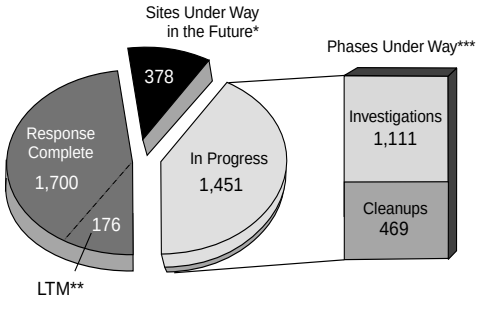
One of the most significant challenges in our cleanup program is to ensure the use of sound science and the latest technology while maintaining an open dialogue with regulators and the public. Use of the latest toxicological profiles and reasonable risk assessment assumptions regarding exposures is critical to ensuring cleanup decisions that are both protective and make the best use of taxpayers' funds. Effective risk communication is the key to bridging the gap between the use of sound science and its acceptance by the public.

Robert B. Pirie, Jr.
Assistant Secretary of the Navy
(Installations and Environment)

Restoration Status and Progress

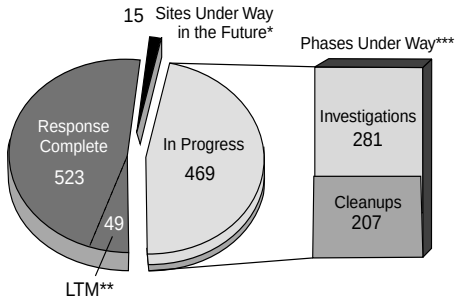
The Department of the Navy (DON) continues to make substantial progress toward completing its environmental restoration program in the face of unusual and complex challenges. Some of those challenges are directly associated with the DON mission and related operational factors. Most Navy and Marine Corps installations are located in coastal areas, which generally have environmentally sensitive habitats and populous surrounding communities. The heavily industrialized operations that typically exist at naval installations to support ships and aircraft add to the complexity of cleanup. Installations slated for closure or realignment also have a significant impact on the program, particularly in the areas of land reuse and fast-track cleanup.

Active Site Status as of September 30, 1999



Total Sites: 3,529

BRAC Site Status as of September 30, 1999



Total Sites: 1,007

*Includes sites with future Preliminary Assessment starts planned and cleanup sites that are between phases.
**LTM is a subset of Response Complete.
***Phases Under Way may not add up to Sites-in-Progress because some sites have multiple phases under way.

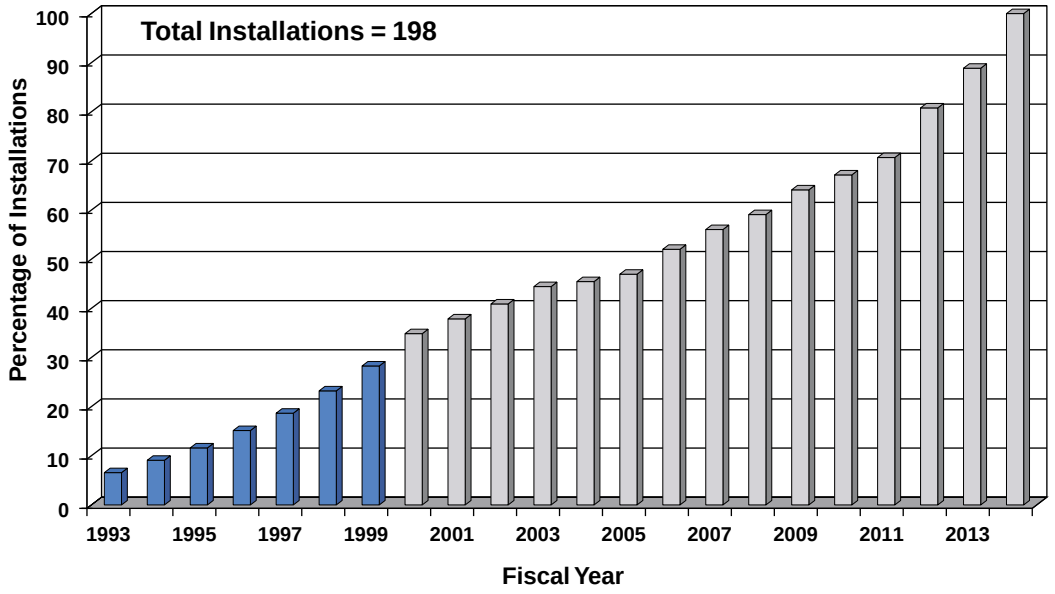
In FY99...

