests to a debate over political control versus organizational independence. For example, a major theme of AM-FM's report is the perceived need to manage environmental turbulence (i.e., the potentially disruptive effects which various external actors and events may have on the organization). If environmental turbulence indeed impedes mission orientation, then limiting political accountability and increasing organizational independence may be justified. Though "political interference" is just one source of turbulence in an organization's environment, AM-FM gives it the greatest attention because of the Panel's belief that political appointments and budgetary politics are the primary sources of instability and discontinuity (VIII-4), which in turn threaten both technical excellence and credibility (V-III). Thus, AM-FM appears to be building a strong case for organizational independence (as well as programmatic and funding autonomy), but not necessarily for a particular organizational form.

FINANCIAL ACCOUNTABILITY

The Panel's comparison of IFC and OCRWM on this test is inconsistent with previous claims in the report. As discussed above under political accountability, the report does not clearly establish whether IFC would have greater budgetary autonomy than OCRWM. This section of the report is similarly confusing, since the Panel asserts that NWPA's provisions "would apply as strongly to IFC" as they do to OCRWM, which "must obtain triennial authorization from Congress and annual appropriations in order to spend monies in the [Nuclear Waste] Fund" (VIII-10). If we accept this as the definitive statement, then the two alternatives are roughly equivalent on this test (though IFC might be more accountable since it would also have a cost-effectiveness advisory board). OCRWM and IFC would thus also be roughly equivalent in terms of political accountability, inasmuch as financial accountability is a means for political accountability and control.

AM-FM is correct in arguing that the corporations would generally be accountable to their ratepayers (i.e., the nuclear utilities) because of ratepayer representation on the corporate boards (VIII-10). In addition the corporations would also be accountable to lenders and stockholders (Thomas 1992:41).

ABILITY TO STIMULATE COST-EFFECTIVENESS

On the issue of cost-effectiveness, AM-FM once again sets up OCRWM as a strawman, and again its evaluation of the alternatives is both inconsistent and incomplete. As previously discussed, the Panel appears to be concerned with production efficiency (i.e., low-cost production given a specified output), rather than simply holding down costs. In this vein, its critique of OCRWM begins with the assertion that cost-effectiveness (or production efficiency) "is difficult to achieve in a monopoly business, and especially one which, by the nature of its particular mission [i.e., safe long-term disposal], cannot look forward to any growth or diversity expectations" (VIII-11). The report fails, however, to mention that these assumptions apply equally to IFC and CWM.³⁸ Nevertheless, the report then suggests, with almost no empirical or theoretical support, that "CWM would be able to achieve cost-effectiveness" (VIII-11). These statements are fundamentally incompatible. The former statement, regarding the inefficiencies of monopolies, is well-supported by microeconomic theory, though the report itself does not draw upon this theory. The latter statement, regarding the mixed corporation's cost-effectiveness, is certainly open to debate.

The report asserts that "the representation of utilities on the CWM Board, the corporation's goals, the requirement to utilize an independent oversight contractor, and the flexibility in personnel hiring/firing all suggest that the CWM would be able to achieve cost-effectiveness" (VIII-11). Yet, some of these features could be included in a non-corporate alternative. In addition, the corporation's goals are basically identical to OCRWM's (with the exception of seeking profits). Moreover, utility representation on the corporate board (whether mixed or private) may induce changes in mission, which in turn could threaten mission orientation and the program's overriding goal. As the report previously argued, cost-effectiveness can not be at the expense of either technical excellence (V-7) or safety (III-11). Efficiency thus implies low-cost performance given the overriding mission of safe long-

term disposal. Utility representatives on the corporate board, however, may have an incentive to dispose of the waste relatively quickly, particularly given declining on-site storage capacities at nuclear power plants. Utility representatives may also push for cost savings at the expense of technical excellence and long-run safety, since the program is financed through fees charged to these utilities. AM-FM argues differently, however, in noting that the utility industry's "long-term interest in allaying public concerns will stimulate strong concern within the corporation for assuring health and safety" (IX-4). Though "corporations generally have less credibility" in this area, the Panel presumes the credibility problem "would dissipate through a combination of effective regulatory oversight and through a history of good performance by ANCORP and BIDCORP" (IX-4).

