Written Statement of Inès Triay
Assistant Secretary for Environmental Management
United States Department of Energy
Before the Subcommittee on Strategic Forces
Committee on Armed Services
United States House of Representatives

April 5, 2011

Good morning, Mr. Chairman, Ranking Member Sanchez, and Members of the Subcommittee. I am pleased to be here today to answer your questions on the President's Fiscal Year (FY) 2012 budget request for the Department of Energy's (DOE) Office of Environmental Management (EM). The EM FY 2012 budget request of $6.13 billion will protect human health and the environment through the safe environmental cleanup of the past nuclear weapons development and government-sponsored nuclear energy research.

Environmental Management Program Strategies: A National Responsibility

- *We reduce risks and protect our workers, our communities, and the environment through cleanup.*

EM's primary responsibility is to keep our employees, the public, and the states where cleanup sites are located, safe from radioactive and hazardous materials contamination. EM continues to adhere to a "Safety First" culture that integrates environment, safety, and health requirements and controls into all work activities. EM will continue improving safety performance with the goal of achieving zero accidents or incidents.

- *Our cleanup work is urgent and essential to the health and safety of communities across the nation.*

To best address the urgency of work to be done, EM continues to pursue its cleanup objectives of achieving the greatest risk reduction benefit per radioactive content (wastes that contain the highest concentrations of radionuclides), while meeting regulatory compliance commitments, and promoting best business practices to maximize cleanup progress.

EM's priorities to support this approach include:

- Activities to maintain a safe, secure, and compliant posture in the EM complex
- Radioactive tank waste stabilization, treatment, and disposal
- Spent (used) nuclear fuel (SNF) storage, receipt, and disposition
- Special nuclear materials (SNM) consolidation, processing, and disposition
- High-risk soil and groundwater remediation
- Transuranic (TRU) waste and mixed low-level (MLLW)/low-level waste (LLW) disposition

- Soil and groundwater remediation
- Excess facilities decontamination and decommissioning (D&D)

➢ *Our mission is not discretionary- we must address the cold war environmental legacy and honor our regulatory commitments.*

Over the last two decades, EM's compliance posture has evolved to where EM and its regulators have a well-defined and established relationship. The FY 2012 EM budget request maintains a compliant position by honoring regulatory commitments. There are approximately 40 cleanup agreements that provide a framework for cleaning up the cold war legacy that EM will continue to abide by. EM's goal in FY 2012 is to meet 100 percent of its enforceable agreement milestones that are found within cleanup agreements.

The FY 2012 EM budget request funds the Tri-Party Agreement settlement with Washington State, as well as, TRU waste retrievals at Idaho consistent with terms of the Idaho Settlement Agreement. Additionally, the FY 2012 EM budget request positions Los Alamos National Laboratory to comply with the 2005 Compliance Order on Consent. Though it is crucial and necessary for EM to fund the activities required by these agreements and consent orders, EM must also have the flexibility to balance these priorities with other requirements across the complex. In addition, at Oak Ridge, EM must demonstrate soil and groundwater cleanup progress in order to comply with other regulatory commitments.

➢ *Time is not on our side- costs and risks increase over time.*

The EM program is large and complex, with urgent activities that must be performed. For example, at the Idaho National Laboratory, plutonium and organic solvent wastes primarily from the Rocky Flats Plant were disposed in shallow pits from 1952 to 1970. The waste was contained in carbon steel drums which have deteriorated over the years as a result of water infiltration and flooding events. These wastes sit above the sole source Snake River Plain Aquifer, which is the size of Lake Erie, and is the irrigation supply for a substantial agricultural industry in the northwest. The EM FY 2012 budget request will allow Idaho National Laboratory to make significant progress in protecting the aquifer with an aggressive program to retrieve, repackage, and dispose of these wastes at the Waste Isolation Pilot Plant (WIPP) by the anticipated completion date in 2015.

Another example is at the Savannah River Site. Tank 48 is a modern, Type III waste tank that holds approximately 240,000 gallons of highly radioactive liquid waste that is also contaminated with hazardous organic materials from past operations of the In-Tank Precipitation process in the mid-1990's. The waste in this tank must be kept isolated due to flammability and chemical incompatibility concerns; however, it occupies space in the tank farm that is required to support the aggressive waste treatment pace needed to clean and close all Savannah River Site tanks by 2026. A Fluidized Bed Steam Reforming process is under development to eliminate the organic component of the waste in Tank 48 and allow the radioactive components to be vitrified in the Defense Waste Processing

Facility to eliminate the hazard and allow this valuable tank space to be returned to tank farm service. The EM FY 2012 budget request supports the Fluidized Bed Steam Reforming process startup in late 2014 and completion of Tank 48 waste treatment by late 2016, allowing Savannah River Site to maintain the accelerated waste cleanup and tank cleaning efforts.