- Restoration activities are planned or under way at 2,313 sites.
- The Navy completed 33 interim actions at active-installation sites, bringing the total number of completed interim actions at such sites to 882 at 575 sites.
- Forty-seven active-installation sites were brought to Response Complete (RC) status through cleanup activities; 124 active-installation sites were determined to be RC or to require no further action (NFA) based on appropriate investigation and analysis.
- Analysis or cleanup actions are in progress at 1,829 remaining active-installation sites. Thirty-eight percent, or 687, of these sites are categorized as high relative-risk.
- Fifty-four Base Realignment and Closure (BRAC) sites were brought to RC status through cleanup activities, and 111 BRAC sites were determined to be RC or to require NFA based on appropriate investigation and analysis.
- The Navy completed 109 interim actions at BRAC sites, bringing the total number of interim actions completed at BRAC sites to 481 at 277 sites.

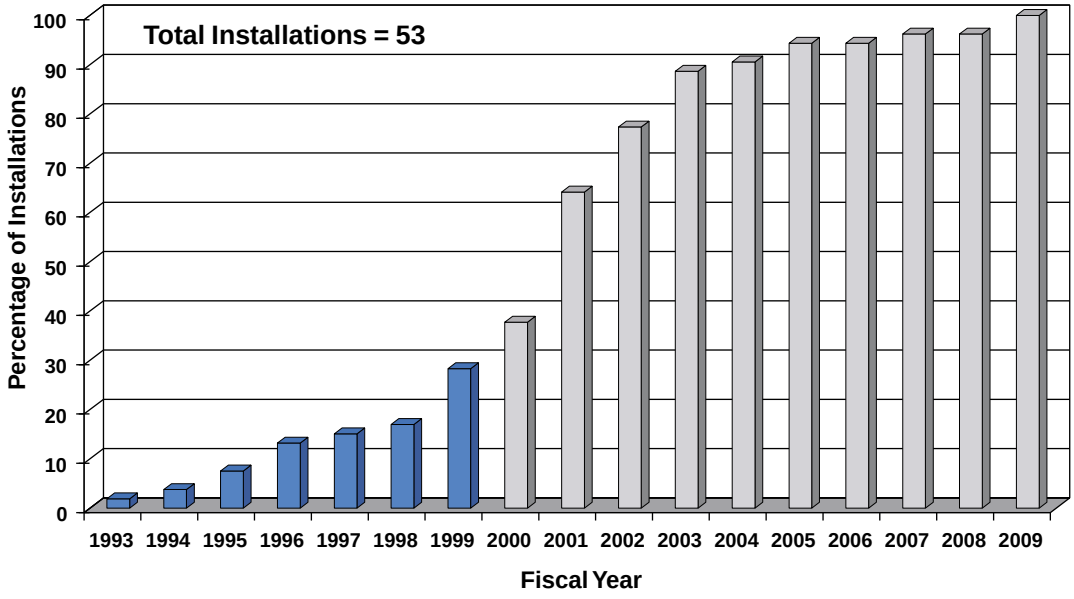
Through FY99...

- To date, DON has identified 4,536 potentially contaminated sites at 242 installations. Of these sites, 2,223 require NFA.
- The Navy has completed final remedial actions at 674 sites. Of these sites, 160 require remedial action operations.
- By the end of FY99, 1,700 of the 3,529 potentially contaminated active sites at Navy and Marine Corps installations had been brought to RC status through cleanup actions or verification that no cleanup action was required.
- The BRAC 1988, 1991, 1993, and 1995 lists include 53 Navy and Marine Corps installations.
- Navy installations have formed 41 BRAC cleanup teams to support cleanup. Local Redevelopment Authorities have completed reuse plans at 42 Navy BRAC installations. Reuse plans have been initiated at six additional installations.
- Environmental Baseline Surveys and BRAC Cleanup Plans have been completed for all BRAC fast-track installations. At the end of FY99, 89 percent of property at Navy's BRAC fast-track sites was environmentally suitable for transfer.
- Of the 1,007 Navy BRAC sites, 523 are RC.