The report's critique of OCRWM continues by noting that (VIII-11):

...there are many stakeholders to whom the organization has to be accessible and/or responsive, and there is the potential for substantial technical changes as site characterization proceeds and as NRC and EPA procedure evolves. Consequently, maintaining a coherent project schedule, obviously a key to cost-effectiveness, cannot be assured, even neglecting the possibility of the kind of delays brought on by legal challenge.

Again, the report attributes these characteristics only to OCRWM, even though IFC and CWM would confront them as well.

In short, the report does not treat its alternatives even-handedly. AM-FM's comparison of the alternatives in terms of cost-effectiveness is particularly inconsistent. Though public corporations might indeed be more efficient than traditional government organizations in certain situations, AM-FM's discussion is not careful in this regard, and thus could be dangerously misleading given the nature of the organization's task. Up to this point in the report, AM-FM's argument has largely been directed towards making a general case for political and organizational independence. With this test, the report takes a much stronger stand on a particular organizational form; and it is on this point that I believe the Panel's argument is weakest. Cost-effectiveness has thus far been a subsidiary concern in the report. Yet, as will be seen, AM-FM ultimately recommends a public corporation over other forms of

organizational independence, and appears to do so largely based upon this organizational test.

TECHNICAL EXCELLENCE

The Panel is almost certainly correct in asserting that OCRWM will face difficulties in recruiting talented individuals because of various personnel constraints.³⁹ Recent experience in Superfund, for example, demonstrates how far technical competence can decline in executive branch organizations (Kettl 1991). Given such constraints, it is possible the Panel might actually be overestimating the ability of OCRWM, and IFC, to attract "good talent in the relevant fields" (VIII-12). Indeed, "technical competence," rather than technical excellence, may be the best to which OCRWM and IFC could strive (VIII-12), even if their permanent staffs are supplemented by technical advisory boards (VIII-12; VII-7).

Since the corporate models have greater internal flexibility, they would indeed find it easier to attract the more qualified employees. But again, this is not due to the corporate form. Government organizations can be given personnel flexibility as well as adequate funding if Congress so chooses. Moreover, alternative government organizations, such as research institutes, may provide a more conducive environment for achieving technical excellence than corporations because of their reliance on professional standards; and because, as the report notes, corporations may be subject to pressures which compromise technical excellence (VIII-12). Utilities, for example, which are strongly represented on the corporate boards, might press for rapid and inexpensive disposal rather than technical excellence. The Panel, however, appears to brush aside these concerns in the cases of ANCORP and BIDCORP, arguing that "regulatory oversight is apt to be more effective for a private corporation" than for a public agency (VIII-12). Though evidence exists to support this contention (Thomas 1992:32-33), public agencies are nevertheless subject to more congressional oversight than are private corporations, the federal government would own almost a third of the mixed corporation's stock, and legislation can certainly be specified which clarifies lines of authority and thus facilitates intragovernmental regulation.

EASE OF TRANSITION

The report correctly notes that any change requiring new legislation will be difficult, and thus it would "seem much simpler to try, within the latitude permitted by NWPA, to graft improvements onto the present structure, e.g., those described in Chapter X" (VIII-13).⁴⁰ The report, however, has so far given little indication the Panel was interested in such marginal changes to OCRWM. Though apparently set on advocating major changes requiring new legislation, the Panel does not discuss the political ramifications such recommendations would entail.⁴¹ Indeed, the report generally overlooks the political implications of recommending changes which would alter the program's relationship to congressional committees, interest groups, and the President.

Regarding committees, a large body of literature in political science argues congressmen are unwilling to give up their turf (Thomas 1992:21), particularly when the activities of their committees directly affects re-election opportunities (Fenno 1973). Though AM-FM regards the complex lines of committee accountability as a liability for OCRWM (IV-6) because the committees "require extensive servicing and have the potential to cause schedule delays and increase costs" (X-5), and thus "recommends that the Congress attempt to simplify its oversight process" (X-5), the report overlooks the political feasibility of such proposals.