At Los Alamos National Laboratory, the primary mission since 1943 has been nuclear weapons research and development. Waste resulting from this research includes both liquid and solid radioactive waste from plutonium processing, organic solvents, highly explosive by-products, metals and polychlorinated biphenyls. At Los Alamos National Laboratory, the cleanup of soil and groundwater is regulated by the New Mexico Environmental Department pursuant to RCRA. The 2005 Compliance Order on Consent requires that environmental investigations and remediation activities be completed by 2015. There are approximately 860 of the original 2,100 waste sites remaining that require investigation and remediation actions. The EM FY 2012 budget request will allow Los Alamos National Laboratory to maintain the momentum that is necessary to meet the Consent Order requirements.

Finally, there are 29 cubic meters of radioactive sludge currently stored within the water filled K-West Basin at the Hanford Site, approximately 400 yards from the Columbia River. The sludge was created when irradiated fuel rods deteriorated and corroded after many years of underwater storage. The EM FY 2012 budget request allows EM to remove the sludge from the basins and store it in a safer location until 2014, when it will be treated and packaged for transportation to WIPP for disposal.

- *We have demonstrated value for the American Taxpayers by delivering significant progress in the past several years in reducing risks associated with the Cold War environmental legacy- but our work is not done.*

Over the past two years, EM has made significant progress in accelerating environmental cleanup across the DOE complex. EM estimates that by the end of FY 2011, the acceleration of D&D of excess facilities and cleanup of contaminated areas will reduce the legacy cleanup footprint by 40 percent, leading to approximately 90 percent footprint reduction by 2015. Footprint reduction efforts have resulted in estimated cost avoidances of approximately $3 billion and cost savings of approximately $4 billion in life-cycle cost. In terms of size, in 1989, the legacy cleanup footprint was 3,125 square miles. Twenty years later, the footprint was reduced to 900 square miles. EM projects that by the end of FY 2011, 540 square miles of footprint will remain. By 2015, EM envisions that the footprint could be reduced to 90 square miles. The shrinking of the legacy footprint will lead to the D&D of 2,636 facilities and 7,745 completed remediation actions. By 2020, EM envisions that legacy cleanup will be virtually complete, with Hanford being the only large site with multiple cleanup missions remaining.

In FY 2012, the continued management and removal of legacy TRU waste from generator sites will directly support risk reduction and aid in the goal of reducing site footprint. EM estimates that the disposition of 90 percent of legacy TRU waste will be

complete by 2015. To accomplish the 2015 goal, 40,000 cubic meters of TRU waste will need to be disposed. At this time, 78,000 cubic meters of the 118,000 cubic meters total of legacy TRU waste have already been disposed. By 2020, EM envisions that all TRU waste will be sent to WIPP, with the exception of TRU waste from the Hanford Site.

- *The Environmental Management portfolio is one of our nation's largest environmental liabilities-we have a responsibility to relieve future generations of this liability.*

EM will continue identifying opportunities to make strategic investments that reduce the overall cost of the cleanup program while condensing project completion dates. The current life-cycle cost estimate for EM is between $275 billion to $308 billion. This includes $90 billion in actual costs from 1997 through 2010, and an additional estimate of $185 billion to $218 billion to complete EM's remaining mission.

Tank waste accounts for approximately one third of the total EM life-cycle cost and is a major contributor to EM's overall environmental liability. To address this large liability, EM has created the Enhanced Tank Waste Treatment Initiative led by the Enhanced Waste Strategic Team. The Team is looking at ways to focus and integrate efforts to develop and deploy technologies that are necessary to accelerate the completion of the tank waste cleanup mission. EM will focus its technology development and deployment investments to mature the science and technology associated with tank waste processing, treatment, and waste loading. In addition, EM will leverage base funding to optimize tank waste processing capabilities to enhance current tank waste cleanup approaches. To date, EM's Enhanced Tank Waste Strategic Team has identified seven major transformational strategies to reduce the life-cycle cost and length of program execution. Several of these strategies have been incorporated into Savannah River Site's tank waste program while many of these strategies are also being considered for incorporation into the Hanford site's tank waste programs. At Savannah River Site, these strategies will allow EM to accelerate the tank waste cleanup schedule by six years, reducing EM's life-cycle cost by $3 billion.