Active Installations Achieving Final Remedy in Place or Response Complete (cumulative, FY93 through completion)



BRAC Installations Achieving Final Remedy in Place or Response Complete (cumulative, FY93 through completion)



Goals and Priorities

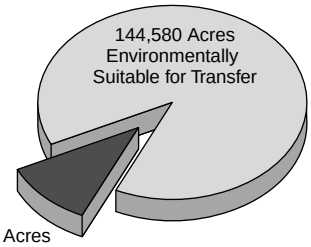
DON's program goals and priorities are based principally on a risk management approach. In this approach, Navy considers site risk, as assigned through DoD's Relative-Risk Site Evaluation framework, along with other risk factors, including —

- Reuse (for BRAC properties)
- Legal requirements
- Economic considerations
- Stakeholder concerns.

At active and closing installations, the cost to complete the environmental restoration program for the Navy and the Marine Corps is now estimated at approximately $4.13 billion (not including program management costs). This amount, plus the $1.7 billion spent from FY96 to FY99, is $1.8 billion less than the $7.63 billion cost-to-complete projected at the beginning of FY96.

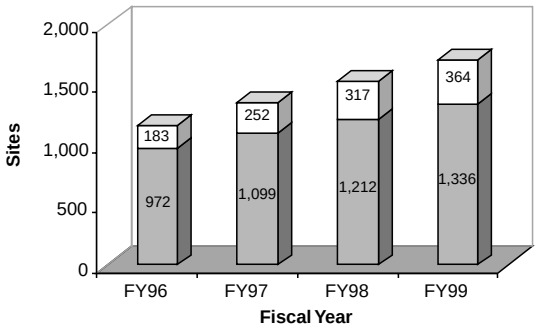
Cleanup at Navy's active-installation sites is funded by the Navy's Environmental Restoration Account (ER, Navy). To facilitate completion of its environmental restoration program, DON endorses a stable-funding approach that is consistent with achieving the restoration goals outlined in the Defense Planning Guidance.

Environmental Condition of BRAC Property

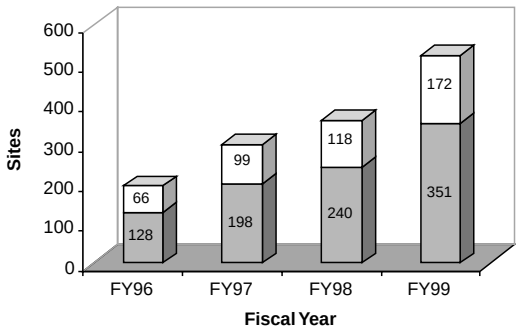


DON's goal is to spend at least 70 percent of its total program budget on high relative-risk sites. This goal puts the proper emphasis on relative-risk reduction while allowing appropriate flexibility for addressing stakeholder concerns and other risk management considerations.

