Return on Investment

The Department of Defense and the nation have made a significant investment in environmental restoration of defense installations and formerly used defense sites. The current momentum of the program must be maintained to ensure that past and future investments, both in terms of dollars and lessons learned, can continue to provide maximum return. It is important to look at where the program has been and the lessons and perspective that the history of the program can teach us. We are all much wiser today because of these lessons learned.

Looking back at where the program has been and how it has matured, particularly regarding past barriers to success and some of the lessons learned, the installation experience stories that follow this section provide additional insight into DoD's environmental restoration program and reinforce the importance of maintaining the momentum that the program has achieved over the past several years.

The Beginnings of the Nation's and DoD's Environmental Restoration Program

Although the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as "Superfund," was not directly applicable to Federal facilities when enacted in 1980, it provided the impetus for DoD's environmental restoration program. When DoD installations began addressing contaminated sites in the mid- to late-1970s, efforts were generally limited to identifying hazardous waste disposal sites and mitigating or controlling known contamination.

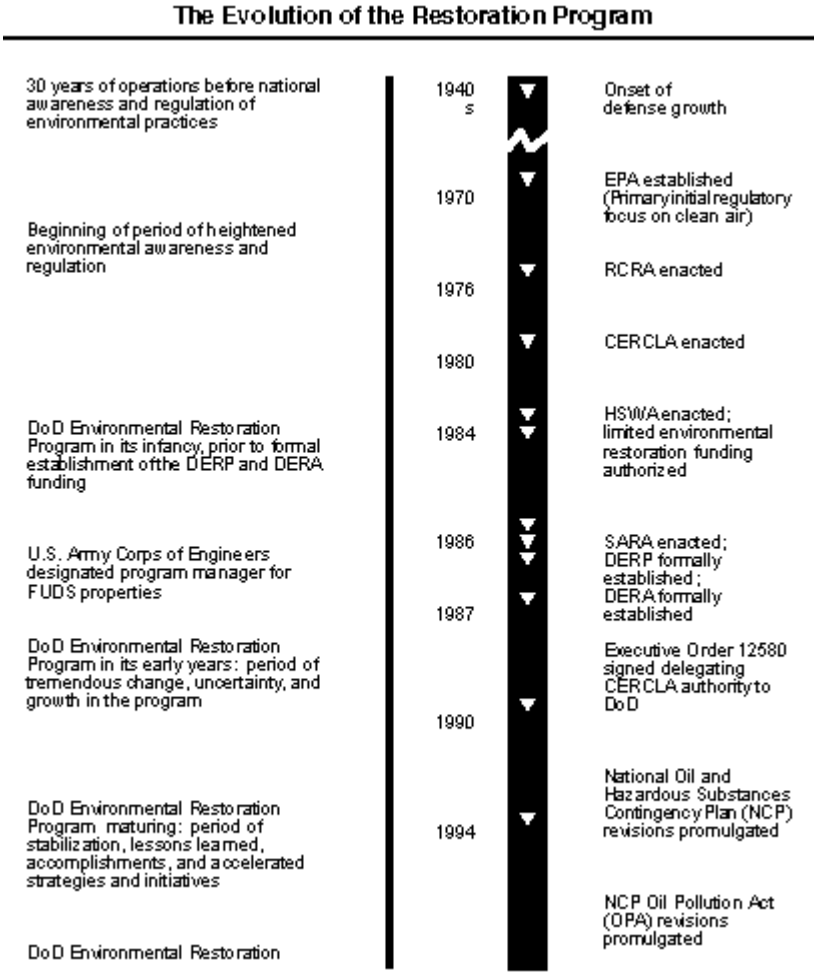
In these early years, DoD found itself facing two distinct challenges: (1) understanding the regulatory and technical uncertainties and complexities of environmental assessment, and (2) anticipating congressional intent and legislative action to formally establish a Defense Environmental Restoration Program. It was not until the FY84 Defense Appropriations Act was passed that Congress provided funding for the program. Line-item appropriations continued in FY85 and FY86. During this period, DoD continued to focus on identifying sites, mitigating imminent threats, and gathering information for CERCLA-required health-based risk assessments.