In addition to the committees, the President and a variety of stakeholders are also likely to fight any changes. Presidential control is likely decreased if the program is removed from a cabinet department. Since the President must sign the authorizing legislation, he would similarly be forfeiting his turf. The literature also suggests stakeholders benefitting from the present structure will fight any change (Thomas 1992:21,31). As with the congressional committees, these important political considerations are completely overlooked in the report's evaluation of the alternatives regarding ease of transition.

In fact, in evaluating the alternatives on this test, the Panel focuses primarily on one assumption: if change is desired, it should be made sooner rather than later, "before the present organization gets further solidified" (VIII-13). Eight years have passed, however, since AM-FM made this assertion. Since agreements and understandings with various constituents have already been made, and technical decisions are moving forward, the import of this assertion has waned. Political considerations

regarding ease of transition have accordingly become even more important. The report also suggests transition could be eased if the alternative (in this case IFC) involved “merely” the movement of OCRWM staff to a new organization (VIII-13). Some academics have argued, however, that changes in staff and tasks are at least as important as changes in structure in bringing about any real change in organizational operations (Thomas 1992:28).

In sum, the Panel focuses on relatively unimportant factors regarding ease of transition, while overlooking significant political constraints. The report’s acknowledgement of “intense political concerns surrounding siting” (VIII-14) does not constitute adequate consideration of these issues. Moreover, if AM-FM had explored political considerations further, it might have taken to heart its observation that “NWPA represents a delicate political compromise; a better political balance may not be achievable” (IX-1).

WEIGHTING THE TESTS

The report provides various hints into the Panel’s thinking regarding the relative weights accorded each organizational test. This is most clear in the Panel’s attempt at quantitative evaluation, when it voted to weight the five “most important” tests in the following order: stability, credibility, flexibility, immunity from political interference, and ability to stimulate cost-effectiveness (VIII-15). Though the report states the Panel did not select its preferred alternative based upon the quantitative comparison, it is fair to assume the ordinal ranking reflects the Panel’s preferences, particularly since the ranking is reiterated later in the report (XI-8).⁴²

Unfortunately, the Panel does not justify this ranking, particularly since the ranking appears to be inconsistent with the emphases accorded to various tests earlier in the report. For example, why is mission orientation not considered to be one of the five most important tests? This omission is difficult to understand given that AM-FM’s argument begins with the premise that the program has an overriding mission (III-2), and then finds that the four models differ in terms of mission orientation. Technical excellence is also excluded, even though it is a necessary condition for achieving the program’s mission (V-6). Moreover, cost-effectiveness, which appeared to be a subsidiary concern earlier in the report, is now one of the five “most important” organizational tests, even though it may be incompatible with safe long-

term disposal. Combined with the Panel's inconsistent evaluations of the alternatives, these questions raise serious doubts about the logical necessity of the Panel's ultimate recommendation.

Earlier, I argued that AM-FM's thirteen organizational tests are based on the underlying assumption that technical objectivity, rather than political concerns, should motivate decisions. This assumption also appears to undergird the Panel's ranking of the five "most important" tests, which may explain why the Panel chose not to include technical excellence as one of the top five. Credibility, for example, is enhanced by technical objectivity and stability; stability, in turn, is promoted primarily by detaching the program from political control and electoral outcomes; internal flexibility depends upon reducing political controls; immunity from political interference means day-to-day decisions do not depend upon political considerations; and, cost-effectiveness is assumed to be achievable only in the private or semi-private sector, where the program's "borrowings and spending would be minimally subject to political whims and would be quite reliable" (IX-3).

Unfortunately, while pushing for political independence, AM-FM glosses over important political considerations. For example, the Panel did not include political relationships within the ease-of-transition test, and did not consider either this test or political accountability to be one of the five most important tests. Students of politics would likely disagree with both of these assessments. Not only do political considerations complicate any reorganization effort, especially when it involves a program with such a high profile, but political accountability has important normative implications, particularly with regard to whether a particular policy should be a responsibility of the public sector. The following quote captures both the Panel's brief attention to the normative debate, as well as its disdain for political accountability and control (IX-2):

Perhaps the major advantage [of the IFC over other alternatives] turns on individual judgments about whether high-level radioactive waste management is inherently a governmental function. If so, an IFC appears the best way to perform it and yet minimize the disadvantages, largely arising from political responsiveness, that seem to mark public organizations.