Active Sites with Response Complete*



BRAC Sites with Response Complete*

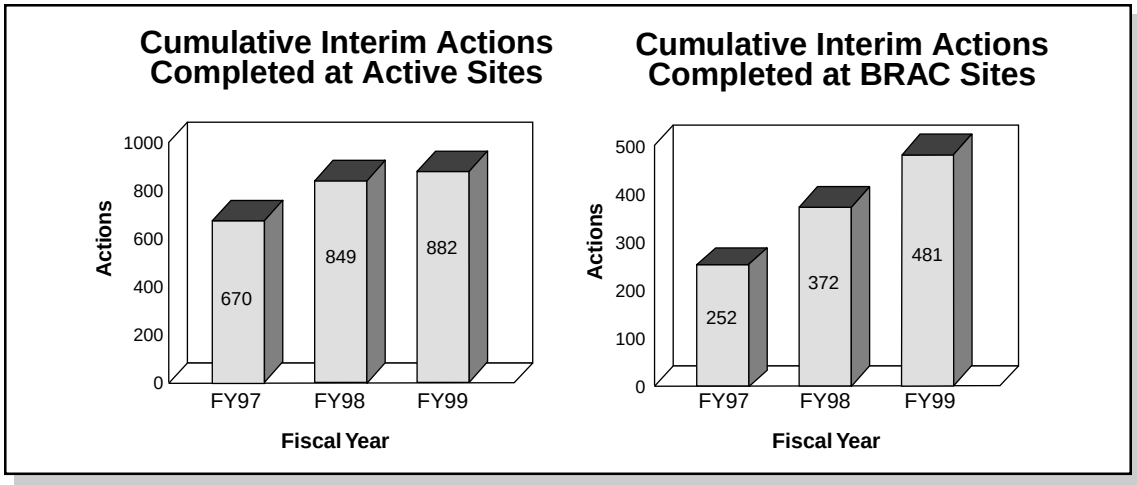


* FY96 through FY98 totals have been updated since the previous Annual Report to reflect new and revised data as of FY99.

Sites reaching Response Complete from Cleanup
Sites reaching Response Complete directly from Investigation

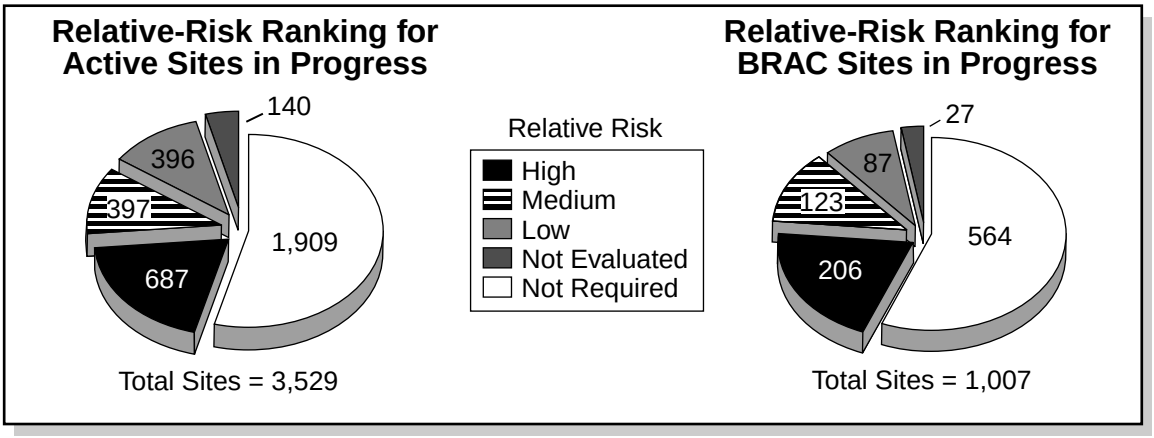
Navy's risk management philosophy also considers expediting restoration of BRAC property slated for reuse and the need to plan for, and take advantage of, projects that provide economies of scale. The Navy achieves economies of scale by addressing similar, proximate sites in a coordinated way as part of the same project, instead of initially addressing only high relative-risk sites and then addressing related low relative-risk or medium relative-risk sites individually. In such cases, flexible management allows medium and even low relative-risk sites to be included in the project along with the high relative-risk site(s) that receive top budgetary priority. DON also has an initiative under way to accelerate the restoration or closure of all sites at installations that have only a few, generally less complex, sites. This initiative is geared toward closing out the restoration program at these installations. By doing this, DON will avoid the continuing overhead costs associated with maintaining a program at these installations.

DON continues to emphasize cleanup, while maintaining a necessary level of investment in site analysis. The DON goal is to spend at least 60 percent of its total program budget on actual cleanup. DON exceeded this goal in FY99, spending 62 percent of the total program funding on cleanup. Continued use of Interim Remedial Actions and removal actions is helping DON achieve these aggressive cleanup goals.