The Defense Environmental Restoration Program is Formally Established

In October 1986, Congress passed the Superfund Amendments and Reauthorization Act (SARA), which authorized the Secretary of Defense to carry out the Defense Environmental Restoration Program under the Department's jurisdiction and formally established the Defense Environmental Restoration Account (DERA). Significant impacts of SARA included the following:

- CERCLA and SARA became statutory requirements for DoD.
- Terminology and procedures for the program were modified to match those provided in the National Oil and Hazardous Substances Contingency Plan (NCP).
- EPA and the states were given broad power to review, comment, and, in some instances, approve documents and decisions.
- Specific reporting requirements, schedules for Federal facilities to complete certain actions, and program and project timetables were established.
- Federal facilities became subject to listing on the National Priorities List (NPL).
- Interagency Agreements (IAG) between EPA and Federal facilities on the NPL were mandated, with state participation strongly encouraged.

While SARA granted authority and recognized funding to DoD's environmental restoration program, it also brought additional changes and uncertainty, especially regarding NPL listing, IAGs, and the relationship among DoD, EPA, and the states.



The Environmental Restoration Program on the Learning Curve

In the early- to mid-1980s, DoD's environmental restoration program was in its infancy, as was the nation's Superfund program. Little guidance was available, and few, if any,

real lessons learned could be shared with DoD or others in the regulated community. As EPA began to promulgate rules and regulations to implement CERCLA, and as program activities began, the many uncertainties associated with environmental restoration began to emerge. These uncertainties include issues related to site investigation and characterization, risk assessment, risk communication, cleanup standards, cleanup remedies, available technology, and cost. As these issues and factors were scrutinized and debated, they became barriers to effective and efficient site investigation and cleanup.

For NPL sites, SARA requires that DoD enter into an IAG with EPA within 180 days of completing the remedial investigation and feasibility study. DoD established a policy to enter into agreements as soon as possible after a site was placed on the NPL. While there were positive aspects to this approach, many agreements and enforceable schedules were established without a complete understanding of the cost or technical implications of the agreement. In fact, little was known about most of the sites at this early stage of the restoration process.

Then, as now, the goals of the environmental restoration effort were clear: to protect human health and the environment. This protection generally took the form of acting as quickly as possible to mitigate the spread or impact of contamination once it was identified. To complete these actions quickly, DoD and the regulatory community were sometimes forced to enter into agreements rapidly.

DoD and the regulatory community came to realize that the extent of contamination problems and the effectiveness of available environmental technologies had been greatly misunderstood. Both regulatory agencies and the regulated parties alike characterized the first 10 years after passage of CERCLA as "the learning curve" years. While there were real accomplishments and successes, and contaminated DoD sites were remediated during this period, environmental restoration did not proceed systematically from "dirty" to "clean."

Making the Investment in a Mature Program

In recent years, several improvements have been made to the environmental restoration program. The results of recent efforts creating partnerships, developing flexible contracting mechanisms, accelerating cleanup, involving communities, improving decision-making, communicating risk, and developing more effective environmental technologies are featured in this report.

Another necessary program improvement has only recently been developed risk-basedprioritization on a national scale. This recent initiative to improve the process, developed by both DoD and portions of the regulatory community, is based on both accepted methodologies and the lessons DoD has learned in the past decade about investigating and characterizing the nature and extent of environmental contamination at sites across the nation. By using a consistent risk-based approach to categorize sites, DoD is better able to protect those people who are potentially most affected by the legacy of past practices, both inside and outside military installations.

DoD recognizes that risk-based prioritization alone cannot achieve the kind of response that Congress and the public expect. Nevertheless, it is an integral, perhaps critical, part of DoD's overall strategy. DoD must continue to reach out to communities affected by its past activities, communicate risk and uncertainties to the public, partner with its fellow governmental agencies to solve problems collectively, and invest in better and less costly environmental technologies. These outreach efforts and initiatives will ensure that the past 15 years of investment in protecting the nation's citizens and natural resources continues to yields a return that can be enjoyed now and in the future.

"At DoD, we are turning the corner and getting the job of environmental cleanup done. The reason why, I believe, is that we have one of the best managed cleanup programs both in and out of the Federal government."

--*Patricia A. Rivers, P.E.*, Assistant Deputy Under Secretary of Defense (Environmental Cleanup)

Looking back at where the program has been and how it has matured, particularly regarding past barriers to success and some of the lessons learned, the following installation experience stories provide a better overall understanding of DoD's program and emphasize the importance of maintaining the momentum that the program has achieved over the past several years. Other stories in this report reinforce these themes and provide other real-life examples of lessons learned and successes of the program.