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Critical Issues Facing the Superfund Program

Statement of Katherine N. Probst,
Senior Fellow, Resources for the Future

Prepared for the Senate Environment
and Public Works Committee
Subcommittee on Superfund

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*The views expressed herein are those of the author only, and do not represent the views of the staff, management, or Board of Directors of Resources for the Future.

Mr. Chairman and distinguished members of the Subcommittee, thank you for inviting me to testify before you today about the critical issues facing the Superfund program. I am a Senior Fellow at Resources for the Future (RFF) and the director of RFF's Risk, Resource, and Environmental Management Division.

RFF is an independent, nonprofit 501 (c)(3) research and educational organization located here in Washington, D.C. For over 50 years, researchers at RFF have been conducting research on a wide variety of issues related to energy, natural resources, and the environment. RFF does not lobby and does not take positions on legislation or regulations as an organization. The views I present today are mine alone, and do not reflect the opinions of the staff, management, or Board of Directors of Resources for the Future. I will try to keep my oral remarks brief, and I would appreciate it if you would include my full written statement in the record.

For more than 15 years, I have conducted research on issues related to the evaluation, management, and improvement of the Superfund program. I was the lead author of a Report to Congress, issued by RFF in July of 2001, titled *Superfund's Future: What Will It Cost?* which included estimates of the funding that would be needed by EPA from FY 2000 through FY 2009 to fully implement the program, assuming no change in the program's policies or regulations. I was also the lead author of a more recent report, *Success for Superfund: A New Approach for Keeping Score*, published by RFF in April 2004. In this report, I recommended that EPA develop a one-page "report card" for each site on the National Priorities List (NPL) that would include key information not only on site progress, but also on major site contaminants and other key site attributes. I have also directed a number of studies about other aspects of the Superfund program as well as studies of ways to improve the cleanup of sites in the nuclear weapons complex, which, as you know, are the responsibility of the Department of Energy.

In all of these studies, in addition to addressing key policy issues, I have made specific suggestions for improving the data and management systems used by the Superfund program, an issue near and dear to my heart.

The Subcommittee asked for comments regarding oversight of the Superfund program. I would like to first very briefly summarize the status of the program as it relates to progress at sites on the NPL and then focus on four key issues:

1. Cleanup funding;
2. Monitoring and enforcing institutional controls;
3. Improved data and public information; and
4. The need for independent evaluation.

A Snapshot of Cleanup at NPL Sites

After a site is listed on the NPL, each site is either addressed as a whole or divided into multiple projects. Each major project goes through a number of steps: the site is characterized, alternative remedies are evaluated, a remedy is selected, and then a detailed remedy design is prepared. After that, the site (or project) enters what is called the “construction” phase, which is the actual implementation of the remedy. When all remedies at a site (some sites have multiple remedies) have been fully implemented – that is, when all the construction and engineering work is done – the site is deemed “construction complete.” Construction complete is one of EPA’s major milestones for reporting individual site progress, and the progress of the program as a whole. It is worth noting that just because a site is categorized as “construction complete” does not mean that the cleanup goals at the site have been achieved. And, as discussed in more detail later in my testimony, at many sites where hazardous substances are left on-site at levels that preclude unrestricted use of the site, restrictions on land, water, or groundwater use – referred to as “institutional controls” – are required to ensure that people do not come into contact with contamination remaining at the site.

As of the end of May 2006, there were 1,244 final sites on the NPL (this number does not include “proposed” NPL sites or sites that were once final NPL sites and have since been formally “deleted” from the NPL). Just over half of these sites (665) are construction complete. That is the good news. The bad news is that the remaining 579 sites – or 47 percent – are *not* yet construction complete, which means that the cost of

site studies and remedies lies in the future and that substantial additional funds will need to be appropriated to complete cleanup activities at many of these sites. Most of these sites are in the construction stage, but there are a large number where studies are underway or have not yet begun, meaning that a sizeable number of these sites are just beginning to make their way through the "Superfund pipeline."

According to information available on EPA's Superfund web site, a large number of these sites still present some kind of current risk to human health or the environment. Of the 579 final NPL sites that are not construction complete, there are:

128 sites (22%) where human exposure is not under control, and

192 sites (33%) where groundwater migration is not under control.

Clearly, there is not enough information on the Superfund web site (a subject I return to later in my testimony) to know exactly what this information means and how large the risks at these sites are, but it does suggest that there is more critical work that needs to be done, and in an expedited manner.