Relative-Risk Evaluation

During FY99, DON reduced the number of its sites that had not been evaluated for relative risk from 200 to 167. The remaining unevaluated sites are new sites that DON will evaluate in FY00 or existing sites that do not require evaluation or cannot be evaluated because of technical considerations in the DoD Relative-Risk Site Evaluation model.



Organization and Management

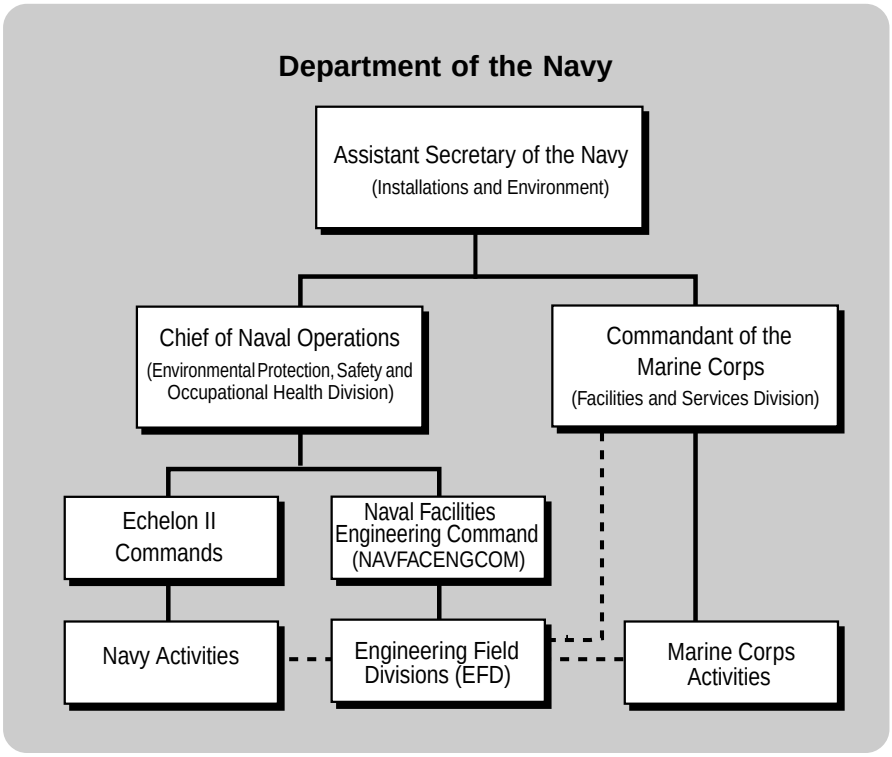
DON executes its restoration program through the Naval Facilities Engineering Command (NAVFAC) and its eight Engineering Field Divisions and Activities (EFD/As) nationwide. Remedial project managers (RPMs) are assigned for each installation in each geographic region covered by an EFD/A. The RPMs reside at the EFD/As but work closely with the installations and the regulators in planning, setting priorities, establishing budgets, and coordinating project execution. RPMs and support staff at the EFD/As centrally manage contracting, technical coordination, direction, and execution of the work. Installations generally take the lead in community relations, outreach, and public involvement and maintain ultimate responsibility for their respective restoration programs.

