

A STAKEHOLDER'S GUIDE to the Cleanup of Federal Facilities

Center for Public



Environmental Oversight

A STAKEHOLDER'S GUIDE to the Cleanup of Federal Facilities

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Center for Public Environmental Oversight (CPEO)

The Center for Public Environmental Oversight (CPEO) is a project of the San Francisco Urban Institute at San Francisco State University. CPEO promotes and facilitates public participation in the oversight of environmental restoration. CPEO's work, including workshops, forums, direct support, and publications, is based on the principles of Empowerment, Justice, Education, Communications, Partnership, and Credibility. The organization works with stakeholders of diverse perspectives including citizens, nonprofits, academia, government, decision-makers, responsible parties, and industry. These organizations range from neighborhoods to national in scope, and include groups that focus on issues from environmental policy, to technology and innovation, to environmental and social justice.

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ENTERING THE DIALOGUE

The *Stakeholders' Guide to the Cleanup of Federal Facilities* is an outgrowth of the work of the Federal Facilities Environmental Restoration Dialogue Committee (FFERDC), an official federal advisory committee which has had an enormous impact on the way federal agencies approach their environmental restoration obligations. The committee, which “sunsetting” in 1996, was made up of 50 members from several federal agencies; state, tribal, and local governments; and environmental, community, environmental justice, and labor organizations.

In February, 1993 the Committee released its *Interim Report*, the recommendations of which established the basis for a new partnership approach to federal cleanup activity. For example, it led to the formation of site-specific advisory boards at over 250 federal facilities, providing an opportunity for the people most affected by contamination and cleanup to influence cleanup decisions.

In August, 1995, in response to a perceived national rethinking of the federal government's obligation to clean up its property, the Committee released a statement of fourteen “Principles for Environmental Cleanup of Federal Facilities.” Those principles were incorporated into FFERDC's April, 1996 *Final Report*, which not only built on its 1993 recommendations but suggested ways to reconcile the legal requirements for environmental protection with the increasingly visible limitations on federal spending.

All FFERDC reports were consensus documents. Language was carefully negotiated by parties who, despite a common goal of furthering cleanup, frequently find themselves in adversarial positions.

Signatories did not necessarily commit their agencies to approve Committee recommendations, but they did agree to work proactively toward their implementation. Still, since the *Interim Report* had a sig-

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nificant, immediate impact upon the way the federal government approaches the cleanup decision-making process, there is a widespread expectation that most of the Committee's recommendations will be implemented in one form or another.

This guide is not a consensus document. I was a member of FFERDC, but I was only one of fifty voices. I have attempted to represent concepts from its reports, but I am sure that other participants would have selected or emphasized other ideas. I have attempted to introduce and simplify the federal cleanup process, but volumes, in addition to FFERDC's report, have been written on the subject, so I make no pretense that I paint a complete picture.

Once you have read this guide, I strongly recommend reading at least the FFERDC *Final Report*. There are a wide variety of other relevant documents on the subject, from diverse points of view, and new ones are being produced all the time. Instead of trying to present a short list of resources here, we invite you to contact us by phone, e-mail, fax, or letter, and we can point you to the documents that may interest you. The cleanup of federal facilities is an extremely complex, highly dynamic, and controversial field. This Guide does not expect to resolve or even identify all the debates over the cleanup process. It just attempts to provide public stakeholders with the background to attend meetings, read reports, and otherwise enter the dialogue.

Recent discussions of federal cleanup policy, including the FFERDC documents, acknowledge, early in their texts, the significance of public stakeholder involvement in the decision-making process. This guide, however, concludes with a section on partnership and public participation. It is not my intent to downplay public involvement; enhancing public participation is the purpose of this guide. Rather, this document is targeted to people who are reading it because they already are involved or want to be involved. You don't need to hear first that you should be part of the process. You already are.

Lenny Siegel
Director, SFSU CAREER/PRO

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INTRODUCTION



INTRODUCTION

The U.S. government is by far the largest landholder, the largest business, and the largest employer in the United States. It is also the largest polluter. No matter where you live in the fifty United States or its territories, there is a good chance that there is a contaminated parcel, or more, of current or formerly owned federal property near you. If you live or work near federal property containing toxic, radioactive, or explosive wastes, you are a public stakeholder in the federal facilities cleanup process. If the air you breathe or the water you drink is threatened by federal facilities contamination, you are a stakeholder. If you rely upon our natural resources—animal, vegetable, or mineral—for your economic, physical, or spiritual sustenance, you are a stakeholder. And if your economic opportunity or property values are affected by hazardous wastes at federal facilities, you too are a stakeholder. This guide is for you.

The cleanup of contaminated federal lands, now well underway, is technically challenging, legally complex, and enormously expensive. Consequently, from the early 1980s, when the problem was first widely recognized, it has been politically controversial. In fact, state and federal government agencies spent so much time fighting over decisions about what, how, and when to clean up that the entire process became slow, inefficient, and ineffective.

Many federal facilities resemble private industrial contamination sites, with decades of industrial dumping and leaks contaminating soil and ground water. As a whole, however, federal facilities differ from sites owned by private parties or local governments in at least five ways:

1. Contaminated federal properties tend to be larger, combining several types of contamination on a single property.
2. Certain federal pollutants, such as the waste from nuclear weapons production and unexploded bombs and shells, are unusual or unique, with no commonly accepted, cost-effective cleanup technology.

3. Federal agencies resisted oversight by the agencies established to regulate environmental contamination, the U.S. Environmental Protection Agency and its state counterparts. Only in 1992 did Congress pass the Federal Facilities Compliance Act, clarifying that states had the power to enforce hazardous waste management laws at federal facilities within their boundaries.
4. Agencies with national security missions, such as the Defense Department and the Energy Department's nuclear weapons complex, were reluctant to disclose information about their contamination.
5. All parties, including community representatives, officials at regulatory agencies, and the staff and contractors of the responsible parties (also known as regulated agencies—usually the polluters) ostensibly represent the public.

Since 1993, however, there have been great strides forward in the federal facilities cleanup process. Recognizing that the old way of doing business was not working, federal responsible parties agreed to a new way of attacking the legacy of past pollution. Among the most important reforms: Public stakeholders—people like you—would play an integral role in the new process. Members of affected communities and representatives of government agencies alike have been pleasantly surprised by the results, but there is much room for improvement.

This guide has been designed to empower public stakeholders to influence more effectively and oversee cleanup decisions. It translates complex issues into plain English, so it does not claim to answer every last detail about the cleanup programs. There are volumes upon volumes that already attempt to do that. Instead, it arms you with an introductory knowledge of cleanup so you can walk into a public meeting or review a public document fully understanding the discussion and confident in your ability to offer constructive suggestions for change.

While this guide follows a logical progression, it is written so you can skip quickly to the section that best meets your needs.

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THE PROBLEM



THE PROBLEM

THE MAGNITUDE

Today, the federal government owns about 732 million acres, approximately one third of the U.S. land area.¹ It is responsible for hazardous waste contamination not only on those properties, but on formerly owned lands where it also released hazardous substances.² Federal agencies with industrial and national security missions have catalogued more than 25,000 distinct waste sites on more than 2,500 facilities. Agencies which are primarily landholders — in the Departments of Interior and Agriculture — estimate that they manage properties containing at least 29,000 hazardous waste sites on their 691 million acres, although many of those — abandoned mines, for example — represent contamination caused by private parties, not the agencies themselves.

In this guide, cleanup refers to the remediation, isolation, or restoration of past contamination. Federal agencies also are responsible for large waste management programs — the treatment, storage, and/or disposal of wastes that are currently being generated. Sometimes it is impossible to separate the management of new waste from the cleanup or old waste, but in general the two waste streams are managed and regulated separately.

Virtually every federal department and major independent agency possesses contaminated property. For example, the “Superfund” National Priorities List, the official registry of the nation’s most polluted properties, contains facilities owned by the Departments of Defense, Energy, Transportation, Agriculture, and Interior, as well as the National Aeronautics and Space Administration.

By far, the federal agency with the largest long-term cleanup program is the Department of Energy. Energy Department Environmental

¹The acreage figures here are from “The Keystone Center Policy Dialogue on A Department of Defense Biodiversity Strategy—Final Report,” January 23, 1996, The Keystone Center, p. 3. Due to frequent land transfers, the totals vary over time.

²Federal agencies are also “responsible parties” for cleanup at numerous private properties to which they sent wastes for disposal or are otherwise considered liable. While federal contributions to such cleanups are often funded from federal facilities cleanup accounts, those properties are not “federal facilities.”

Management officials estimate that the environmental restoration of the 150 facilities, containing 10,500 potential release sites for which it is responsible, will cost \$227 billion over 75 years. Nearly \$30 billion has been spent already. The biggest piece of the Energy program is the former nuclear weapons production complex, including high profile facilities such as the Hanford Reservation (Washington state), the Savannah River Site (South Carolina), the Oak Ridge complex (Tennessee), the Idaho National Engineering Laboratories, and Rocky Flats (Colorado). The Energy Department programs include nuclear material and facility stabilization and waste management, as well as environmental restoration, and its estimates cover formerly used sites, uranium mill tailing sites, and non-Defense activities — such as civilian nuclear research laboratories — of the Department.

Geographically, the Defense Department has the largest cleanup program. It has identified nearly 12,000 contaminated sites at 770 active or recently closed installations, plus at least 3,523 contaminated sites at 2,641 former facilities.³ Through fiscal year 1996, the Department has spent \$9.4 billion, and it expects to spend \$29.5 billion more. The cleanup program is carried out by each of the armed services at their own facilities, with separate budget accounts covering closing and recently closed bases. The Army Corps of Engineers manages the cleanup of formerly used defense sites, and there is a smaller program for the restoration of property owned by defense agencies, such as the Defense Logistics Agency, which are not part of the armed services.

The Defense Department's cleanup challenge includes past and present munitions impact ranges, which cover somewhere from 10 to 20 million acres in the U.S. While some of these ranges contain toxic contamination, the more immediate hazard is unexploded ordnance (UXO), bombs and shells which did not explode at impact. A fraction — still covering a large area — of that land is currently unsafe for human use. The Defense Department is just beginning to catalogue these ranges, but they are known to include more than a

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³The Defense Department actually identified 10,372 more potentially contaminated sites, bringing the total number of affected installations to 1,705, but most of those were found to require little or no cleanup. In addition, there are about a thousand former defense sites still awaiting evaluation.

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thousand former defense sites, including an estimated 7 million acres now owned by the Department of Interior. More former ranges are now in the hands of other federal agencies, state, local, and tribal governments, and private parties.