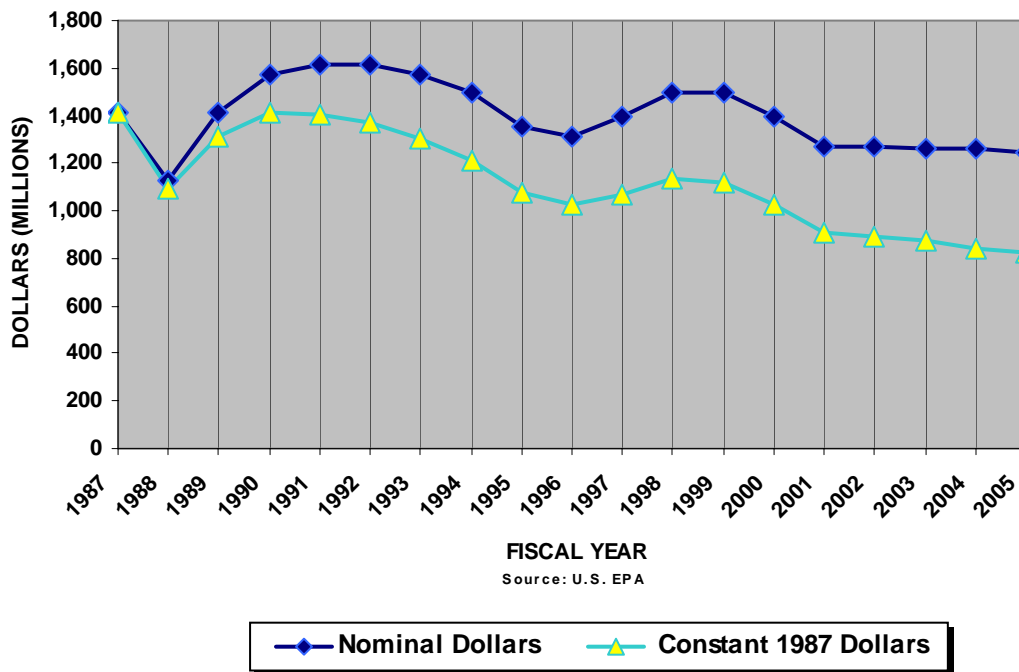
Although many would like to think that after 25 years of the program's existence, we are nearing the end of the need for the Superfund program, this appears to be wishful thinking. While fewer sites have been listed in recent years than in the heyday of the program, some of the new sites being added are large and complex, and there are still a large number of "old" sites yet unfinished. Current and future NPL sites need cleanup, attention, funding, and EPA and Congressional oversight.

1. Cleanup Funding: Coming Clean about What Lies Ahead

Since 1987, Superfund's annual appropriations have fluctuated from a low of \$1.1 billion in FY 1988 to a high of \$1.6 billion in FYs 1991 and 1992, as shown in the figure below. In recent years, EPA Superfund appropriations have been relatively constant at just under \$1.3 billion a year, at least in what are referred to as "nominal dollars." In constant 1987 dollars, however, the Superfund's program spending power has decreased substantially since 1987, as also shown in the figure below. The program's FY 2005 appropriations of \$1.2 billion are the equivalent of \$820 million in constant 1987

dollars – a 40% decrease in purchasing power when compared with actual FY 1987 appropriations of \$1.4 billion. Thus, the Superfund program’s real purchasing power has decreased dramatically at the same time as large, complex, and expensive sites – often referred to as “mega sites” – make up an increasing proportion of the program’s workload. It should come as no surprise that, as predicted in the July 2001 RFF Report to Congress – and documented by many subsequent reports since then – there is a shortfall in funds needed for cleanup.

Superfund Appropriations



Over the past few years, the U.S. Government Accountability Office and the EPA Office of Inspector General have clearly documented that the Superfund program suffers from a funding shortfall and that EPA has had to delay cleanup actions at NPL sites as a result. One solution to this problem, of course, is to increase annual funding for the Superfund program. In fact, in the past two years, the Administration has included in the President’s budget a request (although not with much force) for an additional \$150 million targeted specifically for cleanup actions at NPL sites. This funding request most likely represents the minimum, not the maximum shortfall, based

on the work of RFF and other independent organizations. Any funding increase by Congress should be targeted specifically to cleanup related activities.