To address many of the high risk activities, $133 million has been requested for research and development in FY 2012, of which $60 million is requested within the Office of River Protection to support Hanford and Savannah River Site tank waste issues. The requested funding will be used to continue the acceleration of development and deployment of needed technologies related to tank treatment, waste chemistry for characterization and separation; advanced retrieval technologies; improved melter throughput; and increased glass waste loading. The budget request of $32.3 million for EM's Technology Development and Deployment Program supports groundwater and soil remediation subsurface science issues through the development of state-of-the-art methods and models to understand and quantify subsurface flow and contaminant transport behavior in complex geological systems. This reduces the uncertainty in the current models and methods for performance assessments. In addition, Technology Development and Deployment funding will be utilized in FY 2012 to support maturation of the Hot Isostatic Press technology to be deployed at Idaho National Laboratory.

However, this encompasses only a portion of the overall research and development initiatives being conducted across the complex in conjunction with the national laboratories. In FY 2012, the remaining funds for many of these research investments are embedded within the individual projects and programs at EM sites and are critical investments in science and technology that range from technology adaptations to demonstrations that promote the maturation of technology.

- *Improving contract and project management to ensure projects are on schedule and within cost.*

The EM program is large and complex, requiring the tracking of numerous schedules and costs. To ensure that EM delivers the best value for the American taxpayers, the FY 2012 budget request reflects an increased focus on improved acquisition, contract, and project management. To achieve this, EM will develop contract statements of work and deliverables based on clear project requirements, robust front-end planning and risk analysis, ensuring that nuclear safety requirements are addressed early, and changes to the contract and the project baseline are managed through strict timely change control processes. EM will continue to implement performance-based contracts where appropriate.

In a continuation of EM's Journey to Excellence, the EM Base Program Portfolio was restructured using the same project framework used in establishing the American Recovery and Reinvestment Act of 2009 (Recovery Act) projects. Base program operations activities have been separated from capital work within a Project Baseline Summary. Capital Asset Projects will be managed in accordance with DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*. EM is currently developing the policies and guidelines for operations activities, as they are not governed by DOE Order 413.3B.

EM's continued progress in contracts and project management has resulted in EM meeting three of the five criteria needed to be removed from the Government Accountability Office's (GAO) High Risk List. EM's objective has been to improve contract and project management to increase its efficiency and effectiveness so that EM delivers high quality performance for the American taxpayers. GAO has noted that: EM has demonstrated strong commitment and leadership; demonstrated progress in implementing corrective measures; and developed a corrective action plan that identifies root causes, effective solutions, and a near-term plan for implementing those solutions.

One of GAO's standing concerns is that EM must provide the capacity (people and resources) to address problems. To address GAO's first concern, three Program Sponsors at EM Headquarters have been assigned to three large capital projects: Sodium Bearing Waste Treatment Facility at Idaho; Salt Waste Processing Facility at Savannah River Site; and Uranium-233 Down-Blending and Disposition Project at Oak Ridge. EM is also enhancing its partnership with the U.S. Army Corps of Engineers by placing senior construction experts from the Corps as Deputy Federal Project Directors at these construction projects. EM has obtained expertise from the national laboratories,

including hiring a Chief Scientist from Los Alamos National Laboratory to provide recommendations to the Assistant Secretary for Environmental Management on complex technical and design issues. The EM program has defined goals and actions in order to make EM the employer of choice to attract highly knowledgeable candidates while highlighting ways to strengthen our current workforce. Additionally, EM is continuing to conduct Independent Project Reviews that include a review on project staffing adequacy.

GAO's second concern is that EM must monitor and independently validate the many corrective measures that it has taken are both effective and sustainable over the long term. To address GAO's second concern, EM is continuing to validate that the corrective measures taken are effective and sustainable by improved management involvement at the Monthly Project Review meetings with each site. EM also conducts semi-annual Independent Project Reviews for larger projects. The Department believes that there are success criteria that can be used to demonstrate to GAO that EM performance justifies removal from the High Risk List. These success criteria provide for 90 percent of projects to be completed within 10 percent of the original cost baseline based on a three year-rolling average. Additionally, EM will continue to share project and operations activity information openly with GAO and other stakeholders. EM is confident that it will maintain project performance, thereby demonstrating that ongoing improvements in contract and project management are effective and sustainable.