The question of whether the program is “inherently a governmental function,” however, is never addressed in the report, despite the fact that several alternatives to which AM-FM gives considerable attention are either in, or strongly oriented towards, the private sector.

DERIVING A RECOMMENDATION

In light of its preferences, the Panel favored the mixed public/private alternative (CWM) by majority votes at two separate meetings (IX-5). In an attempt to reach a consensus, the Panel then used this alternative as a basis for discussion, reshaping it “in a manner that incorporated the best features of the other three alternatives” (IX-6). This effort led to AM-FM’s preferred alternative, known as FEDCORP (the Federal Corporation for Waste Management), a government-owned corporation “structured to operate more like a private enterprise than a government agency” (IX-6).

Perhaps the most important difference between FEDCORP and CWM is that FEDCORP would be wholly-owned by the federal government (XI-3). This single attribute has a number of ramifications. Since there would be no equity apportionment, all seven board members would be appointed by the President and confirmed by the Senate, rather than just five of sixteen in the case of CWM. In addition, the President, rather than the board members, would appoint the chairman. In terms of the organizational tests, the report argues these features imply “a substantial measure of political oversight” (XI-1). Political interference would be avoided, however, since the seven-year staggered terms “would provide continuity and insulation from excessive political influence” (XI-3). In these respects, FEDCORP’s board would be much like the commission of an independent federal commission (IFC), though the report itself does not draw such comparisons. Would FEDCORP’s board be more accessible than IFC’s? More responsive? More credible? More likely to promote cost-effectiveness? Unfortunately, such questions are not addressed.

Neither does the report clearly draw comparisons between FEDCORP and CWM. Presumably, FEDCORP’s board would be more credible than CWM’s among a broader array of stakeholder groups because it would not necessarily be dominated by utility representatives. Yet, this would mean FEDCORP would also be less cost-effective than CWM given the Panel’s earlier assertion about the role of utility repre-

sensation on the board. Thus, the Panel appears to be trading some measure of cost-effectiveness for credibility and political accountability, since FEDCORP's board is politically appointed. The latter would be a surprising twist given AM-FM's previously stated preferences.⁴³

The report, however, does not acknowledge any such trade-off. Despite having changed both the appointment process and the representation of stakeholders on the board, AM-FM argues FEDCORP's board "would function as in the private sector" (XI-3), since it would "essentially comprise a managerial body functioning like the Board of Directors of a private corporation" (XI-1). In addition, FEDCORP's board "would essentially be able to direct the program with "free-enterprise efficiency" because it would have "virtually complete programmatic authority" (XI-6). Since all seven board members would be politically appointed, the Panel either is unaware of the degree to which candidates for the board would be politically screened during the appointment process, or previously overplayed the disadvantages of political oversight. Regardless, the operations of government corporations are "profoundly political" because they have direct impacts on large sectors of the public (Walsh 1978:332). Therefore, the President and Congress can always find ways to influence the organization's operations to protect their political interests, particularly on issues which are both salient and conspicuous to the public (Tierney 1984:87).

FEDCORP also differs from CWM in that the Panel explicitly limits the size of FEDCORP's staff, recommending it be "certainly no greater in number than the present OCRWM" (XI-1). Thus, as with the current structure, private contractors would be used to carry out various functions related to site selection, repository construction, waste transportation and emplacement. Yet, the report provides neither justifications for limiting staff size nor for using contractors. At the time AM-FM was convened, these strategies were politically popular means for reducing the size of the federal workforce and thus "big government." Regardless of the Panel's ideology, however, staff limitations need to be justified in the context of the radioactive waste management program. Recent research — unavailable to the Panel — suggests Congressionally mandated caps on staff size and administrative overhead may impede the ability of a public organization to monitor contractors performing highly technical tasks, and may even force the organization to rely on contractors to carry

out inherently governmental functions, such as drafting testimony and preparing job descriptions (Kettl 1991; GAO 1991).