If the needed funding is not forthcoming, however, it is critical that EPA “come clean” about the implications of this shortfall on the future pace of cleanup, and on progress at individual NPL sites. This will only happen if Congress, either in oversight hearings such as this one, or as part of the annual appropriations process, requires that EPA identify on a site-by-site basis the specific funding shortfall for each site on the NPL, and specify which sites will be delayed – and by how much – if funding is not increased over current appropriations.

In addition, Congress should ask EPA, on an annual basis, to present to this Subcommittee and to the relevant appropriations committees how much funding would be needed to “fully fund” cleanup, assuming no change in current cleanup standards and policies. This is exactly the charge that was given to RFF in the conference report that accompanied the FY 2000 VA-HUD independent agencies appropriations bill. RFF was asked to conduct this study by congressional staff because it was felt that EPA did not have the credibility to do this work.

If there is still concern about EPA’s credibility, the Subcommittee could require the report be subject to independent external peer review (on an expedited basis) at all stages of the project (conceptual, first set of results, final results). This would assure that the analysis and assumptions are sound. Conversely, Congress could again request that the Agency contract with an independent third-party for this information. In addition, Congress should require that EPA develop a reliable model for estimating future cleanup and other related costs and update this model annually. In fact, EPA had just such a model, called the “outyear liability model,” for many years, but it is now defunct. It is critical for effective congressional oversight that EPA, and Congress, know the estimated future costs of the Superfund program.

In this era of ever-scarcer federal dollars, the Superfund program also must take a hard look at its own budget, identify areas that are not very productive, and reprogram funds wherever possible to activities that are directly related to cleanup.

This does not mean cutting the enforcement program, but it does mean examining the myriad initiatives that have sprouted over the years to assess which ones are truly worthwhile. These include everything from efforts to focus on redevelopment of Superfund sites to efforts to stimulate new technologies for cleanup. While almost all the initiatives sound good, it is critical that their benefits and costs be evaluated to make sure that the best use is being made of scarce Superfund dollars.

While it is unlikely that reprogramming from existing programs and initiatives will release enough funds to address the cleanup shortfall, it is important that the program be willing to undertake this kind of self-reflection and put funds where they are most needed. There is little appetite in many quarters for increased cleanup funding until EPA takes a hard look at where current funds are going and makes needed adjustments.

2. Monitoring and Enforcing Institutional Controls: Let's Get On With It!

Since the mid-1990's, researchers from RFF, the Environmental Law Institute (ELI), and the University of Tennessee, among others, have published a number of studies documenting the need for closer monitoring and more active enforcement of institutional controls at Superfund sites. Many in government, academia, and the private sector have written about these issues as well. What has actually been accomplished in the past ten years? Well, a lot and not much.

In some ways, a lot has happened regarding institutional controls (now fondly referred to as "ICs"). A decade ago, few people in the cleanup field even knew what institutional controls were, and even fewer were concerned about them. Now there are frequent ICs meetings and conferences, and various web sites and other Internet resources devoted to ICs, land use controls, long-term stewardship, call it what you will. More importantly, after many long meetings and discussions, a group of experts developed the Uniform Environmental Covenants Act (UECA), which has been enacted or introduced in more than a dozen states. This uniform law, once enacted, ensures that states would be able to implement and enforce durable environmental covenants to

restrict land use. However, UECA will do nothing to solve the institutional problem of assigning responsibility to a specific entity to ensure that ICs are monitored regularly, or to clarify who will have the responsibility for bringing enforcement actions when needed.

We appear to be no closer to what is really needed: reliable information on ICs for all NPL sites and annual on-the-ground inspections and enforcement of institutional controls. The Superfund program still does not have a consistent and reliable approach to tracking and monitoring ICs, which is critical to the protection of public health and the environment at contaminated sites. More and more contaminated site remedies rely on ICs to ensure protection of public health and environment. EPA must make monitoring and enforcement of ICs a top priority.

Ironically, the most recent major report on ICs by the U.S. Government Accountability Office (*Hazardous Waste Sites: Improved Effectiveness of Controls at Sites Could Better Protect the Public*, [GAO-05-163](#), January 28, 2005) reached many of the same conclusions as the many prior studies conducted in the 1990's by RFF, ELI, and others. GAO concluded that:

- Institutional controls are increasingly part of Superfund remedies and their effective implementation is critical in ensuring protection of public health, that is, to limit exposure to contamination that remains on-site even after a remedy has been implemented.
- There is often great uncertainty regarding what level of government – local, state, or federal – is responsible for monitoring these restrictions on land, water, and groundwater use. And, of course, without consistent monitoring, we don't really know if ICs are in place and working.
- Due to the nature of institutional controls, it is often not clear what organization has the authority to enforce institutional controls.