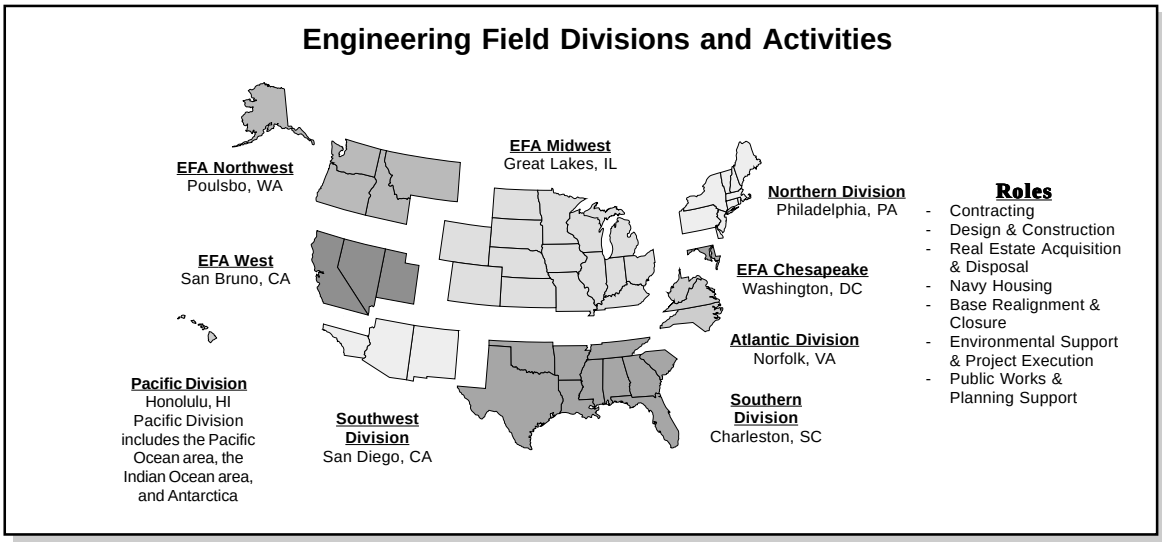
The regionally centralized approach offered by the EFD/As provides DON with a number of benefits, including —

- Consistency
- The ability to take advantage of efficiency
- Economies of scale.

Benefits of the regional approach include consistency in policies and guidance, management and technical approaches, and planning and priority setting within a given U.S. EPA Region; enhanced communication and sharing of information and lessons learned among RPMs; and efficiencies and economies of scale in contracting and other resource-support activities.

Some of these benefits are evident in the very successful partnering efforts between EFD/As, U.S. EPA Regions, and the states. The regional approach allows partnering efforts to be well coordinated and efficient and helps maintain program continuity over time.





WorldWideWeb

The Department of the Navy 5-Year Plan:

http://www. 5yrplan.nfesc. navy.mil

Management Initiatives and Improvements

The Navy continues to use the NORM data management and information system. This system, which is based on a design that normalizes the various data collected and reported for the environmental restoration program, has consolidated and improved system requirements and capabilities that previously resided in multiple stand-alone databases. NORM eliminates the duplication of effort that was inherent in the previous systems, providing an integrated data management and collection process that not only serves reporting requirements but also provides an accessible, useful tool for field personnel. DON used NORM to develop its FY99 and FY00 budgets. The system has improved the quality and timeliness of data, increasing DON's ability to plan and to allocate resources.

The Navy also continues to rely on the DON 5-year Environmental Restoration Plan as an important planning, communication, and management tool. Published annually, the year plan helps DON communicate its successes to installation personnel, regulatory agencies, and the public.

Information and Technology Transfer

The area of information and technology transfer is one of DON's many strengths. NAVFAC directly coordinates the various installation restoration technology transfer efforts within its command and field offices, with technical support provided by the Naval Facilities Engineering Service Center (NFESC). The key groups in DON's technology transfer effort are —

- NFESC
- Navy Environmental Leadership Program (NELP)
- Alternative Restoration Technology Team (ARTT).

WorldWideWeb

Navy Facilities Engineering Service Center:

http://www.nfesc.navy.mil/ enviro/index.html

NFESC

NFESC provides DON with specialized engineering, scientific, and technical products and services and is oriented toward the transfer of technology through consultation and technical assistance, patent license agreements, cooperative research and development agreements, and direct rapid response to requests for support.

Cleanup Review Tiger Teams Improve Program Execution

Since FY96, NFESC has led technology application peer reviews, known as the Cleanup Review Tiger Teams, at each EFD / A. The initial review effort included discussions with 150 RPMs who were responsible for approximately 460 sites. The reviews focused on high-cost projects, where use of innovative technologies and approaches were most likely to produce quality improvements. The teams made site-specific findings and recommendations, as well as general recommendations for improving the quality and performance of the DON Environmental Restoration Program. As the EFD / As began to implement their own review processes in 1998, its team and its members were available on request to supply additional resources.