Other federal agencies with industrial and transportation operations have contamination similar to that found at Defense — excluding UXO — but on a smaller scale. Their programs are generally newer, so their estimates of contamination and cleanup cost are less complete. For example, in 1995 NASA reported that it had 730 potentially contaminated sites at 17 separate facilities. It estimated the cost to complete its program at \$1.5 to \$2 billion, but its 1996 cleanup budget request was only \$37 million.

The major land management departments, Interior and Agriculture, have no comprehensive plans to seek out contamination sites in their vast territories. In 1995, they estimated that their properties contained 26,000 and 3,000 suspected contamination sites respectively. Their combined cost to complete cleanup was estimated, at the high end, to be nearly \$11 billion. This figure does not include any Defense Department cleanup expenditures at former sites on their lands. Their proposed annual cleanup budgets, however, were a mere \$66 million and \$45 million respectively.

THE CONTAMINATION

Typically, major federal facilities contain contamination in their soil, groundwater, surface water, and buildings from decades of spills, leaks, inadequate disposal, and retrospectively, improper use.⁴ Among the most prevalent pollutants are chlorinated organic solvents, such as trichloroethylene (TCE) and carbon tetrachloride. Even at very small concentrations, exposure to these chemicals is believed to be hazardous to human health. In certain geological formations, these chemicals spread rapidly. Since they

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⁴ Unless they are to be torn down, federal agencies generally don't consider the remediation of building hazards to be cleanup. They are subject to laws that govern the abatement of both lead paint and asbestos.

sink and bind to soil, it is difficult to fully remove them from groundwater or soil. When they break down, they frequently turn into more toxic and more persistent organic chemicals, such as vinyl chloride. Heavy metals such as lead, copper, cadmium, and nickel have been the historic waste products of electroplating, electronics, painting, and other manufacturing operations. Some of those metals are also released in the manufacture and use of ammunition. Furthermore, old mines and mining slag (rock wastes) often release toxic heavy metals simply through exposure to flowing water. Heavy metals are persistent — no one has yet figured out how to transform lead into gold — in the environment, but sometimes they can be stabilized — that is, put into a form where they pose little or no environmental threat. Like other responsible parties, federal agencies are not responsible for remediating naturally occurring heavy metal concentrations.

A wide range of other toxic wastes that are common at non-federal sites are also found at federal facilities. These include pesticides, the members of the PCB (polychlorinated biphenyl) family of oils, old batteries, and barrels of unknown constituents. They also include chemical weapons, although nearly all of those — once they are located — are managed under demilitarization programs, not cleanup. Toxic chemicals used in munitions manufacture, such as TNT, DNT, and RDX (trinitrotoluene, dinitrotoluene, and Royal Demolition Explosive), are found at ammunition plants, wash-out sites, burial areas, and sometimes at impact ranges.

Petroleum products such as gasoline, aviation fuel, and diesel fuel are probably the most common pollutants, because of their widespread use. Cleaning them up often involves the removal of leaking underground storage tanks. Most petroleum products are lighter (less dense) than water, so when they are spilled in surface waters they pose an immediate threat to wildlife, beaches, and other natural resources. In the ground, however, the light petroleum compounds are less likely than other chemicals to spread into drinking water supplies. Unfortunately, most petroleum products contain denser organic compounds such as benzene, ethylene, toluene, and xylene that behave like the organic solvents, and recent formulations of gasoline contain the fast moving toxic compound, MTBE (methyl tertiary butyl ether).

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The Energy Department has several of the largest radioactive waste problems in the world. Other agencies, such as Defense, have smaller radioactive sites, in part because they have been allowed to transport their “hot” wastes to Energy facilities in Idaho and Washington. Radioactive wastes are at least an order of magnitude more difficult and more costly to clean than toxic wastes, for at least three reasons: 1) mere proximity to radioactive substances is hazardous, making handling difficult; 2) their “toxicity” usually outlives humanity’s ability to control them; and 3) they can’t be neutralized. Consequently, the removal or consolidation of radioactive wastes is costly and dangerous, and once they are put into containers, nobody wants them. In addition, the military’s recent, widespread use of depleted uranium⁵ in ammunition, manufactured from low-level wastes created by the nuclear weapons program, is spreading uranium oxide particles on numerous weapons ranges.

Unexploded ordnance (UXO) — ordnance is the military term for bombs, artillery shells, rockets, flares, grenades, etc. — is the unique byproduct of the testing, training with, and use in warfare of munitions. As much as ten percent of bombs dropped and shells fired do not detonate upon impact. Some lie on the surface. Others penetrate deep into the soil or marine sediment. Some explode later upon contact; others explode only when mishandled. (Many accidents have occurred after souvenir hunters have taken UXO home.) In most terrain and climates, buried UXO eventually migrates to the surface, caused by phenomena such as frost-heave and erosion. In surface waters, flooding and tidal action tends to move UXO horizontally. Cleanup is challenging, because it is difficult to distinguish UXO from other metallic objects and a mistake can be deadly. Even surface use requires recurring clearance. Furthermore, UXO-littered ranges cover large areas, and the exact location of former impact areas is not always known. Finally, both exploded and corroded munitions release toxic chemicals and heavy metals onto range areas.

⁵ Uranium naturally consists of several isotopes. When processed for use in nuclear fuel or nuclear weapons, isotopes other than U-235 are considered waste products. That waste, now being recycled by the military into armor and anti-tank weapons, is still radioactive, though less so, and it is a toxic heavy metal as well.

THE IMPACT

In the early 1980s, before federal agencies started characterizing their hazardous waste problems, direct exposure was common. That is, people were drinking water contaminated by chemicals from nearby federal facilities. Today, however, direct exposures are rare, because poisoned wells have been shut down and other hazardous pathways have been blocked. Still, as the hazards already in the soil and water spread, continuing remediation is necessary to prevent future exposures and to make land and water supplies useful again. Sometimes water supply wells have to be shut down because extraction tends to spread contamination within underground aquifers.

At most locations, the various forms of contamination are a concern because they pose a threat to human health. In popular literature, at least, the most feared risk of exposure to toxic and radioactive wastes is cancer. Indeed, various forms of cancer are associated with the types of chemicals and radionuclides that have been released by federal facilities. But the same hazards can pose a wide range of other health problems, including both chronic health problems such as reproductive disorders, birth defects, developmental disorders, liver disease, thyroid disease, and kidney problems and acute health conditions ranging from headaches to nausea to skin problems. UXO, of course, poses a “health” problem of a different nature: injury or death due to explosion.

In general, our society has learned how to identify hazardous contamination and eliminate the most obvious pathways through which the general population might be exposed. The imminent hazard is usually controlled. However, the obligation to clean such contamination goes further because we value the natural resources, such as the groundwater aquifers, which are polluted or threatened with pollution.

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The same contamination, of course, poses a threat to our natural ecosystems. While environmental damage is often a good measure of the risk to public health — as in the case of fish poisoned with heavy metals — our laws and ethical systems also recognize the intrinsic value of environmental protection. That is, if a tree falls in the forest, and no human is there to hear it, we are still concerned that an owl or squirrel is losing habitat. Thus, from estuaries that host naval bases to remote deserts, federal facility contamination is often a concern in the absence of human “receptors.” This is obvious on lands such as national parks that have been set aside specifically for environmental protection; ironically, this is often a major concern on many military bases which, because of their missions, have prevented civilian development and thus have become islands of natural habitat.

Contamination also has an economic impact upon closed or closing federal installations. While this has been most obvious as major military bases have been shut down over the past decade, it applies to properties owned and operated by a wide variety of federal agencies. The problem is simple: As long as the military or other federal agency controls the property, public access to contamination can be limited. However, when the gates open up and redevelopment is planned, the opportunity for public exposure increases. As long as the contamination remains, future use may need to be restricted. In communities that are trying to recover from the economic shock of a federal facility closure, delayed reuse can be costly.

Similarly, contamination can limit future uses of property where the expected benefits are not primarily economic. For example, property designated as parkland or schools — where highly vulnerable populations may be exposed — is generally off limits until cleanup has occurred. Native lands, such as the Hawaiian island of Kaho‘olawe, often have immense cultural value, but they can't be used until they are adequately cleaned up. Furthermore, the bonds that tie all native cultures and many other communities to their land and resources are inherently culturally significant. Those bonds would be destroyed if contamination forced the inhabitants away permanently.

Finally, there is growing recognition that the combined health, economic, and cultural effects of environmental contamination have particularly strong consequences in poor, disenfranchised communities — especially those predominantly made up of people of color. In 1993, President Clinton signed an executive order making it federal policy to counter such environmental injustice, but the problems around federal facilities are somewhat different from better known examples at private waste sites. Toxic dumps and incinerators, which tend to be concentrated in communities of color and other low income communities, are generally regarded as locally undesirable land uses. On the other hand, most communities consider federal facilities highly desirable. Witness the enormous efforts communities have mounted to block military base closures. No national studies have been done, but because of their desirability as employers, federal waste sites are found in all types of communities. It turns out, however, that poor, non-white communities don't generally have the knowledge or the clout of other communities that host federal facilities. Consequently, they are less equipped to overcome the health threats that contamination poses.

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REGULATORY FRAMEWORK



REGULATORY FRAMEWORK

FIVE KEY QUESTIONS

Waste management and environmental cleanup in the United States are governed by a complex maze of federal, state, and increasingly, tribal laws. Though for many years the largest federal polluters considered themselves beyond those laws, Congress has definitively said otherwise. As a public stakeholder in the cleanup process, you don't need to understand the entire regulatory framework. Legions of lawyers spend their entire careers attempting to do that. But there are a few simple facts that can help you sort out what's really happening when legal issues come to the forefront at facilities in your community. And if those laws and regulations prove inadequate to deal with your problems, then you may wish to build upon that knowledge to push for changes in the laws or the procedures that support them.

Regulation of cleanup consists of oversight, enforcement, and decision-making. Oversight is the "looking-over-the-shoulder" part of the work. Enforcement means using legal instruments, such as court orders, fines, etc., to force action. Oversight and enforcement make up a small percentage of the regulatory effort, so they offer little opportunity for stakeholder input. In fact, the key elements of oversight and enforcement are embedded in the decision-making process, in the development of workplans and legally enforceable agreements. Once those are written, carrying them out is usually straightforward.