- Currently available information suggests that for a non-trivial number of sites, the institutional controls required to ensure a remedy is protective are *not* in fact being fully implemented.

The real question is, why isn't EPA moving forward aggressively to establish a robust monitoring and enforcement program *now* for ICs at NPL sites, which is what is really needed?

So far, EPA's main response has been to focus its resources on developing a complex (and much-delayed) database to track institutional controls and to issue a variety of guidance documents. While these are positive actions, it is unclear whether we are any closer to having reliable information on ICs at all NPL sites. It is taking many years and untold dollars to get the database up and running, and the guidance documents suggest that EPA will rely on five-year reviews to monitor implementation of ICs.

Five years is a long time interval between IC inspections - to long a time - when the issue is assuring compliance with land use and other restrictions needed to protect public health. While guidance documents are nice, and EPA can get them issued without going through the Office of Management and Budget (OMB) and the White House, the reality is that they "do not have the force of law."

Simply put, institutional controls "work" only when people know about them and comply with them. Having restrictions on the use of land, water, and groundwater only on paper is meaningless, unless these controls are actively enforced and monitored. And, if the controls are not enforced, the public can be at risk.

What then is to be done?

Ideally, EPA would make institutional controls part of the regulatory framework governing Superfund cleanups. This would require amending the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) to address how institutional controls should be developed, monitored, and enforced. When the NCP was written, EPA's policy analysts (and most of us on the outside) were focused on getting remedies

selected at Superfund sites. The NCP lays out very detailed requirements, including provisions for public comment, on the process that results in the selection of a site remedy. However, the NCP is quite sparse in regard to regulatory requirements after that point. In fact, even though ICs usually are not fully developed until after a remedy is selected - typically as part of a settlement agreement - there is no provision for public input on ICs, nor is EPA required to maintain an administrative record after a remedy is chosen.

Given that ICs are a critical part of the effectiveness of many remedies, there should be clear and consistent requirements for how ICs are selected, monitored, and enforced that have the force of law. No matter how difficult it might be to get the NCP amended, we have been operating with the band-aid of IC guidance documents for long enough.

The recommendations I am making today are identical to those included in a 1997 RFF report *Linking Land Use and Superfund Cleanups* that I co-authored with colleagues Bob Hersh, Kris Wernstedt and Jan Mazurek:

- EPA should revise the National Contingency Plan (NCP) – the regulatory blueprint for the Superfund program – to address the role of land use in remedy selection, including incorporating the development of institutional controls into the formal remedy selection process.
- EPA should, in consultation with state and local governments, develop a strategy (for eventual codification in the NCP) to ensure effective long-term regulatory oversight of Superfund sites where contamination remains at levels that present a risk to public health after the remedy has been constructed and implemented.

Sadly, these recommendations are just as relevant today as when we made them nine years ago. If EPA does not move forward to amend the NCP, EPA can still take action right now to implement a simple and streamlined ICs tracking system that would give the Agency the information it needs to find out if ICs are being complied with, and, if they are not, to take the necessary follow-up action. There is absolutely nothing that

precludes EPA from doing this; all that is needed is senior management direction and attention.

The first step is to implement a simple and straightforward ICs tracking and compliance database, available to all on EPA's web site. We have ample evidence that the more complex the data base, the less likely it is that the data in it will be reliable. The old adage "keep it simple stupid" is still apt. After many years, and many hours of work by EPA, consultants, and the input of many experts, we still don't have a workable ICs tracking system that is up and running and available to the public.

It is time, as economists are fond of saying, to forget about "sunk costs" and create a relatively simple ICs tracking system right now. Such a tracking system could be up and running in three to six months if it has the backing of senior management in the Office of Solid Waste and Emergency Response.

To jump-start this process, I lay out below the kind of information that should be collected by EPA for each site on the NPL that requires institutional controls. This information should be accessible on the EPA web site.

- What is the legal basis for the IC?
- What specific kind of control is required?
- Who is responsible for implementing the IC?
- Has the IC been implemented, and if not, why?
- Who is responsible for monitoring the IC?
- When was the last time someone from EPA, the state, or one of their contractors went to the site to see if the IC is being complied with?
- If it appears that the IC is not being implemented as required, what steps have been taken to remedy the situation?

