The Lemon Juice Solution:

Pollution Prevention and Acquisition Reform

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The Department of Defense (DoD) has a clear duty to clean up after itself and comply with federal environmental laws and regulations. Defense installations cover tens of millions of square miles of American landscape and impact on its populace, land, water, air and wildlife. The Office of the Deputy Under Secretary of Defense for Environmental Security is responsible for ensuring that all DoD activities protect our natural resources.

INTRODUCTION

Electronic circuit boards are the nerve system of nearly all modern weapon systems in the U.S. arsenal. But making them and fixing them hurt the environment because we'd relied on chemicals that harm the earth's protective layer of ozone.

The Hughes Aircraft Company came up with an answer. It developed a process that relies on a non-toxic soldering flux based on citric acid, which is found naturally in garden variety lemons and oranges. Unfortunately, the Department of Defense (DoD) couldn't buy the Hughes product until we completely rewrote the military specification (MILSPEC) for solder, which dictated purchase of the old type.

But now, thanks to a significant change in the military acquisition system this summer, DoD will no longer have to hurdle the MILSPEC system in order to seize on new, environmentally sensitive technologies.

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Indeed, acquisition reform presents a fresh opportunity to do our job of defending America with less pollution.

Changing the Standards

On June 29, Secretary of Defense William J. Perry announced a historic change in the way DoD will buy its weapon systems components and supplies. In short, like the Berlin Wall, we are tearing down the MILSPECs system, which required our contractors to follow lengthy detailed instructions to make even the most mundane items. Instead, we are going to rely on performance and commercial standards. "Instead of telling our contractors how to build something," Perry said, "we are going to tell them what we want it to do and then let them build it to achieve that desired result."

The Berlin Wall analogy is apt because MILSPECs built a wall in our economy, dividing defense contractors from commercial producers and creating two separate, unique industrial bases. The MILSPECs often forced defense contractors to do business differently, take more steps and do more paperwork. This military-unique system raised our costs, a luxury we cannot afford. It also cut DoD off from the commercial market where many of the technological advances that we need to maintain a strong defense and cleaner environment are happening. With commercial and performance specifications, DoD can save time and money, broaden our base of suppliers, and tap emerging technology like the Hughes' citric acid soldering flux.

Environmental Security

The demise of MILSPECs, as well as the acquisition reforms making their way through Congress, will completely change the way DoD does business. These changes will also enhance DoD goals for pollution prevention.

The Office of the Deputy Under Secretary of Defense for Environmental Security, a new leadership post, is responsible for ensuring that all DoD activities—from the design and production of our weapon systems to the maintenance of our numerous installations and ships at sea—protect the natural resources that are entrusted to us. To make this happen, I directly advise the top defense acquisition executive.

Under the Clinton Administration, DoD has placed a new, higher-profile emphasis on protecting the environment. This attention is long overdue. Defense Department installations cover tens of millions of square miles of the American landscape. If you look at a map, it is astonishing how much of the country we cover. Naturally, nearly everything we do affects the nation's land, water, air, wildlife and people.

We cannot claim that environmental protection ends at the gates of our military installations, particularly since we are returning so many of them to the public. The DoD has a clear responsibility to clean up after itself, comply with federal environmental laws and regulations, reduce its impact on the environment, prevent pollution in the future and reduce the cost of doing all these things.

Protecting the environment is not only the right thing to do, it also prevents future cleanup costs from eating into military readiness. Furthermore, it ensures our national security in the larger sense—our people, our territory and our way of life.

Buying "Green"

Since 80 percent of the hazardous materials we generate can be tied to weapons systems, the best place to start protecting the environment is in our acquisition process. By weighing the potential environmental impacts of a weapon system early in the acquisition decision process, we can head off pollution problems down the road. Actively moving to limit the potential environmental impact of a weapon system over its lifecycle—from design to production, operation, maintenance and disposal—is the essence of pollution prevention.

Acquisition reform also opens up tremendous opportunities for DoD to team up with the private sector to develop and demonstrate dual use technologies—those that can be used in both military and commercial products and services. And, since we are one of the nation's largest consumers, we can stimulate new markets for the dual-use technologies, and even create new jobs. For example, after working with DoD to revise the MILSPEC for electronic circuit boards, Hughes Aircraft applied for a patent on its citric acid-based cleaning process for both military and commercial uses. It was clearly a win-win situation—a win for the economy and for the environment.

The MILSPEC reform will help meet these goals. As the Hughes product illustrates, the commercial marketplace is producing the kind of environmentally sensitive technologies that we want. By relying on commercial and performance standards, we can challenge the nation's industrial base to make our weapons, components, supplies and processes more "green" instead of telling the private sector how to do it.

In some cases, such as highly specific or sensitive technologies, DoD will still need to rely on MILSPECs. So, we are undertaking an effort to identify opportunities to eliminate or reduce from those military specifications and standards the use of toxic chemicals and extremely hazardous substances. The changes are aimed at reducing the generation of hazardous wastes from the manufacturing floor to the maintenance depot.

Colleen Preston, the Deputy Under Secretary of Defense for Acquisition Reform, recently endorsed these ideas in a policy statement to the Secretaries of the Military Departments. "The acquisition community," she wrote, "holds the key to preventing pollution that results from the acquisition of new and modified weapons and support systems." In that light, Preston urged DoD civilian and military acquisition leaders to factor pollution prevention in all phases of the procurement of systems, system components and associate support items throughout the "entire system life cycle."

In addition to looking at MILSPECs to achieve our acquisition pollution prevention goals, my office is also working to:

- Improve compliance with the environmental requirements already in our acquisition regulations;
- Revise acquisition regulations and standards to incorporate environmental analysis as part of the systems engineering and design;
- Expand environmental analysis of weapon systems during the Defense Acquisition Board program reviews;
- Develop life-cycle cost analysis tools that include methods for estimating environmental costs; and
- Integrating pollution concepts into weapons systems contract oversight and logistics processes.

Our goal is for DoD to buy smart and buy "green."