Highlights of the FY 2012 Budget Request

The Department's FY 2012 budget request for EM is $6.13 billion, of which $5.41 billion is for defense environmental cleanup activities. Examples of planned activities and milestones for FY 2012 by site-specific categories are:

Idaho National Laboratory, Idaho

(Dollars in Thousands)

FY 2010 Current Appropriation	FY 2012 Request
$469,168	**$392,000**

- *Complete construction and readiness testing in preparation for startup of operations of the Sodium Bearing Waste Treatment Facility.*

  The Sodium Bearing Waste Treatment Project supports DOE's EM mission of safely storing and treating liquid radioactive wastes. This project will treat approximately 900,000 gallons of sodium bearing waste stored in tanks that are 35 to 45 years old. The treatment of this waste will enable EM close the final four tanks, complete treatment of all tank waste at Idaho, and meet the Notice of Noncompliance- Consent Order Modification to cease use of the Tank Farm Facility by December 31, 2012. Startup operations of the Sodium Bearing Waste Treatment Facility are estimated to begin in January 2012.

- *Ship contact-handled TRU waste to WIPP, and dispose of MLLW and LLW, as required in the 1995 Idaho Settlement Agreement.*

  During FY 2012, 4,500 cubic meters of contact-handled TRU waste will be shipped to WIPP for disposal. In addition 1,640 cubic meters of MLLW/LLW will be shipped for disposal to WIPP by September 2012.

Los Alamos National Laboratory, New Mexico

(Dollars in Thousands)

FY 2010 Current Appropriation	FY 2012 Request
$200,438	**$361,577**

- *Disposition of MLLW and TRU waste.*

  The Solid Waste Stabilization and Disposition Project is comprised of the treatment, storage, and disposal of legacy TRU waste and MLLW generated between 1970 and 1999 at Los Alamos National Laboratory. The end-state of this project is the safe disposal of legacy waste. In FY 2012, in support of the requirements in the 2005 Compliance Order on Consent, Los Alamos National Laboratory will dispose of 1,300 cubic meters of MLLW and 1,000 cubic meters of TRU.

- *Maintain soil and water remediation.*

  The Soil and Water Remediation Project scope at Los Alamos National Laboratory includes identification, investigation, and remediation of chemical and/or radiological contamination attributable to past Laboratory operations and practices. The remaining scope of the project includes characterization, monitoring, and protection of the surface and groundwater at the Laboratory and approximately 860 Potential Release Sites left to be investigated, remediated or closed by evaluation and assessment of human health and ecological risks. In FY 2012, activities include complete groundwater monitoring and reporting requirements consistent with the 2005 Compliance Order on Consent and the Resource Conservation and Recovery Act Operating Permit; and complete and deliver the revised Corrective Measures Evaluation Report for Material Disposal Area G to meet the 2005 Compliance Order on Consent requirements.

Oak Ridge Site, Tennessee

(Dollars in Thousands)

(Includes Safeguards & Security Funding)

FY 2010 Current Appropriation	FY 2012 Request
$436,448	**$401,056**

- *Maintain operation of the Transuranic Waste Processing Center.*

  By the end of FY 2012, Oak Ridge will process a cumulative total of 163 cubic meters of contact-handled TRU waste and a cumulative total of 221 cubic meters of remote-handled TRU waste at the Transuranic Waste Processing Center in preparation for eventual shipment and disposal at WIPP. The continued operation of the Transuranic Waste Processing Center to process contact-handled TRU and remote-handled TRU enables Oak Ridge to meet the Site Treatment Plan milestones.

Richland Site, Washington

(Dollars in Thousands)

(Includes Safeguards & Security Funding)

FY 2010 Current Appropriation	FY 2012 Request
$1,080,503	**$1,005,987**

- *Continue facility D&D and remedial actions within the River Corridor.*

  The River Corridor Closure Project includes the D&D of contaminated facilities and various remedial actions within the geographic area of over 210 square miles within the Hanford Site adjacent to the Columbia River. In an effort to reduce Hanford's cleanup footprint, FY 2012 activities include: complete D&D of two buildings and removal of one soil site in the 100 K Area; complete the selected removal and/or remedial actions for eleven of the high priority facilities in the 300 Area; and initiate remediation of the deep chromium contamination waste site 100-C-7.