- Is specific information about the nature of the IC requirement and who to call if the IC is not being complied with for individual sites readily available on all EPA web sites?

This is just a preliminary list of information that needs to be included in a simple ICs tracking system. EPA should, of course, review and refine this set of questions and get input from both internal and external experts. That said, I strongly recommend a *very* streamlined database with perhaps 10 to 15 pieces of critical information that would give EPA, and the public, enough information to know what kinds of ICs are required at each site and if they have been fully implemented.

It is true my list of questions will not tell you everything you ever wanted to know about ICs at a given site, but it will give EPA management and the concerned public enough information to know if there is a problem that requires attention. And, this kind of database would be relatively quick and inexpensive to develop, and easy to maintain. Perhaps most importantly, the questions are simple enough that it should be possible to have highly reliable information that can be trusted. While other more sophisticated information may be required in the future, this information should have been collected years ago, and we need to start someplace.

After this initial assessment is completed, EPA needs to develop an inspection strategy to ensure that ICs are monitored at least once a year and are implemented as required. The safety of those living near these sites depends on this, and it is hard to see what could be more important for the vast majority of NPL sites where some contamination remains on site, even after cleanup activities have been fully implemented. At these sites, ICs can be as important in protecting public health as the engineering remedy itself. It would be foolish to spend tens or hundreds of millions of dollars on a site remedy, and then skimp on the monitoring and enforcement of institutional controls. The Love Canal site - which in many ways "begat" the Superfund program - is the proverbial poster child for the failure of institutional controls. EPA has

a choice to make – it can try to prevent future “Love Canals” by monitoring and enforcing ICs, or it can create an environment where the next Love Canal is just waiting to happen.

3. Improved Data and Public Information

Getting information on the progress, contamination, costs, and health risks of NPL sites is still a challenge. If you log on to the main Superfund site (www.epa.gov/superfund) and click on “sites” it is not readily apparent where to go to get different kinds of information on individual sites among the many choices, nor is it clear where to go to get the most “user-friendly” information. There is in fact some good information to be found on individual sites, but one has to be a Superfund maven to know what is on the Superfund web site, and how to find it. In addition, it is quite difficult to obtain information on overall program progress, that is, the number of sites that have institutional controls, or where current sites are in the “Superfund pipeline.”

In addition, there are still major questions about the quality of much of the information in the Superfund program’s two major systems – CERCLIS, which is the main Superfund database, and IFMS, the Agency’s financial management system. Both systems suffer from too many individual codes that are inconsistently applied, and the way the systems are organized is anything but “user friendly.” It is a well-known fact that individual Superfund offices have created their own databases to serve their needs, leading to multiple systems with multiple data, and, one can only assume, increased total cost to the program. These systems need a major overhaul, not tweaking. They also have many substantive gaps. Ideally, senior management in EPA should be able to access, on their own personal computer, up-to-date information on each and every NPL site, including future funding needs, when various site actions will be started and completed, the status of ICs, the major risks at the site, etc.

Overall, the Superfund web site is extremely difficult to navigate. In this day and age, when so many people go “on-line” to get information, the Superfund web site, especially as it relates to site-specific information, could be greatly improved. More

attention should be paid to describing the various sources of information and to improving the graphics and user-interface of the site. In our report *Success for Superfund*¹, my colleague Diane Sherman and I recommended a one-page report card for all NPL sites, and a longer “NPL site scorecard.” While EPA has improved the information that one can get from the main EPA web site in recent years, it is still difficult to obtain basic information about the timing of future site actions, and what exposure pathways may be of concern.

Creating better internal systems and a more accessible and “user-friendly” Superfund web site should be a top priority. That said, it is critical that any such effort have very strong management from EPA so that the systems created are simple, and the data is reliable. This will require working with EPA’s regional offices, which are on the front line in terms of site response activities – and making sure that whatever consultant is charged with this task does not create a complex system that will only serve to ensure them full future employment for the rest of their careers.

4. The need for independent evaluation: The Superfund program should develop and fund a three- to five-year research and evaluation strategy.

Finally, the Superfund program – like many federal programs – needs to do a better job of evaluating itself. Although there have been many mandates in recent years – requirements under GPRA, the PART analyses led by OMB, and others – to stimulate more and better program evaluation, this new culture seems not to have taken hold yet in Superfund.