Decision-making is the essence of regulation. It's also the process where public stakeholders can best influence the outcome of a project. Simply put, there are five types of decisions made at a contaminated federal facility. At any given facility, they may be decided at each individual site. Many decisions are revised or updated several times before the cleanup is complete. Often, two types of decisions are made together, with no formal distinction:

1. Whether?

The first decision in any cleanup program is determining whether there is any hazardous contaminant, and if so, whether it poses a sufficient threat that it requires a response. Industrial federal agencies, such as the Departments of Defense and Energy, are required to systematically seek out contamination. Defense, in particular, came up with an enormous list of potential contamination sites. Once identified, nearly half those sites turned out to require no further action. At privately owned sites (as well as privately caused pollution sites on Interior and Agriculture Department lands), owners are usually not required by the government to identify all possible areas of contamination. (Banks or insurance companies often require private property owners to conduct assessments, however.)

The process of identifying sites, known most commonly by the terms “preliminary assessment” and “site inspection,” typically involves a search of historical records as well as interviews with former employees to determine not only if hazardous substances were released in an area, but whether they were even used or stored there. Each individual site is then checked to determine if any contamination is present.

Though “whether” begs a “yes” or “no” answer, that determination is often difficult and time-consuming. A surprisingly large amount of time has been spent by officials trying to find old landfills, spill sites, or target ranges identified by former federal employees, but absent from documentary records. In many instances, contamination is found, but it isn’t clear whether its form or amount requires a response. In such situations, more study is required before regulators and regulated agencies can agree whether to proceed with cleanup.

2. Who?

Since most federal facilities rarely change ownership, determining the responsible party is not usually a major issue. But contamination by contractors, lessees, former private land users (such as miners on federal lands), and even other federal agencies raises questions that require additional study and often the services of attorneys. In general, however, companies that operate government-owned facilities on contract do not assume responsibility for contamination. Sometimes it’s

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not clear whether contamination came from the federal facility or adjacent non-federal parties. At former government properties, it may be easy to identify the source of an artillery shell — considered the responsibility of one of the armed services — but it's much harder to assign responsibility for a petroleum spill.

At private facilities, cleanup has often been delayed as parties argued over responsibility. In fact, actual site characterization is often influenced by the desire to find the other guy's fingerprints on hazardous molecules. Ideally, at federal as well as private sites, cleanup should progress even if ultimate responsibility — and the payer of the bill — is not determined.

3. What?

Perhaps the most controversial cleanup decision is the establishment of cleanup standards. How clean is clean? How clean is dirty? Many neighbors of polluted facilities want “every last drop” of contamination removed or destroyed, or at least reduced to the point where it can't be detected. The laws, however, dictate cleanup standards based upon the likelihood that pollution will cause harm. That, in turn, often depends upon plans for the future use of the property. (See page 50 for a more detailed discussion of cleanup standards.)

4. How?

The decision about how to achieve cleanup goals typically takes place in two stages. Remediation may include actual cleanup, or particularly for short-term responses, the elimination of pathways between the contamination and the threatened public. Those short-term, or interim remedial actions, are often known as “removal actions,” even when they don't actually involve the physical removal of contamination. Emergency and time-critical removal actions require minimal documentation up front, but non-time critical removals still require written plans and regulatory approval.

Interim remedial actions are often cost-effective common sense actions designed to reduce rapidly the risk of exposure to toxic, radioactive, or explosive contamination. However, communities are often suspicious, either because they are concerned that the regulated agency won't actually come back to clean the property, or that it will use a succession of interim remedial actions to avoid going through the full remedy selection process.

Actual remedy selection starts at the remedial investigation/feasibility study (RI/FS) phase of cleanup. Representatives or contractors of the regulated agencies, with regulatory oversight, are supposed to screen a wide range of alternative technologies and methods for permanent or long-term containment, monitoring, removal, and/or treatment of the contamination. Remedy selection usually is based upon the nine criteria of the National Contingency Plan (see page 54). Since those criteria include cost and public acceptance, there is ample opportunity for political influence from the top (regulated agency headquarters) and the bottom (the local community). After public review of the alternatives — which always include “no action” — a record of decision (ROD) is drafted and signed.

Agencies have established presumptive remedies — off the shelf standard approaches — for many common problems, but there is increasing interest in innovative cleanup technologies, new methods being developed to accomplish cleanup: conducting cleanup cheaper, faster, safer, or better. Even when the main remedy is selected, there are secondary decisions. For example, even it's decided to pump and treat contaminated groundwater, it still must be determined whether and how to treat toxic gases released during water treatment. Though remedy selection decisions appear permanent, they are often changed based upon new information. Even during remedial action, site characterization continues. Furthermore, agencies are supposed to revisit decisions — to see whether the remedy is doing the job — periodically (every five years under the Superfund law). Records of decision are also supposed to define when a cleanup is complete — that is, when to turn off the remedy.

5. When?

Despite widespread frustration that both site characterization and remediation take too long, there isn't enough (nor is there likely to be enough) money in federal cleanup budgets to start all projects even when all the plans and designs have been approved. That means that someone or some system must decide which projects are carried out immediately, which must wait in line, and which are put off for several years. Current approaches to setting priorities are discussed below (page 56). It is essential to recognize, however, that the decision when to carry out an activity is largely independent of whether, what, and how?

THE LEGAL BASIS

The legal basis for implementing and regulating cleanup at federal facilities is extremely complex. Statutes, regulations, and executive orders define both the lead agencies responsible for carrying out cleanup and the regulatory agencies that must oversee their work.

1. Lead agency authorities

Executive Order 12580, signed by President Reagan in 1987, designated each federal department and agency as the lead agency for hazardous waste cleanups where it is the responsible party. Furthermore, specific statutes (such as Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act and the 1986 law establishing the Defense Environmental Restoration Account) further anchor the lead role of many of those agencies.

In general, the lead agency is the department or agency that owns or last owned and operated the federal facility. At former federal properties, or those that have been transferred from one agency to another, it's the federal agency considered most responsible for site contamination. Nevertheless, at this stage it's usually easy to find out who's in charge. They're the people who answer the phone, announce the meetings, and hire the contractors.

It sometimes takes a little time to find out how the local cleanup office fits into the agency hierarchy, since organizational structures vary widely. Still, there is always a link between lead agency authority and the source of funds to manage cleanup activity at that location.

2. Cleanup laws

The principal federal law governing hazardous waste cleanups is the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as the Superfund law, as amended and reauthorized. Section 120 of CERCLA, originally passed in 1986 — and since subjected to repeated modification — governs federal facilities cleanups. The actual “Superfund,” a budget relying upon special taxes of chemical companies, does not apply to federal facilities. It is only designed to pay for cleanup at abandoned non-federal sites. Congress, in its ongoing debate on the reauthorization of CERCLA, is considering mechanisms for transferring CERCLA enforcement authority to state regulatory agencies.

Under CERCLA, U.S. EPA is supposed to evaluate all federal facilities for inclusion on the National Priorities List (NPL), informally known as the “Superfund” list.⁶ Using the formulas of the Hazard Ranking System (HRS), EPA staff score each property by its level of contamination, the affected receptors (population or ecosystem), and the pathways through which that contamination might reach the receptors. If the score exceeds 28.5, it is placed upon the NPL. There are currently 160 NPL properties owned or previously owned by the federal government, compared to over 1,200 more NPL sites for which private parties or state or local governments are responsible. In recent years, some federal sites that would probably qualify technically for NPL listing have been excluded because EPA has not completed the scoring or because Congress has given governors the power to keep properties off the list. Badger Army Ammunition Plant (Wisconsin) is probably a case of the former; King Salmon Air Force Station (Alaska) and Mare Island Naval Shipyard (California) are examples of the

⁶ The “Superfund” name is sometimes confusing, because it refers to a law (CERCLA), a tax and cleanup fund set up under that law to clean private sites where responsible parties do not foot the bill; and the NPL. Federal property cleanups are funded from the budgets of responsible agencies, not the Superfund.

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latter. Federal facilities differ from typical private NPL locations, however, in that individual properties usually include numerous — sometimes hundreds — of real or potential contamination sites. There is a controversy today, therefore, as to whether the NPL listing should cover only those hot spots or plumes that raise the score to 28.5 or whether the entire federal facility should be listed, fenceline to fenceline.

NPL listing adds to public awareness of contamination at a facility, but the principal legal consequence is that U.S. EPA is more directly involved in cleanup oversight. (This could change, under some of the proposals for CERCLA reform.) In the past, listing formally made it easier to allocate cleanup funds to a facility. Newer systems of prioritization use other criteria, but NPL listing may still influence perceptions of need.

The Resource Conservation and Recovery Act (RCRA) was passed in 1976 to regulate hazardous waste management throughout the United States. RCRA's Corrective Action provisions govern cleanup at properties permitted under RCRA for treatment, storage, or disposal. Most states with large federal facilities are authorized, by U.S. EPA, to oversee RCRA corrective actions. EPA administers the law in other states and territories. The Federal Facilities Compliance Act, enacted in 1992, makes it clear that states do indeed have the power to enforce RCRA at federal properties.

Several industrial states — such as California, Colorado, and New Jersey — have their own hazardous waste programs that regulate cleanup within their boundaries. Anchored by the U.S. constitution, these states argue that they do not need Congressional or EPA endorsement to enforce those laws.

While Federal agencies and state regulators have largely worked out roles and responsibilities for the cleanup of hazardous industrial wastes, there is serious, sometimes heated debate between state representatives and the Defense Department over the extent of state authority over waste munitions under CERCLA, RCRA, and other hazardous waste laws. EPA's Munitions Rule, promulgated in February, 1997 in implementation of the Federal Facilities Compliance Act, tries to re-

solve numerous regulatory issues around the transportation, storage, and disposal of waste munitions, and the Defense Department is working on its own Range Rule to govern closed munitions ranges. Both the Munitions Rule and Range Rule face possible legal challenges. Furthermore, since the Range Rule is likely to leave open legal challenges under other authorities, the question of who determines if and when to clean up a munitions range will probably not be fully resolved for years.

The regulation of underground fuel tanks, including their removal and cleanup of contamination, is regulated by the RCRA Hazardous and Solid Waste Amendments of 1984. Underground storage tank oversight is not only delegated to states, but in turn the states often delegate authority to counties or other units of local government.

These laws have potentially overlapping applications, making cleanup decision-making more complex. At some locations, such as Colorado's Rocky Mountain Arsenal, agencies have fought major legal battles in an attempt to resolve differences. Most participants agree that they want a consolidation of authority, but they disagree as to who would come out on top.