Moreover, it is unclear why AM-FM recommends limiting the size of FEDCORP's staff when the organization would be exempt from civil service requirements, and thus "would be able to offer salaries and benefits commensurate with the responsibilities of its personnel" (XI-4). AM-FM provides FEDCORP with the flexibility to hire the most competent individuals, but then constrains staff size. These attributes are logically incongruous: if the organization can hire the best, why force it to hire contractors and thus increase monitoring costs? Though the Panel assumes contracting will continue regardless of the alternative (III-3; V-7), the report does not address the reasons for, or the necessity of, contracting. One of the standard justifications for using contractors is increased efficiency. Efficiency in contracting, however, necessarily depends upon the existence of competition among contractors, the ability to specify contracts clearly, and the capacity to monitor contractor performance.⁴⁴ AM-FM, however, recommends capping the size of the staff regardless of whether it is sufficiently large to monitor contractors. This is a dangerous proposition given the responsibilities of the program and the likelihood that private contractors may be more concerned about profits than safe long-term disposal. Despite the report's contention, FEDCORP would not have "a great deal of internal flexibility" (XI-8).

In addition to the structure of its board and limitations on staff size, FEDCORP would also differ from CWM in having an Advisory Siting Council which would make siting recommendations to the board. Since this board-appointed body would be "composed of representatives of all legitimate stakeholders" (XI-3), it would presumably substitute for CWM's diverse board representation in terms of accessibility and responsiveness (XI-6), and "would provide a strong measure of credibility among states, tribes, and environmental groups, as well as utilities and ratepayers" (XI-6). The report, however, does not explicitly make such comparisons.

Finally, "FEDCORP would have chartered authority to contract for revenue-oriented activities other than nuclear waste disposal so long as these activities would relate to and not hinder the main thrust of the waste management program" (XI-5). By comparison, CWM's revenues would be "completely derived from the entities producing the radioactive waste" (VII-10). Reuse of high-level radioactive waste

“could dampen the need for increasing nuclear utility generating fees” (XI-5), and thus FEDCORP would have greater financial autonomy than CWM.

CONCLUSION

This analysis has generally focused on the weaknesses rather than the strengths of AM-FM's report. I have done so because the weaknesses are considerable, and thus undermine the force of the Panel's recommendations. Though the Panel's general methodology — identifying program characteristics and objectives, and then evaluating alternatives in light of criteria which reflect the characteristics and objectives — is appropriate; its execution was flawed in many respects. AM-FM's ultimate recommendation may be, in several senses, a “better” alternative to the current organizational structure of the radioactive waste program within the Department of Energy, but the report itself is not convincing in this regard and should not be treated as adequate documentation of the advantages and disadvantages of a public corporation over other alternatives.⁴⁵

Why, for example, should the organization be a public corporation rather than a commission, particularly given the similarities of FEDCORP to an independent commission in terms of government ownership, the appointment process, and the structure of terms? One important distinction between FEDCORP and IFC would be in terms of staff, since IFC would be subject to civil service constraints which restrict internal flexibility and inhibit the ability to achieve technical excellence. Yet, independent commissions can be exempted from civil service restrictions,⁴⁶ and wholly-owned public corporations are often required to conform to them (NAPA 1981).⁴⁷ Thus, AM-FM has drawn a distinction between its models, but not between organizational types. Another important distinction would be funding authority and financial accountability, since the “preferred alternative” calls for removal of the Nuclear Waste Fund from the federal budget, and provides FEDCORP with additional means for raising revenues. These are important considerations, but again it is unclear from the report why a corporation is necessary to achieve them. Many federal enterprises, such as the U.S. Postal Service and the Bonneville Power Authority, are unincorporated. Moreover, the report glosses over some important attributes of public corporations when comparing the alternatives. For example, government corporations typically can sue and be sued, though their liability is usually distinct from that of

their officers and directors.⁴⁸ If these attributes are important for the radioactive waste program, AM-FM has not made this argument in its report.

Since the report does not support its preferred alternative with a strong — or even a consistent — argument, it is fair to ask what factors might underlie the Panel's decision. Numerous political scientists have argued Americans harbor an underlying suspicion or distrust of government. Public corporations may thus represent a middle ground between public and private alternatives. In other words, if the government must undertake a certain function, then some might desire that the program look as much like a private organization as possible (Seidman 1952:90). Unfortunately, as Annmarie Hauck Walsh (1978:334) has argued, "The idea that government institutions will be better the more they emulate private institutions operating in a free market is rife with internal contradictions."