The first task is for the program to create the policy and analytic capability internally to create a three- to five-year research and evaluation strategy, and to set aside funds to implement it. Some of these projects can and should be done internally (by EPA staff or their contractors); others studies must be done independently – through contracts assuring contractor independence or requests for proposals to the

¹ This report can be found at <http://www.rff.org/documents/RFF-RPT-SuperfundSuccess.pdf>

academic and nonprofit community. All of the work should be subject to some form of external peer review to assure credibility.

The goal of program evaluation should be to improve implementation in the future and to assure that funds are being spent in the most efficient and cost-effective fashion. With Superfund, everyone has an anecdote about what works, what doesn't, and what the benefits and costs are. All of these elements need to be part of a broader, credible assessment of the program's accomplishments – not simply as a “communications” initiative.

I think it is fair to say that almost every other program in EPA has a more robust capability for policy and economic analysis than does Superfund. I suspect this is because the Superfund program has never had to comply with the requirements of the various executive orders requiring regulatory impact analyses. Superfund, however, still does not have a core policy analytic capability charged with independent analysis and evaluation. A group needs to be created within OSWER that has the charge of looking at the entire program, including enforcement, as that is so crucial to Superfund, and the group needs to be protected from day-to-day fire drills and have resources to fund external research and analysis.

Once such a critical mass is created, the next step is to develop and implement a three- to five -year strategy for independent research and evaluation of the Superfund program and to set aside funds for this purpose on an annual basis. This should be done with input from external experts, as well as with input from senior EPA management. Even though the program is short of funds for cleanup, good evaluations should help the program save money and be more effective in the long term. Needless to say, I think it is very important that the results of these studies be made public.

What kinds of questions would be included in such a research strategy? Below are some suggestions. These are just some of the many questions that, if asked, might lead to improvements in the Superfund program. For a program that costs the American taxpayer \$1.3 billion a year, and that has been in existence for over 25 years, we should know the answers to some of these questions.

- Why does it take so long to reach “construction complete” at some sites? Are there patterns to the causes of delay that could be addressed to speed cleanup?
- Why are there still so many sites where human exposure is still not under control?
- Which remedies have been most effective, and which have not, for particular kinds of contamination?
- How accurate have EPA’s initial estimates been of site costs and time to complete cleanup? What steps could be taken to improve both estimates?
- How much are responsible parties paying for cleanup actions? How does this compare to initial cost estimates?
- What makes a “mega site” a mega site? What drives the high costs at these sites?
- Are institutional controls being implemented? If not, why?
- What, conceptually, are the benefits and costs of Superfund cleanups, and do the data and methodologies exist to actually estimate them?
- What is the quality of site studies and remedy designs? Are there changes to these processes that would both improve the quality of these efforts and decrease program costs?
- Are all Superfund monies actually going to Superfund-related activities, or are some funds and staff siphoned off to other programs and EPA initiatives?
- How do sites listed in recent years compare to those listed in earlier years in terms of complexity, costs, and pace of cleanup?
- What are the findings of the five-year reviews, in terms of whether site remedies are being implemented as designed and whether cleanup goals are being met?

* * * * *

In closing, it is clear from even a brief look at the status of sites on the NPL and the fact that new sites continue to be added each year that the Superfund program is going to be with us for some time yet. Thus, it is worthwhile to invest in improving current data and management systems, and to conduct independent evaluations of key aspects of the program in order to make improvements in how the program is managed and implemented. These investments will pay off by leading to a more efficient program, and ultimately, allow the Agency to do more with the funds it has.

EPA has a responsibility to people living on and near contaminated sites to “come clean” about what has been done at these sites, what contamination and health concerns remain at “their” sites, and when they can expect each site to be cleaned up. Although “coming clean” is always scary – and carries with it the risk of disclosing problems and concerns of which Congress and the American public were previously unaware – it is a crucial first step to improved management and credibility of this important environmental program.

Lasting reform is unlikely to be the result of a series of new initiatives, or quick fixes. After 25 years, many of the same challenges remain as in the early years of the program. There is a need for better data, for independent evaluation, for a willingness to consider – and make – radical changes in funding and management priorities. And there is a need for increased transparency in all aspects of the program. I urge EPA to have as its goal not making the program better this year or next, but to try to ensure that, five years from now, the program is better focused and managed, and that there is better data and information about Superfund sites available to the public. With an eye on the long-term (rather than on tomorrow’s news), EPA can give the American public a much stronger and more effective Superfund program.

Thank you very much for asking me to testify before you today. I would be happy to answer any questions.