Additional laws govern the response to radioactive waste and specific toxic substances, such as PCBs and asbestos, and the relationship of all such statutes can be confusing at sites where a wide mix of contaminants is present. Furthermore, other state, federal, and local environmental laws, such as the Clean Air Act, the Clean Water Act, and the Endangered Species Act, often influence cleanup strategies and requirements. They do not directly govern cleanup, but they are routinely incorporated into cleanup plans and procedures as Applicable or Relevant and Appropriate Requirements (ARARs). (See page 54.) One sometimes needs a "code book" just to keep track of all of the cleanup laws that might apply at a site.

THE REGULATORS

The regulatory framework for federal facilities cleanup divides the universe of government agencies between the regulated agencies and the regulatory agencies. While the regulated agencies are generally the polluters, sometimes they are simply property owners who have “inherited” someone else’s pollution. In the parlance of private-site cleanup, they are the responsible parties. At federal facilities, regulated agencies take the lead in making sure that contamination is found and remediation takes place.⁷ And they pay for the work from their budgets.

Regulatory agencies oversee the cleanup. Generally, they have enforcement authority to make sure that the regulated agencies do their work properly. Historically, the regulated agencies have seen the regulators as adversaries, questioning not only their activities but their motives. Increasingly, however, regulators are seen as helpful partners, falling back upon enforcement powers only as a safety net. U.S. EPA plays a formal role at least at NPL (Superfund) sites and closing military bases. State and territorial environmental or health agencies have regulatory authority at virtually at every federal facility within their boundaries. At U.S. EPA, the headquarters Office of Solid Waste and Emergency Response coordinates and sets policy for federal facilities environmental restoration. However, remedial project managers and support staff — such as scientists and attorneys — are based in federal facilities offices in EPA’s ten regional offices.

In most states, regulatory authority is vested in a state environmental or health agency, but in some states — California at least — there are independent sub-state air quality and water quality boards with jurisdiction over geographically defined water districts (watersheds) or air quality districts (air basins). Those boards operate essentially as state agencies.

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⁷ U.S. EPA is the lead agency only at privately owned sites where private owners are either unknown or unable/unwilling to take the lead. It is not the lead agency at properties owned, managed, or previously owned by other federal agencies.

Other state and federal agencies often exercise oversight as natural resource trustees. Their role is to protect natural ecosystems, economic resources — forests, mines, grazing areas — and specific animal populations, such as migratory birds, marine mammals, and endangered species. Under an occasionally used provision of CERCLA, trustee agencies may recover monetary “natural resource damages” or require mitigation activities.

Tribal regulators theoretically exercise regulatory authority not only on reservations, but in areas where they hold customary usage rights. In practice, however, that authority has not been widely used. Tribal governments view their regulatory authority not only as a way to protect their population and environment, but as an expression of their sovereignty. By treaty, law, and executive order, the U.S. government now acknowledges a government-to-government relationship with 322 distinct Indian nations in the contiguous 48 states as well as 225 tribes and villages in Alaska.

Local governments, on the other hand usually play a less formal role. They may have regulatory jurisdiction over certain ARARS. They usually have land use planning authority, but that doesn’t kick in officially until the federal government declares the property surplus. In some instances, particularly when the local government is the designated transferee of surplus federal property, the local government seeks a direct role in cleanup oversight. In most, it participates along with other members of the public in public meetings and site advisory boards.

While under some laws members of the public can sue to ensure environmental enforcement, public stakeholders by definition do not exercise regulatory authority. They must advise, take political action, or go to court to influence cleanup decisions which are made through the interaction of regulated and regulatory agencies.

PROCEDURES

At federal properties on the National Priorities list, CERCLA requires that regulators and regulated agencies negotiate a Federal Facilities Agreement (FFA) by the time they develop a record of decision documenting the selection of a remedy. The FFA establishes such agreements early in the cleanup process, to govern site characterization and interim remedies as well as long-term cleanup activity. An FFA may divide a facility into several operable units, which may be defined geographically, by medium (such as soil or groundwater), or both. A typical FFA lists twelve primary documents and six secondary documents, each in multiple drafts, per operable unit. EPA has a national model agreement, but EPA regions and state regulators negotiate the details with the regulated agency for each facility. FFAs are legally binding documents that can be enforced by either state or federal regulatory agencies, as well as fourth parties. Depending upon the degree of partnership that exists at a facility, the FFA can be a fairly rigid roadmap or simply a document to fall back upon should problems emerge among the parties.

Closing military bases, even if when not on the NPL, are also subject to oversight by both state regulators and U.S. EPA, since the latter plays a key role in the certification of federal property for transfer. The Defense Department, working with regulators, prepares a Base Realignment and Closure Cleanup Plan at each facility, but that document is a roadmap and resource, not a legally binding agreement.

In addition, most states and territories (48 out of 56) have a Defense State Memoranda of Agreement (DSMOA) with the Department of Defense, the agency with the largest number of active cleanup projects. The DSMOAs, based upon a national model agreement, establish procedures for coordinating oversight and resolving disputes within each state, but they do not include site-specific milestones or goals. DSMOAs also provide for the reimbursement of state oversight ex-

penses, based upon a long-term goal of 1% of cleanup expenses at active and former bases at 1.5% at closing bases.

Some states are also negotiating site-specific agreements for properties that are not on the NPL and thus do not have direct EPA oversight. State regulatory authorities, however, are not confined to the existence of enforceable agreements. They can simply issue orders to force compliance with hazardous waste laws.

Most federal facilities differ from private NPL and other cleanup sites because the responsible party — the federal regulated agency — is easily identifiable and has deep pockets. However, there are federal facilities where private parties also are responsible parties. For example, Shell Chemical company, which had leased a portion of the Rocky Mountain Arsenal for pesticide manufacturing, has been held accountable for discharging toxic agricultural chemicals on top of chemical warfare wastes that the Army had earlier released. At Moffett Naval Air Station (California), nearby electronics manufacturers such as Intel and Raytheon are responsible for a significant portion of the TCE plume underneath the base. At many formerly used defense sites, current operators may be responsible for contamination. But government contractors who operate government plants — for the Energy Department, Defense Department, NASA, etc. — are generally not held financially responsible.

Private parties are not usually included in federal facilities agreements, with the notable exception of Shell at the Rocky Mountain Arsenal. They are subject to their own enforcement orders or negotiated settlements. Where they are major players in the cleanup, however, they usually end up signing agreements defining their roles and responsibilities with respect to the federal agencies. In fact, when two federally regulated agencies are involved at the same location, they attempt to negotiate a memorandum of agreement between each other.

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THE BUDGET CYCLE



THE BUDGET CYCLE

As appropriated federal programs, the cleanup activities of federal agencies are organized to mesh with the federal budget cycle. Money is requested, approved, and allocated one year at a time. Because the process of developing budgets and spending money takes several years, each agency is dealing with several years at the same time, but the decisions are always at a different stage.

The system is complex, but the impact is simple. The executive branch and Congress impose firm limits on each national cleanup program each year, but both in the building of budgets and the allocation of appropriations there is an enormous amount of flexibility in spending by location, activity, contracting, and timing.

The following summary is generally true, but the details vary widely within and among agencies, depending upon the account.⁸ It's important to understand how budgets are set for cleanup at your facility, but that doesn't mean that machinations within the federal government should determine, unilaterally, where and when your community focuses its effort.

PLANNING YEAR

Historically, agencies have put together estimates of environmental expenses five years in advance of the *execution* year—the fiscal year in which the spending is expected to take place—submitting what were known of as A-106 reports to U.S. EPA. Those reports were generally considered wild guesses, and they are being phased out.

Serious budgetary planning usually begins in the planning year, two years before the execution year.⁹ Early in the planning year, the White House-based Office of Management



FALL, 1997

OMB sets FY'00 budget targets for each agency

⁸With very few exceptions, federal spending is defined by fiscal years, which begin on October 1 of the year before the numbered year, and continue through September 30. For example, fiscal year 1997 (FY1997) began on October 1, 1996.

⁹This generic description may vary in details and terminology from agency to agency.

and Budget (OMB) tells each agency's headquarters what level of money it expects to make available two years hence. Though OMB targets are legally set independent of Congress, the high-profile negotiated budget agreements between Congress and the President now set the general contours within which those targets are set.¹⁰

Based upon historic spending patterns, each headquarters divides up the total and develops targets for each facility. Many departments work through intermediary bureaus, offices, and commands — such as the Army's Forces Command or the Air Materiel Command — which in turn transmit goals down to the facility level. Those facilities learn those targets by January. Thus, about January, 1998, remedial project managers found out what they were expected to spend in fiscal year (FY) 00.

About April of the planning year (two years out), the remedial project manager for a facility, after determining a workplan or schedule, establishes a request balancing those targets against locally interpreted needs. If a facility is large enough to have multiple project managers, then they have to reconcile their requests before they are sent upstairs.

Some agencies, such as the Energy Department, transmit field requests directly to national headquarters. Those with intermediary levels, such as the armed services, send their requests up the chain of command. Historically, budget proposals are shaved or shrunk each step up. The agency comptroller, who has responsibility for balancing the books but little knowledge of envi-



JANUARY, 1998

Agency sends FY'00 budget guidance to facilities



APRIL, 1998

Facilities send FY'00 budget proposal to agency headquarters.

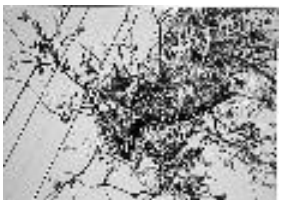
¹⁰Furthermore, if appropriations for any given year exceed the annual budget cap, the Balanced Budget and Emergency Deficit Control Act of 1985 mandates across the board cuts.

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SEPTEMBER, 1998

Agency HQ submits FY'00
budget to OMB



NOVEMBER, 1998

OMB passes back FY'00
budget to each agency



FEBRUARY, 1999

President submits FY'00
budget to Congress

ronmental requirements in the field, often makes major reductions, particularly if Congress made cuts the previous year.

By the end of September, each agency's headquarters is supposed to submit a preliminary budget to OMB. (That is, the FY00 budget is sent up in September, 1998.) With the exception of the Energy Department, the cleanup budget is merely one or a few lines in a much larger agency budget. According to executive order #12088, issued by President Carter in 1978, each De-

THE BUDGET YEAR

As the next fiscal year begins, the planning year becomes the budget year. That is, in October, 1998, FY00 becomes the budget year.

Typically in November, OMB passes back the numbers to the agency. If the agency strongly disagrees, it can appeal. Whatever the result, it tells subordinate offices—commands, divisions, facilities, etc.—to adjust their plans to fit.

Then, in late January or early February, with great fanfare, the President submits the entire federal budget to Congress. Buried deep in each agency budget are the environmental restoration accounts. Between March and August, the Congressional committees with direct jurisdiction over that agency hold hearings on its budget, typically in the spring and early summer. Depending upon the size of the cleanup budget and the size of the rest of the agency's budget, they may focus on cleanup.