Some organization theorists argue that certain organizational forms are mimicked simply because they are perceived to be legitimate or to have worked well in other situations (DiMaggio and Powell 1983). Facing technological or environmental uncertainty, organization strategists may choose to mimic particular types of structures in order to bolster public trust, regardless of whether the structure is functionally efficient (Zucker 1986). Though AM-FM's entire report is couched as a functional analysis of alternatives based on numerous criteria, it is possible the members of the Panel were simply copying what they perceived to be legitimate, credible, and/or trustworthy.⁴⁹

In sum, AM-FM's report is inadequate and misleading in several significant respects. Logically, it is internally inconsistent and self-contradictory on several occasions, particularly with respect to the potential trade-offs between mission-orientation and cost-effectiveness. Methodologically, the report is confusing because it shifts approaches midstream and does not rigorously pursue a given tack. In addition, alternatives are evaluated in a lop-sided fashion; citations are non-existent; and the bibliography is narrowly construed. By academic standards, AM-FM has presented its case for a public corporation poorly. Although elements of the report might prove useful to individuals thinking about reorganizing the radioactive waste program, as a package the report is incomplete, inconsistent, and reflects an underlying bias towards a specific class of organizational alternatives.

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FOOTNOTES

¹Nuclear Waste Policy Act, Section 303 (as cited in "Managing Nuclear Waste — A Better Idea," Advisory Panel on Alternative Means of Financing and Managing Radioactive Waste Facilities, 1984, p.i).

²For example, Seidman and Gilmour (1986), a book I repeatedly cite in this paper, was originally published in 1970, and is now in its fourth edition.

³When referring to AM-FM's report, I will simply use page numbers.

⁴See my preceding paper (Thomas 1992:18-19), for a discussion of some of the theoretical links between efficiency and safety.

⁵Equity and procedural fairness are not even included in the summary table at the end of Chapter III (III-16) which lists the key objectives and those organizational factors the Panel believes facilitate their achievement.

⁶Though AM-FM itself later recommends various advisory boards, it does not recommend or suggest multiple organizations within a given phase.

⁷Though the Panel characterizes radioactive waste management as a "business," it nevertheless attributes some extraordinary characteristics to the program. For example, regardless of the chosen alternative, the program will have little control over its "business volume" (i.e., radioactive waste) because "it must operate in a business climate which is largely dependent upon economic trends and emerging energy policies" (IV-2). The organization will also have little control over its annual costs and revenues (IV-3), and will confront technical and regulatory uncertainties (IV-4,5), "a great deal of political oversight" (IV-5), and a negative public image (IV-6,7). Moreover, the organization must manage these difficulties for decades and possibly centuries, "an exceptional period of time for most business organizations, and longer than the lifetime of most of our government agencies" (IV-3).

⁸Though NWPA directed the Secretary of Energy (and thus AM-FM) to study a private corporate alternative, this mandate is arguably an insufficient explanation for the relatively large number of pages the report devotes to laudatory discussion of public and private corporate alternatives.

⁹Postal Rate Commission decisions, however, can be modified by unanimous consent of the U.S. Postal Service board of governors; the board of governors can also reject a decision, and thus force the Commission to reconsider its decision (Tierney 1981:109).

¹⁰Since the Panel ranks the tests much later in the report (VIII-15), we will turn to the rankings later in this paper.

¹¹Both of these factors are also related to an organization's ability to maintain public trust and confidence (Thomas 1991). As defined by AM-FM, stability may be at least as important as credibility in building public trust and confidence.

¹²If AM-FM is correct in assuming that political considerations are the primary source of instability for public organizations, then organizational autonomy (both programmatic and financial), may be necessary conditions for maintaining and/or producing public trust.

¹³For these reasons, programmatic authority should also be decentralized within the organization: "Efficiency and credibility would be enhanced if local officials such as those in field offices of the organization were empowered to negotiate with their local counterparts, rather than requiring all decisions and negotiations to occur at high levels within the organization" (III-5).

¹⁴To quote the report (III-6): "Lacking such financing stability, the schedule is likely to slip and incentives to cut corners will appear. This would lessen public confidence and might threaten the issuance of an operating license. Moreover, delays would probably increase the ultimate cost of the program."

