Prepared Statement of
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On the FY 2007 Budget Request
Before the
Senate Committee on Appropriations
Subcommittee on Energy and Water

March 30, 2006

Mr. Chairman and Members of the Committee, thank you for this opportunity to appear to discuss the President's Fiscal Year (FY) 2007 budget request for the Department of Energy (DOE). This testimony will focus on the budget requests for the Office of Energy Efficiency and Renewable Energy, the Office of Electricity, the Office of Nuclear Energy, the Office of Fossil Energy, the Office of Environmental Management, and the Office of Civilian Radioactive Waste Management. But let me first provide some context.

This budget recognizes that science-driven technology is at the heart of the Department of Energy's missions, and that our national laboratories and facilities, together with universities and research activities in the private sector, must be better leveraged to enhance America's national security, economic security, and energy security.

Therefore, we have proposed to significantly increase our investment in science, in keeping with the **American Competitiveness Initiative**.

We have also proposed to significantly increase investments in clean energy research in areas such as solar, biomass, hydrogen, wind, and nuclear, in keeping with the **Advanced Energy Initiative**.

Notably, we have proposed these increases within a flat Departmental budget. Since any realistic pursuit of new or enhanced initiatives must be mindful of practical limitations on discretionary spending, we have prioritized our mission activities, which resulted in proposed reductions in areas such as low-income weatherization—not because we regard these as unworthy activities—but because we know that you are as mindful of the constraints on discretionary spending as we are.

As Secretary Bodman has observed, the Department of Energy could more accurately be referred to as the Department of Nuclear Weapons, Radioactive Cleanup, Science and Energy—in that order—if the Department's name were to more accurately capture its activities and the priority placed on them as reflected by our investments. It surprises many to learn that we spend more each year to cleanup Hanford, roughly $1.8 billion dollars, than we do annually on our entire portfolio of applied energy Research and Development (R&D), which is approximately $1.5 billion dollars. To put it bluntly, this is a budget that begins to put the "energy" back in the Department of Energy. Not just in

the applied energy programs, but in the science programs that can contribute new thinking and new approaches in meeting our energy challenges. We are determined to make the activities in basic sciences more relevant and more strongly linked to the applied energy programs working to advance practical energy technologies in areas such as solar, nuclear, hydrogen and biomass. At a time when this nation is concerned about energy security and clamoring for new clean energy solutions, we should strive to do nothing short of that.

With respect to the applied energy technologies, the President's **Advanced Energy Initiative** provides a 22 percent increase for research that can help reduce America's dependence on foreign oil and advance clean energy technologies. The FY 2007 Budget proposes $149.7 million for Biomass and Biorefinery Systems Research and Development (R&D) program to support the new **Biofuels Initiative** to develop cost competitive ethanol from cellulosic materials (agricultural wastes, forest residues, and bioenergy crops) by 2012. In addition, the budget request continues to pursue the vision of reducing America's dependence on foreign oil, reducing air pollution, and reducing greenhouse gas emissions through the development of new technologies, including hydrogen. The FY 2007 Budget requests a total of $289.5 million (including $1.4 million requested by the Department of Transportation) to support implementation of the **President's Hydrogen Fuel Initiative**. The FY 2007 Budget also provides a 27 percent increase for advanced battery technologies that can improve the efficiency of conventional hybrid electric vehicles (HEV) and help make "plug-in" HEVs commercially viable.

To help develop clean, affordable electricity, the FY 2007 Budget includes $148.4 million for a new **Solar America Initiative** to develop cost competitive solar photovoltaic technology by 2015. The FY 2007 also advances the Administration's commitment to the **FutureGen** project, which will establish the capability and feasibility of co-producing electricity and hydrogen from coal with near-zero atmospheric emissions of pollutants and greenhouse gasses.

Any serious effort to stabilize greenhouse gasses in the atmosphere while providing the increasing amounts of energy for economic development and growth requires the expanded use of nuclear energy. This will inevitably require us to address the spent fuel and proliferation challenges that confront the expanded, global use of nuclear energy. Therefore, the Department's FY 2007 budget features $250 million to begin investments in the **Global Nuclear Energy Partnership (GNEP)**, a comprehensive approach to enable an expansion of nuclear power in the U.S. and around the world, to promote non-proliferation goals; and to help resolve nuclear waste disposal issues. GNEP is a complex, challenging undertaking that will take many years to realize, which is why the Department proposes to begin research now.