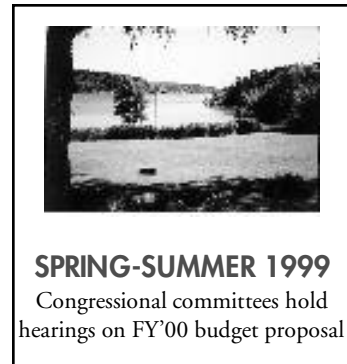
At least for the big cleanup programs—the Energy and Defense Departments—authorizing committees take ac-

tion first. For Defense and Energy’s nuclear weapons complex, that means the House National Security Committee and the Senate Armed Services Committee. Both committees assign cleanup issues to subcommittees, which “mark up” legislation, establishing both policies and funding levels. That legislation is incorporated into both the House and Senate versions of Defense Authorization Act, or similar authorizing bills for other agencies which must be approved by a majority in each House.

Once the bills are approved, the two houses of Congress must reconcile the language in conference committee. Major changes are often made to policy language, but usually the monetary amounts are resolved by compromise. That is, in the absence of strong external pressure, they just split the difference. Throughout this process, they may hear from the executing agencies — the relevant cleanup offices — but those agencies are supposed to inform, not to lobby Congress. Officials can supply oral or written justification; they can negotiate; and they can appeal decisions. But they are not supposed to wine and dine the members and staff of either house, nor may they directly mobilize public opinion in support of their requests.

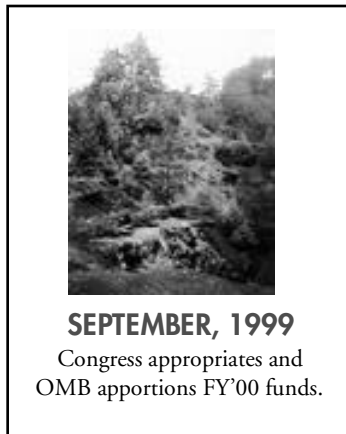
The conference committee bills go back to both houses of Congress, which must again pass the legislation. Sometimes there are fights over the conference bills, but rarely are cleanup issues raised at this late date. Then the passed legislation goes to the President for his signature. Again, the bills containing the cleanup program might be vetoed, but cleanup is too far down the list of Presidential priorities to be an issue at this point.

While the authorizing committees are moving, the appropriations committees are taking action as well. Au-



thorization—technically, “authorization for appropriation”—is supposed to be first, and the House is supposed to initiate appropriations, but in practice there is a great deal of overlap. The Appropriations bills go through almost the same legislative process. Though there are long-standing legal distinctions between authorization and appropriation, the two processes are usually duplicative. Where there are differences between the authorized amounts and appropriated amounts, the appropriations generally take precedence.

Ironically, some of the biggest changes in cleanup budgets are made in the last days of the Appropriations conference committee. When leaders of the two (House and Senate) Appropriations committees find out that they need money to pay for other, high priority projects (or pet programs), they look to the cleanup accounts as a source.



The constitution requires that appropriations be made before the beginning of a fiscal year. Particularly when the president and Congress have different spending priorities, meeting that deadline is particularly difficult. There are some accounts that have money in the pipeline, and others where essential work is allowed, but generally cleanup spending (including the work of cleanup personnel) grinds to a halt unless a continuing resolution is enacted. A continuing resolution is a temporary appropriation based upon the previous years agency appropriation. In 1996, many agencies shut down when Congress and the President could not agree on continuing resolutions, and many lived in uncertainty for most of the year because permanent appropriations were not enacted until the end of the year.

EXECUTION YEAR

This is the current fiscal year, in which funds are actually obligated. FY98 began October 1, 1997. Remember, while this money is being spent, the executive branch and Congress are working on future budgets.

At the simplest level, as soon as the appropriation act becomes law, OMB allocates funds, to the degree that funding legislation provides flexibility. The agency allots funds among its subparts, eventually down to the facility and project level. Agencies may make mid-year adjustments, sometimes taking funds from some facilities because projects there are not ready to implement, but also often because funds are desperately needed elsewhere in the same organization. At the end of the year they formally review their allotments.

Most accounts require that money be allocated by the end of the fiscal year, or it's turned back to the treasury. Even accounts such as base closure cleanup, which legally may be accumulated beyond September 30, are subject to Congressional pressure to use it or lose it. (Legislators find it hard to believe that agencies need money if they have trouble spending it in a timely fashion.) Thus, it's not uncommon for federal agencies to rush around looking for ways to spend unspent funds by the end of the fiscal year. This is particularly a problem for cleanup programs, where decisions about remedies and other activities are constantly subject to external review, regulation, and delay. Congress, unfortunately, seems unaware of or unwilling to take those factors into account.



OCTOBER, 1999

Agencies allot FY'00 funds internally



**OCTOBER, 1999-
SEPTEMBER, 2000**

Agencies execute work in FY'00 budget.

Agencies make adjustments in FY'00 internal allotments

Agency programs are divided into line items. For most agencies, environmental restoration is a separate line item, although there may be subcategories, and even separate legislation. At Defense, for example, base closure cleanup funds come out of the Base Realignment and Closure accounts, which are line items in the Military Construction Appropriations Act. Cleanup money for active bases, however, is found in the Defense Appropriations Act. Congress generally allows agencies to make minor adjustments in line items, but it requires some form of approval — by the relevant committees — for major reprogramming. Sometimes even new legislation is required. Funding bills to serve other purposes — such as reconstruction after the Northridge Earthquake in 1994 — sometimes cut into already appropriated cleanup funds.

Sometimes, when influential members of Congress are dissatisfied with the priority given projects of interest to them—usually within their district or state—they actually earmark money as line items for specific projects. This can happen at two levels: First, as a line item, an earmark is mandatory unless it violates other laws. Funding is taken off the top of the budget to which it is assigned. The remainder of that budget is allocated according to normal procedures. Second, the earmark may be written into the report of a Congressional committee, but left out of the actual law. Of those reports, the joint House-Senate conference committee reports are most important, but sometimes unchallenged language in the single-house committee reports carries a great deal of weight. Technically, report language is non-binding, but agencies usually listen carefully, since the members of Congress who insert such language have the ability to give the agency a great deal of trouble—or help—the following year.

The most critical point about budget line items is that under the Anti-Deficiency Act external agencies, even those with constitutionally sanctioned regulatory powers, cannot force the executive branch to spend money that has not been appropriated. If there is other money left in a line item, regulators can sometimes insist that it be reallocated. But they cannot force an agency to draw funds from another line item unless Congress has specifically permitted such action.

Finally, it is also important to recognize that the awarding of contracts, the normal mechanism for cleanup activity — *does not* mean that money changes hand or the work is actually being done. Under the most common cleanup contract vehicles, contracts represent theoretical accounts against which specific payments for specific work — often called task orders — can be made as needed.



SEPTEMBER, 2000

Agencies review FY'00
execution of work.

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to the Cleanup of Federal Facilities

CONTRACTING



CONTRACTING

While federal agencies are responsible for cleanup at their facilities, actual site characterization and remediation is nearly always carried out by contractors. Government contracting is an extremely complex, constantly changing phenomenon. Even career federal officials who rely upon contracts to carry out their programs don't fully understand contracting procedures. This section, therefore, is merely an introduction to contracting.

In general, contracting procedures have been imported from other tasks, such as construction. Agency officials are constantly trying to adapt and improve contract vehicles to meet the unique demands of cleanup. Often they use tools that seem counterproductive. Better instruments exist, but innovative contracting usually means more work and more risk to the responsible officials.

Most contractors are private, profit-making companies or groups of companies. Sometimes, however, contracts are let with non-profit organizations, other government agencies — such as the U.S. Geological Survey — or even entities within the agency awarding the contract. The Navy, for example, has formed pools of cleanup workers at closing shipyards, such as Mare Island and Charleston, who contract with the Navy Facilities Engineering Command (NavFac), which controls cleanup.

Project management may be carried out by the organization that owns the facility (or which owns the problem, in the case of transferred property), intermediaries such as NavFac or the Army Corps of Engineers, or contractors. At government-owned contractor operated (GOCO) facilities — many military bases, NASA facilities, and nearly all nuclear weapons complex plants and labs — “umbrella” contractors are responsible for day-to-day operations, including cleanup.

Contractors, including GOCO operators, are not independent voices, however. They represent the owning agency. Their selection is governed by detailed rules designed to prevent corruption and favoritism, so regulators and the public do not play a direct role in either their selection or management. Some agencies insist that all communications with contractors go through government staff, but increasingly they are recognizing the benefits of informal communications.

There are many forms of contracts. Some specify a fixed price when they are awarded. Others are based upon performance units, such as time and materials. Still others award extra money (called an award fee) if contractors meet a variety of prescribed goals. Often, the announced amount of a contract has little to do with the flow of money. It represents a maximum against which a succession of task orders are charged. That is, the money is not spent until appropriations are approved and specific jobs are assigned.

Based on rules derived from construction work, some agencies separate study contracts (architecture and engineering, or A&E, in construction parlance) from “dirt-moving,” more generally known as remedial action. A&E contracts are supposed to be awarded based upon contractor qualifications. The price for each task is then negotiated. Other agencies award “total environmental response contracts” (TERCs) that entail both types of tasks.

Like homebuilders, cleanup contractors don’t do all the work themselves. Just as master remodeling contractors hire plumbers and electricians, cleanup contractors may subcontract with well drillers, analytic labs, or developers of specific cleanup technologies or equipment. A site may have a succession of contractors or several working at once.

Many agencies prefer to award large, regional contracts to major contractors or consortia of contractors, rather than small, facility-specific contracts, in the belief that it brings stability, economies of scale, and reliability to the work, as well as to limit the paperwork for small in-house staffs. However, this makes it difficult, but not impossible to ensure that local companies, minority contractors, and the vendors of innovative technology are brought onto a job. Consequently, utilizing cleanup work to promote local economic recovery — where facilities have closed — turns out to be a lot harder than it seems. It can be done, but it takes both a strong will and very careful planning.

Finally, it is important to remember that the contractors work for the lead agency. They are supposed to offer options and implement projects, and they are frequently called upon to explain the program to the public. But they are subject to constant oversight by government employees who are directly accountable to the public.