¹⁵See Thomas (1992:9-12) for a fuller exposition regarding this distinction.

¹⁶Efficiency in contracting requires more than "close oversight of contractors," however, since there must also be competition among the contractors as well as the technical and legal capacity within the organization to specify expected performance clearly within each contract (Thomas 1992:44-46).

¹⁷For an alternative list of criteria, see my earlier paper (Thomas 1992).

¹⁸According to Seidman and Gilmour (1986:254): “The word *independent* means only independence from an executive department, and does not imply independence from the president or the executive branch. In popular usage the word has come to have the latter meaning, particularly when applied to the independent regulatory commissions.”

¹⁹AM-FM does not justify this assertion. In practice, presidential influence need not be less than with independent agencies. For example, wholly-owned government corporations can be independent of, or housed within, executive departments (Seidman and Gilmour 1986:256). Some academics have even argued that all government corporations should be housed within existing departments or agencies in order to maintain executive control (NAPA 1981:iv).

²⁰Technically, the report is incorrect in citing the U.S. Postal Service as an example of a government-controlled corporation. Though the Postal Service has many of the features of a public corporation, it is not in fact incorporated, and has a board of governors rather than a board of directors. In the report’s appendix, AM-FM is more careful in this regard, noting that the Postal Service has “characteristics of both a business corporation and a government agency” (C-26); but, “[f]or the purposes of the analysis, the Postal Service can best be classified as a government-controlled corporation” (C-27). This classification is somewhat arbitrary. Others have labelled the Postal Service an “unincorporated enterprise” (NAPA 1981) and an “independent multi-headed agency” (Seidman and Gilmour 1986:255,272).

²¹In making this statement, I assume the utility alternative would be a corporation because it “would probably have a Board of Directors” (VI-6), though it need not be incorporated.

²²Though AM-FM implicitly acknowledges the possibility of such an alternative when discussing the present structure, it does not follow through in the report when discussing and evaluating the sub-cabinet model.

²³Such passive sentence constructions are used throughout the report in lieu of specific statements identifying the assumptions, evidence, and logic upon which the Panel made such decisions.

²⁴See Seidman and Gilmour (1986:254-57) for a more complete typology of federal administrative agencies. Chapters 11 and 12 of their book also provide a solid legal, political, and empirical background to the various organizational types, and thus would complement AM-FM’s discussion in Chapter VI and Appendix C.

²⁵According to Seidman and Gilmour (1986:276): "The title 'institute' has been used for agencies engaged in research and training, but the name has had no significance except to provide a better academic standing."

²⁶The Panel later suggests a version of this alternative: "... a 'State Waste Authority' that could be established by a host state to carry out these functions as a prime contractor" (VIII-13).

²⁷The Panel itself ultimately recommends a rate commission, though much different than the one I suggest here. While the Panel recommends a "blue ribbon advisory commission drawn from those constituencies most concerned with avoiding an increase" in the fee charged to utilities (X-2), I would suggest a commission similar to the U.S. Postal Rate Commission, a permanent body representing a variety of stakeholders which would review the program's on-going costs and recommend fees accordingly. If long-term safety is indeed the overriding objective, then fees should not be based on stakeholders' preferences for avoiding cost increases.

²⁸In support of this decision, the report simply states: "Based on preliminary screening — which took into account the phases, objectives, characteristics and tests of the waste management program — the Panel grouped the 10 organizational alternatives...into four categories for a more detailed evaluation" (VII-1). Even though several chapters had been devoted to delineating those characteristics, objectives, and tests which AM-FM perceived to be important, these factors were not explicitly called out to justify the Panel's choice of groups.

²⁹Surprisingly, the government-controlled (wholly-owned) corporation ultimately reappears as AM-FM's preferred alternative.

³⁰According to the report: "IFC enjoys more Panel support than FEA and, therefore, will be presented here as the preferred option between these two" (VII-6). AM-FM's decision to support IFC over FEA is not, however, explicitly supported.