The findings and recommendations of Tiger Team effort have improved program execution, reduced remediation costs at numerous sites, and accelerated environmental restoration efforts. The current Tiger Team focuses on complex issues such as ecological risk assessment and cost-effective long-term management and site closeout.

It continues to be the hub of the Navy's innovative environmental remedial technology demonstrations, evaluations, and technology information transfer efforts. Four important NFESC-led activities are —

- Technology Application Teams (TATs)
- Cleanup Review Tiger Team
- General Broad Agency Announcement Program
- Remediation Innovative Technologies Seminars (RITS) series.

TATs are primary agents for DON's facilitation and use of cost-effective innovative technologies. The use of TATs, which are organized according to specific technologies, coordinates the testing and evaluation of innovative technologies, develops technology transfer tools, and provides field support to RPMs. Current TATs supporting remedial project managers at EFD/As include —

- Alternative capping
- Bioremediation
- Constructed wetlands
- Low-temperature thermal treatment
- Phytoremediation
- PCB cleanup
- Air sparging
- Dense nonaqueous phase liquid characterization and remediation
- Remedial Action Operation and Long-term Monitoring (LTM)

- Small-arms ranges
- Monitored natural attenuation.

Since October 1997, NFESC has promoted the use of private-sector innovative technological advances within the Navy and DoD through the semiannual issuance of a Broad Agency Announcement (BAA) in the *Commerce Business Daily*. This program encourages vendors, particularly smaller companies, and innovators to submit abstracts on their innovative environmental technologies to the Navy for potential application throughout DON and DoD. Technologies submitted for review are evaluated, and those that match the needs of specific facilities may proceed to the field application phase. Currently, 7 field application projects are complete, 15 are in progress, and 4 are pending. The BAA program has been very useful and will continue to promote environmental technology innovation into the foreseeable future.

Seminars Provide Information on Innovative Technologies

Starting with the bioremediation technology seminar in the summer of 1996, the NFESC has continually conducted technical seminars at the EFD / As. Presenting the latest remedial technologies and application tools, NFESC's one-day RITS have focused on low-temperature thermal treatment, small-arms ranges, alternative methods of landfill capping, permeable reactive walls, surfactant-enhanced aquifer remediation, phytoremediation, constructed wetlands, and air sparging. These seminars have been instrumental in providing RPMs with technical information on innovative technologies and giving them the latest tools for implementing these technologies at their sites. Future seminars will include such topics as Fenton's reagent and in situ chemical oxidation, optimization of LTM and remedial operation management, and enhanced bioremediation.

Naval Environmental Leadership Program

Another important contributor to DON's technology transfer initiatives is NELP, a program based at Naval Station Mayport, Florida, and Naval Air Station (NAS) North Island, California. NELP is instrumental in developing and demonstrating cost-effective, innovative environmental technologies that can be transferred to, and adopted at, other DoD installations. A notable success under the NELP program is a Web-based database that compares various volatile organic compound off-gas destruction technologies. This database is based on results from a joint NFESC and NELP project at NAS North Island, San Diego, California.

TAPP Program Involves Stakeholders

DON continues to lead the way in the Technical Assistance for Public Participation (TAPP) arena. In FY97, it conducted a successful pilot TAPP project at Naval Air Station North Island, California. Once TAPP became official in February 1998, the Navy initiated DoD's first TAPP contract at NAS Alameda, California.

In FY99 the Navy awarded five more TAPP applications. By the end of FY99, the work for three of the five TAPP awards had been completed. The TAPP program has been instrumental in educating communities. It also has provided community stakeholders with an understanding of the highly technical cleanup program. The TAPP program is a win-win initiative for both the Navy and the community.