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to the Cleanup of Federal Facilities

DECISIONS



DECISIONS

Running a cleanup program at any facility consists of a continuing sequence of decisions. Some of those decisions are embodied in documents written into negotiated cleanup agreements between the regulated agency and its regulators at that location, but equally important decisions are made between the documentary milestones. Some decisions are routine, in that they come up at most federal cleanup projects. Others are unique to the problems or environment at the facility in question.

CHARACTERIZATION

Characterization, most simply, consists of 1) surveys of the physical environment at a site, such as mapping of underground geological formations; 2) the sampling of water and soil to determine the nature, quantity, and extent of contamination; 3) analysis of those data. Frequently, scientific models are used to project the potential spread of contamination under a variety of conditions. Under CERCLA, the initial stages of characterization, preliminary assessment and site inspection (PA/SI) normally determine whether serious contamination exists at a site. Most characterization takes place during the remedial investigation and feasibility study (RI/FS) phase, but some level of study continues throughout the life of the project. In fact, sampling or other monitoring is usually necessary to determine when to stop the response, whether it be active remediation or controls that restrict access or toxic pathways.

Though there is widespread frustration with the large amount of time and money spent on studies at contamination sites, they are an essential part of the process. None of the regulatory questions—whether, what, who, how, and when—can be resolved without careful site char-

acterization. The key to an effective program is to find an appropriate level of study to answer those questions, not simply to drill monitoring wells or take samples because the capacity exists or because that's the way project managers did the work last time.

Take the all too common situation of an underground plume of water contaminated with organic solvents, such as TCE. Without knowledge of the geology and the extent of the plume, it's easy to install an extraction system that actually spreads the plume. When, years ago, some facilities started looking for such plumes, they actually stopped searching at facility boundaries.

A good characterization program balances the management of resources against the need for certainty. Regulated agencies tend to be more concerned about their resources; regulators tend to be more concerned about certainty. The affected public usually tries to make sure that officials are looking for contamination in the right places.

Historically, sampling meant extracting soil or water on the site and sending the samples to off-site laboratories. Today, however, many technologies exist for on-site, real-time or quick turn-around sampling. That means that the results of one test can be used, almost instantly, to determine where the next sample is taken. Even in these situations, off-site labs are still used to verify a small fraction of the on-site tests, but frequently on-site methods cut time and expense. On the other hand, where site conditions require recurring sampling at the same location, off-site analysis may still be the most efficient approach.

INTERIM REMEDIAL ACTIONS

Cleanup — the often mythical “moving of dirt” — doesn’t have to wait for studies to be completed. It makes sense to remove sources of contamination, such as leaking underground storage tanks, early in the process. It makes sense to block contaminant pathways, such as old wells that connect contaminated groundwater with aquifers (underground reservoirs) that provide a community with drinking water.

Such interim responses can be combined with site characterization. For example, a typical project to remove leaking fuel tanks will sample the surrounding soil, excavating until fuel contamination is no longer found.

Many simple or urgent interim actions are taken without the preparation of a full set of cleanup documents. Under CERCLA, major interim responses are usually called “removal actions,” even though there might not be any physical removal. The document that controls a removal action — unless it’s time-critical — is called an EE/CA (engineering evaluation/cost analysis). It’s possible for a site to be cleaned up, therefore, before reaching a record of decision on the site remedy. Depending upon the level of regulator and public involvement, this has both advantages and disadvantages.

A site experiencing incremental cleanup may still be subject to a facility-wide record of decision, to augment interim actions or simply to confirm that proper actions were taken.

SETTING STANDARDS

Before selecting a remedy—that is, establishing a long-term cleanup program—project managers need to agree upon cleanup objectives. Often called “How clean is clean?”, this set of decisions sets goals for the acceptable levels of various types of contamination that will remain in the soil, groundwater, surface wa-

ter, or marine sediment once cleanup activities are complete. Those goals vary with potential pathways. Based upon incomplete scientific research, they are frequently subject to serious debate, particularly if the remedies required to reach those goals are costly.

Groundwater cleanup goals are usually based upon fixed levels established by U.S. EPA or state agencies. Those levels are based upon scientific research designed to measure the risk of exposure. Given the relatively small amount of research that has been conducted, particularly on the non-cancer health effects for most chemicals, the standards are subject to debate. Those cleanup goals typically apply to any underground reservoir, or aquifer, that is used as a source of drinking water, but several low-rainfall states, such as California, protect most aquifers, unless they contain high levels of minerals (e.g., from seawater intrusion) as potential sources of drinking water.

In recent years, many government agencies have begun applying “containment zone” policies, further limiting cleanup goals. If contamination is breaking down faster than it is migrating to drinking water wells or sensitive ecosystems, then less cleanup may be required. In fact, in many locations regulators consider natural attenuation an appropriate remedy, when adequately monitored. Natural attenuation is generally viewed favorably when natural processes, such as biodegradation, actually break down the contaminants, but the term also includes a variety of other processes, such as dispersion, dilution, and volatilization, in which the contamination merely spreads out over a wide volume of soil, water, or air.

Soil and sediment cleanup standards, on the other hand, are usually based upon site-specific risk assessments,¹¹ which in turn are predicated upon land use scenarios or assumptions — such as residential use, recreational use, or industrial use. That is, contractors for the regulated agency, overseen by the regulators, calculate the likely health impact of the soil contamination, based upon the possibility, that people

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¹¹ Increasingly, however, regulators are taking what is called a “tiered approach” to soil and sediment cleanup standards. Under this concept, a responsible party may choose to use a regulator-sanctioned look-up table for soil cleanup levels, essentially accepting more stringent cleanup standards in exchange for the certainty and time and effort saved by not conducting risk assessments. If the responsible party can show that the characteristics of the cleanup site merit less stringent standards, they can use pre-established formulas to alter the fixed levels from the tables. Finally, if the responsible party believes that less stringent standards would still be protective, it still can elect to conduct the historically required risk assessment.

will eat, breathe, or otherwise come into contact with it. Historically, government agencies have been conservative, urging cleanup to the most stringent standard — usually residential — when future use was in doubt.

Today, however, particularly at closing military bases, those paying for the cleanup often argue for less exhaustive cleanup, to industrial standards. They argue, “Why waste resources cleaning up a parcel of land so it can be a day-care center when it’s going to be used as an airport runway?” As a result, decisions on cleanup standards are influenced by arguments over long-term vs. short-term future use, and even over who should decide upon land use and cleanup standards. If cleanup is not “complete,” institutional controls such as deed restrictions or access control such as fences and signs may be required to protect the public. Finding an agency able and willing to enforce those controls, for the duration of the risk, can be a major challenge.

Furthermore, at a surprisingly large number of sites, the soil cleanup is actually determined by the actual or potential leaching of soil contamination into underlying groundwater supplies. In such cases, the surface land use has little impact upon soil cleanup standards. Surface water, the third major polluted medium at federal facilities, is subject to continuing, major variations in levels of contamination. Consequently, cleanup goals are generally based upon the rate at which soil, sediment, or groundwater contamination enters the surface water, not upon concentrations in the rivers, lakes, and oceans.

RISK

Virtually everyone agrees that cleanup programs should be designed to reduce risk, but risk assessment methodology is highly controversial. Some, especially polluters, use the evaluation of risk to avoid what they consider wasteful environmental expenditures. Others, particularly people living near, downwind, or

downstream from polluted or polluting properties, consider risk studies to be polluters' ploy to justify continued hazardous releases or to avoid cleanup obligations.

The Principles of FFERDC contain a section that carefully attempts to balance the concerns of federal regulated agencies and the people at risk from their contamination. It points out both the benefits and disadvantages of existing approaches to risk evaluation. FFERDC makes the following key points:

- The accuracy of risk evaluations are limited by subjective assumptions and uncertain data, so assumptions should be communicated up front.
- Stakeholders should be involved in conducting and utilizing risk analysis.
- All potential health effects, not just cancer, should be considered.
- Risk evaluations should consider the impact of contamination on all groups, including communities of color, pregnant women, children, the elderly, and on-site workers.
- It makes sense to categorize risk by general categories of risk, rather than provide ordinal (numerical) rankings.
- Regulated agencies should not unilaterally use risk assessments to avoid legal cleanup requirements.

FFERDC, in its Principles and Final Report, also narrowed the differences between representatives of communities and regulated agencies on the role of land use plans in setting cleanup goals, but one significant land use issue remains: What happens if the community or owner decides to change, in twenty to thirty years, from a use requiring limited cleanup levels to one requiring a more complete response? Who pays for the additional work? Thus far, the parties have only agreed that agencies should disclose their policies on "coming back" up front. The Defense Department has actually developed a policy saying it won't come back to satisfy the cleanup requirements of new land uses.

REMEDY SELECTION

The most visible decision at the cleanup of a federal facility, as well as most other major contamination sites, is remedy selection. From a list of alternatives, defined during the remedial investigation and feasibility study, the regulated and regulating agencies must agree on one or more approaches or technologies to remediate or otherwise respond to the contamination. That selection is the heart of the record of decision, which may be modified but generally guides the remainder of work for the site or sites covered by the agreement. While a record of decision can cover an entire facility, it may also be broken up into operable units representing parcels, contamination sites, or even problems (such as groundwater contamination).

Under the National Contingency Plan, there are nine criteria used to evaluate alternative remedies. The goal is to find an alternative that meets all nine criteria for the standards adopted at the facility. However, sometimes a remedy falls short, but it's still accepted as the most practical approach. The "no action" alternative is always evaluated.

The first two criteria are statutory requirements — that is, they are written explicitly by Congress into cleanup law:

1. Overall protection of human health and the environment. This means that contamination left on site must not pose unacceptable risks to the environment or to the people likely to be exposed.
2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs). As mentioned above, ARARs are other federal or state environmental laws or rules that might govern the cleanup. For example, the Clean Air Act may limit air emissions from a treatment plant constructed to remediate contaminated groundwater. Often the determination that a non-remediation ARAR is applicable is a controversial decision.

The next five requirements are all called “balancing criteria”:

3. Long-term effectiveness.
4. Reduction of toxicity, mobility, or volume of contaminants.
5. Short-term effectiveness. This refers, for example, to the need to protect public health and site workers during the construction of a remedy. Using this criteria, remedies that disrupt or destroy the natural environment—such as the excavation of the habitat or an endangered species—may be rejected.
6. Implementability. This includes the technical feasibility of a remedy, as well as administrative constraints.
7. Cost. The cost, not only of construction, but of long-term operation and maintenance of each alternative is estimated. Decision-makers consider how cost-effective each option is, and they may reject proposals that are prohibitively expensive. However, the regulated agency may not pre-determine a remedy by declaring a budget level in advance. The determination of *whether* and *how* to clean a site should occur independently of the decision *when* to carry out the remedy.