³¹This is a peculiar statement given that the Panel later recommends a list of "key components" which it believes "should be achieved whether the ultimate radioactive waste management organizational structure is the Panel's preferred option, remains as the Office of Civilian Radioactive Waste Management (OCRWM), or is a third organizational form which Congress might select based on the Panel report and its own further investigation and deliberations" (X-1).

³²From AM-FM's list, these include the sub-cabinet office and the administration responsible to a cabinet office. Other potential cabinet and sub-cabinet alternatives are also excluded from this "group," including the sub-cabinet institute, the cabinet-level department, and the centralized sub-cabinet alternative.

³³In comparison, the report does not tell us how IFC appointments would be made.

³⁴I was unable to locate the full name of the model in the report.

³⁵Readers should refer to my literature review (Thomas 1992) for fuller treatments of the alternatives, criteria, and summaries presented in Table 2. Since I completed the literature review prior to reading AM-FM's report, the lists I developed reflect general concerns in the literature (as well as some specific concerns of the SEAB), rather than a direct response to AM-FM's report.

³⁶Unfortunately, Kelman (1990) does not discuss the extent to which public corporations are subject to federal procurement procedures.

³⁷See Kaufman (1956), White (1989), and Thomas (1992) for broader treatments of these themes.

³⁸ANCORP and BIDCORP, on the other hand, might face competition and/or could diversify their operations.

³⁹The report is somewhat inconsistent, however, in its treatment of OCRWM and IFC. Presumably, IFC would also face the problems enumerated for OCRWM, especially given it will similarly be subject to civil service constraints (VII-7).

⁴⁰I will not directly address the Panel's specific recommendations in Chapter X because these recommendations reiterate many of the points made elsewhere in the report and are later incorporated in the Panel's preferred alternative (a modified version of CWM). I refer the reader instead to my earlier paper for an alternative, supplemental list of marginal organizational changes (Thomas, 1992:48-50).

⁴¹In a concluding paragraph, the report itself suggests that AM-FM gave little thought to the feasibility of various alternatives: "...it is our principal recommendation that investigation of the specific steps necessary to implement, for example, a dedicated federally chartered corporation (the first choice of the Panel voting on organizational tests), should be undertaken immediately so that Congress can have a precise understanding of the legislative changes required to bring about such an organization" (XII-2).

⁴²The ordinal ranking is slightly modified in its second presentation, however, with credibility now preceding stability. Though one of these passages is likely the result of a typographical error, credibility and stability are so tightly intertwined in AM-FM's argument that it probably matters little which precedes the other in an ordinal ranking.

⁴³Since the Panel's "five most important" tests — which included cost-effectiveness but not political accountability — were chosen by vote, the resulting majority (or plurality) may have made concessions to the minority in order to reach a consensus.

⁴⁴See Thomas (1992) for a fuller treatment.

⁴⁵The report itself notes this inadequacy following an otherwise glowing evaluation of AM-FM's preferred alternative: "...the advantages of FEDCORP which the Panel perceives...remain to be demonstrated in practice, and discussions of the Panel recognized that these have a potential negative side" (XI-9). The report goes on to note that the Panel members believe that "organizational forms which better meet the tests may be desirable, but recognize that there is an intrinsic uncertainty as to how confident one can be that the organizational form that looks best on paper will in reality and over time fulfill its promises, and will in fact function as it is designed to function" (XII-2).

⁴⁶For example, the Central Intelligence Agency, the U.S. Information Agency, and the National Aeronautics and Space Administration are all exempt, at least in part, from Civil Service restrictions (Seidman and Gilmour 1986:270). More generally, "There is nothing to prevent the Congress from conferring on a non-corporate agency some or all of the powers normally granted to a government corporation..." (Seidman and Gilmour 1986:289).

⁴⁷NAPA's survey of government corporations found that most wholly-owned public corporations were "subject to civil service pay scales and hiring rules, while mixed-ownership and private corporations were not" (NAPA 1981:12).

⁴⁸For further discussion, see Seidman (1952) and NAPA (1981).

⁴⁹The report itself states that "FEDCORP's business orientation, and particularly its combination of a strong CEO and a management Board of Directors would enhance its credibility among the nuclear electric utilities which would bear the costs of its activities and require its waste management services" (XI-6). If credibility among utilities is important, then FEDCORP may indeed be an appropriate alternative.