Alternative Restoration Technology Team

Where NELP concentrates on developing and demonstrating new technologies, the ARTT, which consists of technical managers and representatives from various organizations throughout the DON chain-of-command, focuses on the technologies' application. The ARTT's objective is to promote the use of cost-effective innovative technologies to close out installation restoration sites while protecting human health and the environment and meeting all regulatory requirements. The team is responsible for the following activities —

- Identifying barriers to implementing innovative technologies
- Recommending process changes that will eliminate or minimize such barriers
- Proposing policies and recommending procedures and guidance for developing and implementing new technologies
- Developing and recommending initiatives and strategies that support use of innovative technologies
- Identifying potential sites and innovative technologies for demonstrations.

In FY98, the ARTT developed a monitored natural attenuation (MNA) protocol in collaboration with the U.S. Geological Survey. This protocol provides NAVFAC RPMs with user-friendly, step-by-step guidance on the application of MNA. Currently, the ARTT is investigating the effectiveness of various in situ chemical oxidation technologies and diffusion samplers.

Outreach

In FY99, DON continued its commitment to involving stakeholders in the Environmental Restoration Program. Communities and other stakeholders are critical constituents of the restoration program, providing DON with insight on addressing cleanup issues at Navy and Marine Corps installations. DON's strong support of community outreach is evidenced by its commitment to providing meaningful opportunities for public participation. DON has established restoration advisory boards at more than 100 active and closing Navy and Marine Corps installations and seeks other opportunities, such as installation open houses, presentations to service clubs, and sponsorship of environmental education in local schools, to encourage community involvement. DON's continual commitment to involving stakeholders has built trust and credibility through the years and has turned concerned citizens into motivated allies of the restoration program.

Working with citizens and regulators alike, the Navy will continue to embrace stakeholder advice and contributions in resolving issues and improving the DON restoration program.

Funding

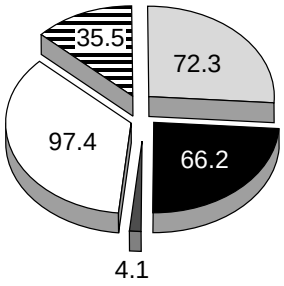
In FY99, the Navy obligated $273.6 million in Environmental Restoration funds to active installations. With adjustments for inflation, the FY00 funding level is projected to be $282.5 million and the FY01 funding level is projected to be $294 million.

In FY99, DON spent approximately 62 percent of Navy Environmental Restoration funds on design work, interim or final cleanup actions, and operation and maintenance. In FY00, the proportion of program funds expended on environmental restoration activities is also expected to be 62 percent.

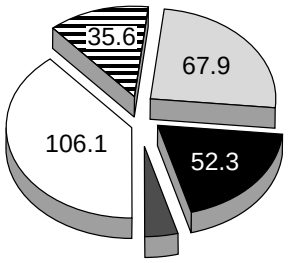
In FY99, the Navy obligated $153.7 million in Environmental Restoration funds, not including funds for compliance or planning, to BRAC installations. The planned BRAC funding levels for FY00 and FY01 are $65.8 million and $289.3 million, respectively.

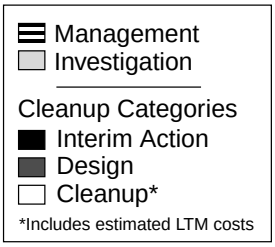
Navy Environmental Restoration Funding Profile
(in millions of dollars)

FY98 ER, Navy Funds Executed
Total = $275.5 million

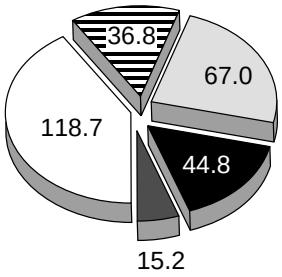


FY99 ER, Navy Funds Obligated
Total = $273.6 million

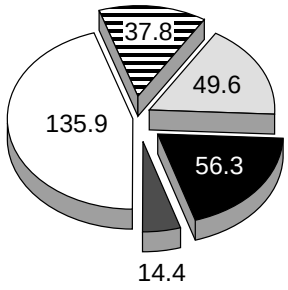




FY00 ER, Navy Execution Planned
Total = $282.5 million



FY01 ER, Navy Planning Estimate
Total = $294.0 million



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