The above seven criteria leave plenty of room for interpretation, especially since criteria may work against each other. However, the last two “modifying criteria” ensure that regulated agencies do more than plug numbers into presumptive models:

8. State Acceptance. Obviously this criterion is moot where a state agency is making the decision.
9. Community acceptance. Even if members of the affected community cannot convince decision-makers that a particular remedy would be more protective or more effective, they can still use the argument that it would be more acceptable.

SETTING PRIORITIES

When the decision has been made to carry out studies or remediate a site, the regulated agency must determine whether it has funds available to carry out the activity in a given year. Given the large and varied demands for cleanup funding against a background of constrained budgets, the establishment of funding priorities, both in planning cleanup budgets and allocating actual appropriations, is a difficult exercise. Developing a system that is supported by all stakeholder groups was a principal objective of FFERDC when it was first formed.

Priority-setting means determining the order in which to carry out cleanup activities, not whether to clean up sites. Recognition of this fact is important to communities and regulators. Accepting information that may result in a low priority activity does not mean that a site in their area will be wiped off the map.

Risk to human health (and sometimes the environment) is the principal factor in setting priorities. The Departments of Energy and Defense have developed tools for comparing risks or the risk reduction impact of cleanup activity among sites and among facilities. Like the scoring used by EPA to put properties on the NPL and risk assessments, comparative risk models look at contamination, receptors, and the pathways between them. But FFERDC strongly recommended that there not be numerical comparisons. Risk comparisons, as well as the priorities established based upon those evaluations, should lump sites into general categories.

Risk is the most obvious factor used to set priorities, but many other factors must also be considered. FFERDC listed the following:

- a. cultural, social, and economic factors, including environmental justice considerations;

- b. potential or future use of the facility, its effect on the local communities' economy, vitality, livability, and environmental quality;
- c. the ecological impacts of the contamination and the proposed action to address it (in those instances where protection of the environment is not used as a primary basis for establishing cleanup funding priorities);
- d. intrinsic and future value of affected resources (e.g., ground water and fisheries)
- e. pragmatic considerations such as the availability and continuity of skilled workers, labs, [and] cleanup contractors to complete the activity or the feasibility of carrying out the activity in relation to other activities at the facility (i.e., capacity and work flow logic), or both;
- f. the overall cost and cost effectiveness of a proposed activity and especially the relative risk reduction value obtained by the proposed expenditure [that is, the per-dollar estimated reduction in risk];
- g. making land available for other uses, recognizing that land uses may change over time;
- h. the importance of reducing infrastructure costs (e.g., \$300 million is spent each year to monitor tanks at Hanford and \$130 million is spent each year at Rocky Flats to safeguard special nuclear material);
- i. the availability of new or innovative technologies that might accelerate or improve the ability to achieve a permanent remedy;

- j. Native American treaties, statutory rights (e.g., American Indian Religious Freedom Act), and trust responsibilities;
- k. regulatory requirements and the acceptability of the proposed action to regulators and other stakeholders;
- l. supporting accomplishment of other high priority agency objectives;
- m. life-cycle costs; and
- n. actual and anticipated funding levels (the Congressional budget appropriation, OMB apportionment, allotments of funds to agencies or departments and the facilities; and out year funding targets).

Depending upon the situation, factors other than risk can influence the priority level of a site or project and even override the risk characterization.

SHORTFALLS



SHORTFALLS

There is an inherent tension between regulators and regulated agencies. The regulated view the public as taxpayers and as the beneficiaries of their primary functions, such as the protection of national security interests. In cleanup, these agencies have a top-down interest. That is, they must meet their national cleanup obligations with budgets which are generally not sufficient to meet all the requirements for which they have responsibility. Since they expect funds to be inadequate, they sometimes seek to weaken their environmental requirements, often drawing criticism from regulators and public stakeholders. The regulated agencies draw less fire, however, when they attempt to use priority-setting techniques, such as those discussed above, to allocate their budgets in times of shortfall.

The regulators, on the other hand, primarily have a bottom-up interest. They want to ensure that there are enough resources to meet requirements developed for each site, facility, or activity. They expect the regulated agencies, like other responsible parties, to come up with the money to meet their obligations. The regulators rely upon cleanup laws and regulations. When necessary, they use the threat of enforcement to force action at each locality.

One of the principal challenges to the FFERDC — as well as to other bodies considering ways to improve federal facilities cleanup — was to attempt to resolve this conflict: Do requirements drive cleanup budgets? Or do cleanup budgets determine requirements?

The essence of the FFERDC response is that wherever possible, cleanup should be seen as a partnership among the various representatives of the public: Regulated agencies, regulators, and public stakeholders. If everyone is working together to develop standards and remedies, they're in a position to adjust their programs should new requirements be discovered or if funding turns out to be inadequate. It said, "stakeholder confidence in agency cleanup programs is contingent upon continued progress on cleanup and an understanding that an agency

has made every effort to plan for, seek funding for, and execute its cleanup obligations.”

Priority-setting mechanisms, as discussed above, address all sites whether or not they are covered by negotiated cleanup agreements. They work best when all parties take part in the assignment of priorities. Even then, however, the results may conflict with legally sanctioned agreements.

FFERDC also defined and described three types of schedule goals: Project end dates, out-year milestones, and near-term milestones. None should be changed without the agreement of the regulated and regulatory agencies, in consultation with public stakeholders. Disagreements over such changes should be subject to the dispute resolution mechanism entailed in the agreement.

When the parties first negotiate or re-negotiate a cleanup agreement, they should establish **project end dates** that represent goals for completing cleanup for a facility or major portions thereof. Particularly for large cleanup programs, these dates embody a great deal of uncertainty, but agreement upon them aids in the establishment of the two types of milestones.

Out-year milestones represent schedules for future activity that is beyond the budget planning year. That is, in fiscal year 1998, any important activity expected to take place after fiscal year 2000 is an out-year milestone. These agreed upon goals are expected to influence budget planning by the regulated agency.

Near-term milestones, however, are associated with budgets undergoing planning, budgeting, or execution. (See Chapter 3, The Budget Cycle). That is, wherever possible, budgets should be sufficient to meet near-term milestones. Each year, there may be out-year milestones that roll into near-term milestones.

To deal in advance with situations in which funding appears inadequate to the milestones written into such agreements, FFERDC endorsed a process known to some as “rolling milestones.”¹² This process links decisions about appropriations shortfalls, which become apparent in the current (execution) fiscal year, with budget-building shortfalls, which emerge during the budget planning year.

APPROPRIATIONS SHORTFALLS

In allocating funding shortfalls down the chain of command—that is, after Appropriations legislation has been enacted—regulated agencies should follow the “flexible fair share” method. This approach, included in FFERDC’s 1993 *Interim Report*, drew varied interpretations as well as mixed reviews. As clarified in the *Final Report*, it says: “the original proportion in the proposed cleanup budget should be the starting point for allocating appropriations shortfalls at [the] various levels assuming that the budget was built: a) in consultation with stakeholders; b) in consideration of regulatory agreements; and c) in consideration of risk plus other factors.” FFERDC does not recommend a single, cookie-cutter formula, but it offers suggestions for making flexible fair-share work.

As soon as project managers know what funds will be available during the current fiscal year (hopefully near the beginning of that year), the parties should determine if planned work can be accomplished with those funds. If there isn’t enough money, they should first try to reorganize cleanup activity to avoid missing near-term milestones and also implement cost-saving measures. That is, the first objective is to keep the milestones, even though the local budget is less than originally thought necessary to meet the agreed upon schedule.

¹²FFERDC declined to use that term, however, because some people/agencies use “rolling milestones” to describe other processes.

If a near-term milestone is still out of reach, the parties should negotiate its possible extension. Changing the schedule to meet budget limitations, however, is not automatic. Both sides retain their legal authorities—enforcement and dispute resolution—to advance their positions should negotiations be unsuccessful.

BUDGET-BUILDING SHORTFALLS

While dealing with the immediate problem of near-term milestones, the parties also need to look ahead. Out-year milestones, written into the agreements but beyond the budget planning year, are potential near-term milestones. That is, any activity or deliverable document scheduled to take place in fiscal year 2000 must either become a near-term milestone when fiscal year 1998 begins or be pushed back (delayed) in the cleanup agreement.

FFERDC recommended that all such milestones, as they “roll” from out years to the near term, should be reviewed in light of the cleanup progress (including the status of existing near-term milestones), budget targets, and agreed-upon priorities. Those milestones should remain in force unless all parties, in consultation with the public, agree. If work is falling behind schedule, then the agreement stretches without breaking.

As with existing near-term milestones, all parties should attempt to find ways to keep the schedule within budget targets, and they retain their legal authorities should they not reach agreement. If the parties reach agreement, then the regulated agency’s project manager will submit a budget to headquarters reflecting that agreement.

If they don't agree, then the regulated agency should disclose, to the extent allowed by law, the shortfall. That is, at every step up the budget-building chain of command, agencies should strive to document discrepancies between the funds required to meet near-term milestones for the planning year and the budget targets imposed from above. Each agency or department is expected to develop its own approach to making this disclosure.

REDUCING CONFLICT

The priority-setting, milestone consultation, and flexible fair-share approaches described by FFERDC are not foolproof. There will be cases in which the parties resort to the courts to work out disputes. However, to the surprise of many long-time participants in federal facilities cleanup, the FFERDC strategy usually works. There are many instances in which members of the affected public have determined that proposed remedies were too expensive and supported cheaper alternatives. Regulators have shown themselves willing to renegotiate the schedules in cleanup agreements. Regulated agencies have “found” money when Congressional decisions appeared to apply the brakes to major cleanup programs.

This new era of reduced conflict is based upon FFERDC's other key contributions to the cleanup process. The parties should work, as much as possible, as partners in furtherance of a common goal. Public stakeholders, although they hold minimal direct statutory authority over cleanup decisions, are essential players.

There is a risk, of course, that Congressional and executive branch bean-counters will test the envelope. If the parties to cleanup figure out how to deal amicably with budget cuts, that could invite larger reductions. FFERDC warns, however, that the growing level of trust surrounding federal facilities cleanup depends upon stable, predict-

able levels of funding. Large or erratic cuts in expected funding could return the process to the types of conflict that predate the Committee's work.

Unlike the recommendations of countless other federal advisory committees, the FFERDC recommendations on milestones and shortfalls are not simply sitting on shelves, collecting dust. Based on the FFERDC report, in March, 1997 the Navy and U.S. EPA released new model language to be used in the development of all federal facility agreements governing EPA-supervised Navy cleanup projects. EPA expects to negotiate similar language with the other armed services.