As a complement to the GNEP strategy, the Department will continue to pursue a permanent geologic storage site for nuclear waste at **Yucca Mountain**, and the FY 2007 budget includes $544.5 million to support this goal. Based on technological advancements that would be made through GNEP, the volume and radiotoxicity of waste requiring permanent disposal at Yucca Mountain will be greatly reduced, delaying the need for an additional repository indefinitely.

GNEP builds upon the successes of programs initiated under President Bush's leadership to encourage the construction of new nuclear power plants here in the U.S. The FY 2007 budget includes $632.7 million for nuclear energy programs, a $97.0 million increase above the FY 2006 appropriation. In addition to the $250 million for GNEP within the **Advanced Fuel Cycle Initiative, Generation IV** (Gen IV) research and development ($31.4 million) will improve the efficiency, sustainability, and proliferation resistance of advanced nuclear systems, and Nuclear Power 2010 ($54.0 million) will lead the way, in a cost-sharing manner, for industry to order new, advanced light-water reactors by the end of this decade. In addition, ongoing implementation of the Energy Policy Act of 2005 (EPACT) will establish federal insurance to protect sponsors of the first new nuclear power plants against the financial impact of certain delays during construction or in gaining approval for operation that are beyond the sponsors' control.

The Department of Energy's budget request remains mindful of our legacy obligations. To meet our **environmental cleanup** commitments arising from nuclear activities during the Manhattan Project and the Cold War, the budget submission requests $5.8 billion to clean up legacy nuclear waste sites. DOE has accelerated cleanup at the legacy nuclear waste sites and recently announced completion of cleanup at Rocky Flats, a former nuclear weapons plant located outside of Denver, Colorado. In 2006, DOE will also complete environmental cleanup of the Fernald and Columbus sites in Ohio, and several other sites as well.

To provide better context for programmatic decisions, the Department expanded the development of **five-year budget plans.** We still have work ahead of us to make this planning more rigorous and meaningful, but we have made the start.

And at the behest of Secretary Bodman, we are working to institute straight-forward operating principles which set the tone for further improving the management of the Department. These principles are:

- Accept no compromises in safety and security
- Act with a sense of purposeful urgency
- Work together, treating people with dignity and respect
- Make the tough choices
- Keep our commitments
- Manage Risk through informed decisions

ADVANCING AMERICA'S ECONOMIC AND ENERGY SECURITY

Turning now to some of the specific proposals in the FY 2007 budget, the request of $1.2 billion for **energy efficiency and renewable energy** activities reallocates resources to emphasize technologies with the potential for reducing our growing reliance on oil imports and for producing clean electricity with reduced emissions. It includes two new Presidential initiatives; Biofuels and Solar America. The FY 2007 budget proposes $149.7 million for the **Biofuels Initiative** to develop by 2012 affordable, domestically produced bio-based transportation fuels, such as ethanol, from cellulosic feedstocks (such as agricultural wastes, forest residues, and bioenergy crops), and encourage the

development of biorefineries. Biomass has the promise to deliver a plentiful domestic energy resource with economic benefits to the agricultural sector, and to directly displace oil use. The **Solar America Initiative** accelerates the development of solar photovoltaics, a technology that converts energy from the sun into electricity. Further development can help this emissions-free technology achieve efficiencies to make it cost-competitive with other electricity generation sources by 2015. The FY 2007 Budget provides $148.4 million for the **Solar Energy Program** that comprises the initiative.

In addition to funding increases for biomass and solar energy, the Energy Efficiency and Renewable Energy budget request includes $195.8 million to support continued research and development in **hydrogen and fuel cell technology** which holds the promise of an ultra-clean and secure energy option for America's energy future. The increase of $40.2 million above the FY 2006 appropriation accelerates activities geared to further improve the development of hydrogen production and storage technologies, and evaluate the use of hydrogen as an emissions-free transportation fuel source. The President's **Hydrogen Fuel Initiative** is funded at $289.5 million and includes $195.8 million for DOE's Energy Efficiency and Renewable Energy program, $23.6 million for DOE's Fossil Energy program, $18.7 million for DOE's Nuclear Energy program, $50.0 million for DOE's Science program, and $1.4 million for the Department of Transportation.

While the budget proposes increases for Biomass, Solar and Hydrogen research, the Geothermal Program will be closed out in FY 2007 using prior year funds. The 2005 Energy Policy Act amended the Geothermal Steam Act of 1970 in ways that should spur development of geothermal resources without the need for subsidized Federal research to further reduce costs.