- *Conduct high priority groundwater remediation efforts.*

  To protect the groundwater resources within the Hanford site, remediation activities that address groundwater contamination, including carbon tetrachloride, chromium, technetium, and strontium must be conducted. In FY 2012, EM will begin Phase 1 operations of 200W pump and treat system. To meet FY 2012

enforceable agreement milestones, planned activities include, but are not limited to: continue the Remedial Investigation/Feasibility Study process to develop proposed plan for all 100 and 300 Areas' Operable Units; and expand the current pump-and-treat system at 100-HR-3 Operable Unit.

Office of River Protection, Washington

(Dollars in Thousands)

FY 2010 Current Appropriation	FY 2012 Request
$1,096,600	**$1,361,391**

- *Manage the tank farms in a safe and compliant manner until closure.*

  The radioactive waste stored in the Hanford tanks was produced as part of the nation's defense program and has been accumulating since 1944. To ensure protection of the Columbia River, 53 million gallons of radioactive waste must be removed and processed to a form suitable for disposal, and the 177 underground storage tanks stabilized. In FY 2012, activities include: complete bulk retrieval from one C Farm single-shell tank; complete hard heel removal from three C Farm single-shell tanks; and continue to perform single-shell tank integrity evaluations.

- *Continue construction of the WTP complex.*

  WTP is critical to the completion of the Hanford tank waste program by providing the primary treatment capability to immobilize (vitrify) the radioactive tank waste at the Hanford Site. The WTP complex includes five major facilities: Pretreatment Facility, High-Level Waste Facility, Low-Activity Waste Facility, Analytical Laboratory, and the Balance of Facilities. As of January 2011, WTP construction is approximately 58 percent complete. In FY 2012, activities include: at the Pretreatment Facility, place 3,500 cubic yards of concrete (89 percent complete) and install 825 tons of structural steel, (44 percent complete); at the High-Level Waste Facility, install the Thermal Catalytic Oxidizers and the Offgas Carbon Adsorber; the design of the Low-Activity Waste Facility will be complete; at the Analytical Laboratory, construction will be complete consisting of all major civil, structural, piping, mechanical, and electrical power equipment installed and inspected and all piping hydro-tested to confirm capability to meet design requirements; and at the Balance of Facilities, complete construction of the Chiller Compressor Plant and the Anhydrous Ammonia Facility.

Savannah River Site, South Carolina

(Dollars in Thousands)

(Includes Safeguards & Security Funding)

FY 2010 Current Appropriation	FY 2012 Request
$1,342,013	**$1,363,728**

- *Reduce radioactive liquid waste.*

  The mission of the Liquid Tank Waste Management Program at Savannah River Site is to safely and efficiently treat, stabilize, and dispose of approximately 37 million gallons of legacy radioactive waste currently stored in 49 underground storage tanks. In FY 2012, activities include: continue construction of the Salt Waste Processing Facility; continue operation of the Defense Waste Processing Facility and vitrify 312 canisters of HLW**;** operation of Actinide Removal Process and Modular Caustic Side Extraction at planned rates; complete construction of Saltstone Disposal Unit #2; continue Tank 48 Treatment Process Project; and close two tanks which will meet two Federal Facility Agreement tank closure commitments with due dates in the first quarter FY 2013. Closure of these two tanks is the first delivery on the recently approved tank acceleration strategy.

- *Continued storage, treatment, and disposal of LLW, MLLW, and hazardous waste.*

  In FY 2012, SRS will dispose of up to 2,517 cubic meters of newly generated LLW; dispose of 50 cubic meters of MLLW; and dispose of up to 150 cubic meters of hazardous waste.

WIPP, New Mexico

(Dollars in Thousands)

(Includes Safeguards & Security Funding)

FY 2010 Current Appropriation	FY 2012 Request
$234,981	**$233,771**

- *Operate WIPP in a safe and compliant manner and dispose of contact-handled and remote-handled TRU waste from 27 DOE sites.*

  WIPP in Carlsbad, New Mexico, is the nation's only mined geologic repository for the permanent disposal of defense-generated TRU waste. In FY 2012, the EM

budget request supports maintaining an average shipping capability of 21 contact-handled TRU waste and 5 remote-handled TRU waste shipments per week.

Conclusion

Mr. Chairman, Ranking Member Sanchez, and Members of the Subcommittee, I am honored to be here today representing the Office of Environmental Management. EM is committed to achieve its mission in a safe, effective, and efficient manner. EM will continue to apply innovative environmental cleanup strategies so that we may complete quality work safely, on schedule, and within cost thereby demonstrating value to the American taxpayers. I am pleased to answer any questions you may have.