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to the Cleanup of Federal Facilities

STAKEHOLDER INVOLVEMENT/ PARTNERING



STAKEHOLDER INVOLVEMENT/PARTNERING

Every step along the cleanup path is an interplay among the regulated agency (and other responsible parties), regulators, and public stakeholders. There is a natural tension between the regulated agencies, which in most cases caused or allowed pollution to take place, and regulators and the public, who tend to want to maximize cleanup. The cleanup laws, written primarily to address the cleanup of property owned or under the responsibility of private parties, assume an adversarial relationship among the parties. As implemented, each step is accompanied by lengthy documentation, and each stakeholder — especially, its lawyers — carefully reviews and comments on documents generated by the others.

At national security-related federal facilities, this relationship was particularly adversarial. The public and regulators mistrusted the Departments of Defense and Energy because of their sometimes secretive, above-outside-scrutiny habits. Energy and Defense officials believed that many of their critics had other agendas, more related to debates over national security than to the environment. Thus, despite the fact that all parties ostensibly represented the public interest, cleanup, even at facilities which pose massive threats to human health and the environment, was caught in gridlock.

FFERDC was established to break that gridlock, and it found the key: Early, continuing, frequent, genuine public involvement. Not only are public stakeholders more involved, but where public participation programs are working well, all parties tend to be more satisfied with progress. In fact, the sunshine of community support warms up the entire process. With public backing, regulators and regulated agencies are more willing to work as team members together, not litigation-prone adversaries.

In recommending a new approach to public involvement, FFERDC rejected the existing, statute-based models as insufficient. Under the old way, which members of the Committee labeled “decide-announce-defend,” agencies worked out their differences and published a proposal or report, for public comment, late in the decision-making process. Arriving late on the scene, the already suspicious public was treated to a public relations show by the already embattled decision-makers, who viewed requests for information as burdensome. Frequently, public stakeholders responded by simply attempting to block proposals developed without their consent.

INFORMATION SHARING

The best way to work with the public, FFERDC found, was to share information as early in the process as practical, and to continue throughout the life of the project. If the information was incomplete, or the conclusions were in draft form, then public stakeholders were expected to treat it as such. Experience shows that the public wants information whenever it feels it has been restricted, so it makes sense to err on the side of sharing.

In its final report, FFERDC recognized that a special effort is often needed to identify and involve public stakeholders in communities of color and other low-income communities. Even where there is no proof that such people are disproportionately affected by pollution, special efforts may be required to ensure that their interests are represented.

In addition, local governments need to be involved, both as representatives of the public and as conduits for information. This is particularly important where facilities are closing, since local governments exercise land use planning authority and are frequently the recipients of closing bases and other surplus federal properties.

Agency personnel who share information readily reap two benefits: First, informed public stakeholders can play a much more construc-

tive role in the decision-making process. Second, openness breeds trust. That is, if an agency is willing to share its thoughts and even to air its dirty linen, the public is more willing to accept program changes or claims of reduced risk.

ADVISORY BOARDS

By far, the most recognizable success of the FFERDC effort has been the establishment of Site-Specific Advisory Boards (SSABs) — known as Restoration Advisory Boards (RABs) at most Defense Department cleanup projects and by a variety of names at Energy Department facilities. SSABs and RABs provide interested members of the public with continuing, focused interaction with both regulated and regulatory agencies. They enhance the flow of information and ideas, and they give members of the public the opportunity to influence decisions long before they are made.

Where SSABs and RABs include all segments of affected communities, including the most vocal critics of the federal agency, and the agency willingly shares its information, the Boards are generally successful. Communities are usually more satisfied than before, since cleanup programs can now be shaped to meet concerns identified by the community, not just by experts and officials from outside the community. For example, at the Navy Supply Corps School in Athens, Georgia, the Navy installed a horizontal well to recover fuel from groundwater when it learned that nearby property owners did not want vertical wells drilled on their property.

It also turns out that as concerned taxpayers, members of the public are usually willing to pursue cost-effective cleanup strategies. At one Department of Energy facility, in Fernald (Ohio), the Fernald Citizens Task Force is credited with saving the Energy Department more than a billion dollars by recommending that waste be contained on site. At numerous Defense Department facilities, such as Langley Air Force Base, Virginia and Whidbey Island Naval Air Station, Washington, RABs have proposed or endorsed less expensive, but still protective approaches to cleanup.

By definition, the advisory boards do not exercise decision-making authority. They are not elected or appointed to do so, so they can represent a wide range of viewpoints. They are not legally liable for the actions of statutory decision-makers. But as people who know the facility and must live with the results of the cleanup, they have plenty to offer. Effective community representatives don't attempt to oversee every last detail of the cleanup programs. They focus on key decisions: whether, how, and when to cleanup.

By participating in the advisory boards, community activists gain the information they need, access to officials, and the credibility that they need to influence the outcome even if their advice is rejected. Some of the most successful community groups around the country use normal political processes to “appeal” important decisions with which they disagree. When they are seriously concerned about decisions, they go to the public, to the press, and to elected officials, the way activists have always organized around such issues. Participation on the advisory boards makes them more effective. Equally important, when the advisory board process is working, they rarely feel the need to go beyond it.

It is important, however, not to restrict the public participation process to the selected few members of the advisory boards. Agencies are still required to design and operate (and benefit from) community relations programs, which typically include newsletters, public meetings, and other tools for communicating with the public at large. In fact, at facilities with successful advisory boards, agencies sometimes rely upon community members of those boards to lead the community relations process.

There are now about 250 SSABs in place, primarily at Defense Department properties. Some work very well. Others are still handicapped by mistrust. It is difficult, however, to find a location where the process is in worse shape than it was when the boards were first formed. Where there are problems, resolving them is sometimes a matter of implementing agreed upon policy—adding a broader range of members, for example. At some locations personal distrust still stymies progress.

CAPACITY BUILDING

In its final report, FFERDC suggested several mechanisms to build capacity, among affected populations, to help overcome remaining problems, not only with advisory boards, but with the cleanup process as a whole. For all parties to sit at the cleanup decision-making table as equals, they need to understand the process and either have expertise or access to expertise. In fact, that's why we prepared this guide. For public participation to meet its full potential, particularly in communities of color, more training programs are needed. For advisory boards to play a fully constructive role, all of them need access, should they deem it necessary, to their own independent technical consultants. Local governments also need help, particularly where they provide services to or anticipate assuming jurisdiction over federal facilities. If Indian tribes are to exercise the regulatory role that the U.S. government finally acknowledges, they need their own structures and expertise. Even state governments require the funding provided by the DSMOA program, if they are not to rely on adversarial enforcement actions to oversee federal facilities cleanup.

Full understanding of the issues, by all parties, does not guarantee a smooth cleanup decision-making process. It does not guarantee an absence of conflict; it shouldn't. Rather, it contributes to the effectiveness of the partnership, narrows the areas of disagreement, and helps ensure that energy spent on working out such disagreement is properly spent.

THE POLITICAL PROCESS

The long and complex process of determining requirements, budgets, and technologies is an intensely political process. But the FFERDC ignored the legislative and electoral aspects of cleanup because federal agencies and their advisory committees are not supposed to lobby or participate in electoral campaigns. Most of this guide has focused upon how public stakeholders can influence cleanup decisions after Congress and the President have determined overall funding levels, but effective public participants in the process usually recognize and integrate the political role.

The decision to require environmental cleanup at federal facilities was a political decision. So was the decision that cleanup programs needed to be cut to help reduce the federal budget deficit. Support for cleanup programs, among thousands of other federal programs, depends both upon the way those programs are managed and the degree to which elected officials feel that their constituents want cleanup to occur. Public stakeholders, as citizens, therefore can shape the national commitment to cleanup in ways that government officials cannot.

FFERDC has warned, however, that demands to fund specific cleanup projects — through Congressional earmarks — could be counterproductive. Using powerful members of Congress to circumvent a priority-setting structure that is still being constructed, painstakingly, by all stakeholder constituencies could undermine the growing trust in the system.



AFTERWORD: LESSONS LEARNED

The new approach to federal facilities cleanup is having an impact in itself, since the long-range cost of remediation at all federal agencies will run in the hundreds of billions of dollars. If it's better spent, the government can save money **and** do a better job of protecting human health and the environment. More important, however, the government and public stakeholders in the process are pioneering a new way of conducting business: applying democratic principles to decisions that are difficult both because resources are limited and because the technical issues are complex. To the degree that this approach is recognized as successful, it will be adopted in other arenas. Already the EPA-initiated program for cleaning and revitalizing “brownfields” — underutilized, contaminated industrial property — is learning from federal facilities cleanup. The federal program for nuclear power plant decommissioning and the civilian side of the Superfund program are establishing site-specific advisory boards as well. And the armed services are expanding the scope of selected RABs at active military bases to oversee environmental compliance and pollution prevention activities.

The same approach may prove valuable in other contentious policy areas, particularly where everyone purports to have the same general goals — such as cleanup. Give public representatives a seat at the table, with access to information and expertise, and create structures that encourage partnership. Conflict won't disappear. But fewer resources will be wasted fighting battles that need not be fought.

When the government gives people who are directly affected by government policies the opportunity to influence those policies directly — even where there is a history of stonewalling, gridlock, or deception — people will devote their time and ingenuity to genuine problem-solving. Stakeholder involvement not only makes happier stakeholders. When public stakeholders understand what is going on, and why, it brings better decisions.

ACRONYMS

- A&E:** architecture and engineering
- ARARs:** applicable or relevant and appropriate requirements
- CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act
- DSMOA:** Defense State Memoranda of Agreement
- EE/CA:** engineering evaluation/cost analysis
- EPA:** Environmental Protection Agency
- FFA:** federal facilities agreement
- FFERDC:** Federal Facilities Environmental Restoration Dialogue Committee
- FY:** fiscal year
- GOCO:** government-owned contractor operated
- HRS:** Hazard Ranking System
- MTBE:** Methyl Tertiary Butyl Ether
- NASA:** National Aeronautic and Space Administration
- NavFac:** Navy Facilities Engineering Command
- NPL:** National Priorities List
- OMB:** Office of Management and Budget
- PA/SI:** preliminary assessment and site inspection
- PCB:** polychlorinated biphenyl
- RABs:** restoration advisory boards
- RCRA:** Resource Conservation and Recovery Act
- RI/FS:** remedial investigation/feasibility study
- SSABs:** site-specific advisory boards
- TCE:** trichloroethylene
- TERC:** total environmental response contract
- UXO:** unexploded ordnance

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