Nuclear power, which generates 20 percent of the electricity in the United States, contributes to a cleaner, more diverse energy portfolio. In FY 2007 a total of $632.7 million is requested for nuclear energy activities. Within the total, $250 million will support the **Global Nuclear Energy Partnership (GNEP)**. GNEP is a comprehensive strategy to enable an expansion of nuclear power in the U.S. and around the world, to promote nuclear nonproliferation goals; and to help resolve nuclear waste disposal issues.

GNEP will build upon the Administration's commitment to develop nuclear energy technology and systems, and enhance the work of the United States and our international partners to strengthen nonproliferation efforts. GNEP will accelerate efforts to:

- Enable the expansion of emissions-free nuclear power domestically and abroad;
- Reduce the risk of proliferation; and
- Utilize new technologies to recover more energy from nuclear fuel and dramatically reduce the volume of nuclear waste.

Through GNEP, the United States will work with key international partners to develop new recycling technologies that do not result in separated plutonium, a traditional proliferation risk. Recycled fuel would then be processed through advanced burner reactors to extract more energy, reduce waste and actually consume plutonium, dramatically reducing proliferation risks. As part of GNEP, the U.S. and other nations with advanced nuclear technologies would ensure developing nations a reliable supply of

nuclear fuel in exchange for their commitment to forgo enrichment and reprocessing facilities of their own, also alleviating a traditional proliferation concern.

GNEP will also help resolve America's nuclear waste disposal challenges. By recycling spent nuclear fuel, the heat load and volume of waste requiring permanent geologic disposal would be significantly reduced, delaying the need for an additional repository indefinitely.

The Administration continues its commitment to open and license Yucca Mountain as the nation's permanent geologic repository for spent nuclear fuel, a key complement to the GNEP strategy. Managing and disposing of commercial spent nuclear fuel in a safe and environmentally sound manner is the mission of DOE's Office of Civilian Radioactive Waste Management (RW).

To support the near-term domestic expansion of nuclear energy, the FY 2007 budget seeks $54.0 million for the **Nuclear Power 2010** program to support continued industry cost-shared efforts to reduce the barriers to the deployment of new nuclear power plants. The technology focus of the Nuclear Power 2010 program is on Generation III+ advanced light water reactor designs, which offer advancements in safety and economics over the Generation III designs. If successful, this seven-year, $1.1 billion project (50% to be cost-shared by industry) could result in a new nuclear power plant order by 2009 and a new nuclear power plant constructed by the private sector and in operation by 2014.

Funding of $1.8 million is provided in FY 2007 to implement a new program authorized in the recently enacted Energy Policy Act of 2005. The program will allow DOE to offer **risk insurance** to protect sponsors of the first new nuclear power plants against the financial impact of certain delays during construction or in gaining approval for operation that are beyond the sponsors' control. This program would cover 100 percent of the covered cost of delay, up to $500 million for the first two new reactors and 50 percent of the covered cost of delay, up to $250 million each, for up to four additional reactors. This risk insurance offers project sponsors additional certainty and incentive to provide for the construction of a new nuclear power plant by 2014.

The FY 2007 budget request includes $31.4 million to continue to develop Next-generation nuclear energy systems known as **Generation IV (GenIV)**. These technologies will offer the promise of a safe, economical, and proliferation resistant source of clean, reliable, sustainable nuclear power with the potential to generate hydrogen for use as a fuel. Resources in FY 2007 for GenIV will be primarily focused on long-term research and development of the Very-High Temperature Reactor.

The **University Reactor Infrastructure and Educational Assistance** program was designed to address declining enrollment levels among U.S. nuclear engineering programs. Since the late 1990s, enrollment levels in nuclear education programs have tripled. In fact, enrollment levels for 2005 have reached upwards of 1,500 students, the program's target level for the year 2015. In addition, the number of universities offering nuclear-related programs also has increased. These trends reflect renewed interest in nuclear power. Students will continue to be drawn into this course of study, and universities, along with nuclear industry societies and utilities, will continue to invest in

university research reactors, students, and faculty members. Consequently, Federal assistance is no longer necessary, and the 2007 Budget proposes termination of this program. The termination is also supported by the fact that the program was unable to demonstrate results from its activities when reviewed using the Program Assessment Rating Tool (PART), supporting the decision to spend taxpayer dollars on other priorities. Funding for providing fresh reactor fuel to universities is included in the Research Reactor Infrastructure program, housed within Radiological Facilities Management.

Recognizing the abundance of coal as a domestic energy resource, the Department remains committed to research and development to promote its clean and efficient use. U.S. coal accounts for twenty-five percent of the world's coal reserves. For the last three years, the Department has been working to launch a public-private partnership, **FutureGen**, to develop a coal-based facility that will produce electricity and hydrogen with essentially zero atmospheric emissions. This budget includes $54 million in FY 2007 and proposes an advance appropriation of $203 million for the program in FY 2008. Funding for FutureGen will be derived from rescinding $203 million in balances no longer needed to complete active projects in the Clean Coal Technology program. Better utilization of these fund balances to support FutureGen will generate real benefits for America's energy security and environmental quality.

The budget request for FY 2007 includes $4.6 million to support **Alaska Natural Gas Pipeline** activities authorized by Congress in late 2004. Within the total amount of $4.6 million, $2.3 million will be used to support an Office of the Federal Coordinator and the remaining $2.3 million will support the **Loan Guarantee** portion of the program. Once constructed, this pipeline will be capable of delivering enough gas to meet about ten percent of the U.S. daily natural gas needs.

The budget request proposes to terminate the oil and gas research and development programs, which have sufficient market incentives for private industry support, to other energy priorities.

The Energy Policy Act of 2005 established a new mandatory oil and gas research and development (R&D) program, called the Ultra-Deep and Unconventional Natural Gas and Other Petroleum Research program, that is to be funded from Federal revenues from oil and gas leases beginning in FY 2007. These R&D activities are more appropriate for the private-sector oil and gas industry to perform. Therefore, this budget proposes to repeal the program through a future legislative proposal, although we will faithfully execute current law until such time that Congress acts affirmatively on that legislative proposal.

The FY 2007 budget includes $124.9 million for a refocused portfolio of energy reliability and assurance activities in the **Office of Electricity Delivery and Energy Reliability.** This will support research and development in areas such as high temperature superconductivity, and simulation work needed to enhance the reliability and effectiveness of the Nation's power supply. This office also operates the Department's energy emergency response capability and led DOE's support effort during and after the Gulf Coast hurricanes.

ENSURING A CLEAN ENVIRONMENT

To deliver on the Department's environmental cleanup commitments following 50 years of nuclear research and production from the Cold War, in 2002 the Environmental Management program underwent a major transformation that would enable the Department to perform its cleanup activities faster than previously estimated. Working in partnership with the public, states and regulators, the Environmental Management (EM) program has made significant progress in the last four years to shift away from risk management toward risk reduction. By the end of FY 2006, the cleanup of a total of eighty-six DOE nuclear legacy sites will be complete. This includes the recently announced completion of Rocky Flats and the anticipated FY 2006 completion of Fernald and Columbus sites in Ohio. While encouraged by the results demonstrated thus far, the program continues to stay focused on the mission and is working aggressively to enhance and refine project management approaches while addressing the regulatory and legal challenges associated with this complex environmental cleanup program.

In FY 2007, the budget includes $5.8 billion to continue environmental cleanup with a focus on site completion, with eight sites or areas to be completed in the 2007 to 2009 timeframe. This budget request is reduced from the FY 2006 budget request of $6.5 billion primarily reflecting cleanup completion at some sites in FY 2006 and the subsequent transfer of post-closure work activities. As cleanup work is completed over the next five years at sites without a continuing mission, EM will transfer long-term surveillance and monitoring activities and management of pension and benefit programs to the Office of Legacy Management. For those with continuing missions, these activities will be transferred to the cognizant program office.

The $5.8 billion budget request remains focused on EM's mission of reducing risk by cleaning up sites–consequently also reducing environmental liability–and will support the following key activities:

- Stabilizing radioactive tank waste in preparation for disposition (about 30 percent of the FY 2007 request for EM);
- Dispositioning transuranic and low-level wastes (about 15 percent of the request for EM);
- Storing and safeguarding nuclear materials (about 15 percent of the request for EM);
- Decontaminating and decommissioning excess facilities (about 20 percent of the request for EM); and
- Remediating major areas of our large sites (Hanford, Savannah River Site, Idaho National Laboratory, and Oak Ridge Reservation) (about 10 percent of the request for EM)

One of the significant cleanup challenges is the management and treatment of high-level radioactive liquid waste at the **Hanford Waste Treatment and Immobilization Plant** (WTP). In FY 2007, $690 million is proposed for the WTP project. The plant is a critical component of the program's plans to clean up 53 million gallons of radioactive waste currently stored in 177 aging underground storage tanks.

By June 2006, the U.S. Army Corps of Engineers is expected to complete an independent cost validation, deploying more than 25 professionals experienced in cost estimating, design, construction, and commissioning. The Department plans to utilize the results from several reviews to validate cost and schedule for this project.

The Department, while responsible for the cleanup and disposal of high-level radioactive waste generated from the Cold War, is also responsible for managing and disposing of commercial spent nuclear fuel in a safe and environmentally sound manner. The latter responsibility is the mission of DOE's **Office of Civilian Radioactive Waste Management** (RW).

The Nation's commercial and defense high-level radioactive waste and spent nuclear fuel will be safely isolated in a geologic repository to minimize risk to human health and the environment. The FY 2007 budget requests $544.5 million to establish a geologic repository at **Yucca Mountain**, Nevada. This Administration is strongly committed to establishing Yucca Mountain as the Nation's first permanent repository for high-level waste and spent nuclear fuel. Licensing and developing a repository for the disposal of these materials will help set the stage for an expansion of nuclear power through the President's GNEP initiative, which could help to diversify our energy supply and support our economic future. Permanent geological disposal at Yucca Mountain offers the safest, most environmentally sound solution for dealing with this challenge.

To further advance the Administration's commitment to the establishment of Yucca Mountain, the Department intends to submit to Congress legislation to address land withdrawal, funding and other issues that are important to the program's success.

As the Environmental Management program completes cleanup of sites throughout the DOE complex, management of post closure activities at these sites will transfer to the **Office of Legacy Management** (LM). In FY 2007, $201.0 million is proposed to provide long-term surveillance and maintenance, long-term response actions, oversight and payment of pensions and benefits for former contractor retirees, and records management activities at closure sites transferred to LM. The majority of funding ($122.4 million) is associated with the transfer of post closure responsibilities and funding of three major sites from EM to LM in FY 2007. These sites are: Rocky Flats, $90.8 million; Fernald, $26.5 million; and a group of sites known as the Nevada off sites, $5.1 million. The cumulative effect of these three transfers results in a 150 percent increase in the Legacy Management budget matched by a corresponding decrease in the Environmental Management budget.

IMPROVING MANAGEMENT AT THE DEPARTMENT OF ENERGY

Underpinning and supporting all of the programs above, the Department of Energy has continued to make strides in meeting President Bush's challenge to become more efficient, more effective, more results-oriented, and more accountable for performance. Over the past four years, the President's Management Agenda (PMA) has been the framework for organizing the Department's management reform efforts.

To better manage human capital, the Department implemented a performance management system to link employee achievement at all levels with mission accomplishment. In FY 2006, DOE will publish, communicate and implement a revised five-year Human Capital Management Strategic Plan as well as a formal leadership succession plan.

In FY 2006 and FY 2007, DOE will expand the availability of financial data in support of decision-making by continuing to implement the Integrated Management Navigation (I-MANAGE) system, specifically in the areas of budget and procurement through the Integrated Data Warehouse (IDW). The Department continues to apply Earned Value Management principles to each of its major information technology investments. In addition, DOE is partnering with other government agencies to develop a standardized and integrated human resources information system, and to develop a consolidated grants management system.

The Department continued its effort to institutionalize multi-year planning and strengthen the link between program performance and resource allocation decisions. The Program Assessment Rating Tool (PART) continues to be used to promote improved program performance. For programs that have not formally been reviewed by OMB, the PART process has been used for internal self-assessment.

A number of important milestones were reached in Real Property Management including the approval of the Asset Management Plan (AMP) by the Deputy Secretary. The AMP outlines an overall framework for the strategic management of the Department's $77 billion portfolio of Real Property Assets. Additionally, the 20,000 real property records in the Facilities Information Management System, the Department's repository of real property information, were populated and updated as required by the Federal Real Property Council for support of the Federal Real Property Profile. This information will be used to support real property management decisions department-wide.

As these examples indicate, the Department of Energy is using the PMA to address its many management challenges. The Department is working to become more streamlined, more efficient, and more results-oriented in FY 2007 and beyond.

CONCLUSION

Energy is central to our economic and national security. Indeed, energy helps drive the global economy and has a significant impact on our quality of life and the health of our people and our environment. The FY 2007 budget request balances the need to address short-term challenges while planning for long-term actions. The request reflects our belief that basic science research should remain strong if we are to remain competitive with our global partners. The request contains bold new initiatives in nuclear, biomass, and solar energy. It continues the President's strong commitment to clean coal, hydrogen, and fusion. The request honors our commitment to deal with civilian nuclear waste, as well as legacy waste from the Cold War, and to further our already successful nonproliferation programs in order to help ensure a safer world for generations to come.

This completes our testimony, and we would be pleased to respond to your questions today or in the future.