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ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 2010

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

ON

H.R. 3183/S. 1436

AN ACT MAKING APPROPRIATIONS FOR ENERGY AND WATER DEVELOPMENT FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 2010, AND FOR OTHER PURPOSES

Department of Defense—Civil
Department of Energy
Department of the Interior
Nondepartmental Witnesses

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ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 2010

TUESDAY, MAY 19, 2009

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:22 a.m., in room SD–138, Dirksen Senate Office Building, Hon. Byron L. Dorgan (chairman) presiding.

Present: Senators Dorgan, Murray, Feinstein, Reed, Tester, Bennett, Cochran, and Alexander.

DEPARTMENT OF ENERGY

STATEMENT OF HON. STEVEN CHU, SECRETARY

OPENING STATEMENT OF SENATOR BYRON L. DORGAN

Senator DORGAN. I'm going to call the hearing to order. This is a hearing of the Energy and Water Subcommittee of the Appropriations Committee. Dr. Chu, we welcome you to the subcommittee this morning. I'm sorry for the inconvenience. We're starting a few minutes late. I think probably all three of us were on the floor of the Senate, waiting for a 10 or 10:15 vote to occur, and we were just informed it won't occur now, but will occur sometime in the future, either in the short term or the longer term, any moment, or perhaps sometime today. So that's the reason I was a bit delayed.

We have asked Secretary Chu from the Department of Energy to come and present and discuss the 2010 budget. My expectation is that we will be truncated a bit and probably be interrupted with a short recess for a cloture vote. I want to note that we will have Administrator D'Agostino before the subcommittee on June 2, to discuss the National Nuclear Security Administration's budget request. We're free to discuss any of that today as well, but I simply want to remind members that there will be further opportunity to discuss that in 2 weeks' time.

This year's budget of $27.1 billion for the Department is basically flat compared to 2009 appropriation numbers. A substantial sum of money, a great deal of money, was provided—$38.7 billion as a part of the American Recovery and Reinvestment Act. Those numbers, of course, were not intended to be a substitute for the regular budget. They were intended for the purpose of moving money around the country, getting people to work, getting contractors working and building projects and doing things that are of substantial value, and creating assets for the future.

I was a bit surprised when I received the President's budget. Because I felt that with the economy recovery funds, a very substantial amount of money, $38.7 billion, to the Department, that we might see a very different approach in trying to deal with the priorities in the Department. And I'm going to talk to you today about some of the strengths that I see in the budget request and some of the concerns that I have.

I think there are some good stories in the funding increase proposals. I think we have to maximize the capability of renewable energy in our country. In order to do that, we not only have to say, "Here's where the country's headed," and plot a map to get there, but we have to create the capability to have an interstate transmission capability that connects all of America. That's not easy, that's very difficult to do.

The science budget is robust. There's also a proposal for eight new Energy Innovation Hubs, which I view as a means of helping the Department of Energy address what normally people call the Valley of Death, the dilemma of getting technology transferred from basic science to applied research and then out into the marketplace, so that it accomplishes what we intend to accomplish in the field of energy for our country's future.

I'm going to just truncate my statement. I will, during the questioning, have an opportunity to go through a wide range of subjects with you, Secretary Chu. I think what I'd like to do, with the permission of our colleagues, is call on Senator Bennett for a brief opening statement, call on the Secretary to make a presentation. Perhaps about that time, we'll have to go over for the cloture vote. And then come back and have substantial opportunity this morning to ask questions of the Secretary.

If that is all right with my colleagues, let me call on the ranking member, Senator Bennett.

OPENING STATEMENT OF SENATOR ROBERT F. BENNETT

Senator BENNETT. Thank you very much, Mr. Chairman. I will abbreviate my opening statement. Mr. Secretary, welcome to the subcommittee. We're glad to have you here in your first experience in defending your budget. And having served in the executive branch myself, I know that this isn't entirely your budget, that the OMB has had a few suggestions, shall we say. And you may or may not be pleased with those, but I won't call on you to defend or comment on those.

Just a few highlights, you apply additional resources to programs that appear to already enjoy some surpluses, but fail to address chronic pension shortfalls that have been created by the poor market performance. Now, I understand that these could not be foreseen, but I don't think it's acceptable to ignore the estimated $500 to $600 million shortfall spread across the Department and the impact that that will have in undercutting scientific and cleanup missions.

I continue my interest in NNSA and the labs, and would be interested in talking to you about that and some of the comments that you've made there. The Office of Science and Renewable Energy has received nearly 50 percent of the stimulus funding, and it seems unlikely that this will be spent before the 2010 deadline.

So we could talk about how that could be shifted, it's not a matter of I don't favor this kind of thing, but you can only shovel so much money out the door in certain circumstances, and that's one thing that I would look at.

Funding for environmental cleanup is down $161 million. There are two other factors that significantly increase the deficit of this program. It fails to fully fund the pension shortfalls that will reduce environmental cleanup by an estimated $400 million in fiscal year 2010, and I've included an amendment to the budget resolution to mitigate the impacts that budgets will have on the cleanup. And I'm grateful, Mr. Chairman, for your support in that effort.

The budget includes a $200 million tax on uranium fuel to be paid by utilities, offsetting this to our overall budget authority. If we don't do this—and it's frankly a little bit of a budget gimmick—it creates a $200 million shortfall in our bill. And this revenue isn't necessary, as there is $4.5 billion in existing balances. Those kinds of details, we would talk through.

So with that, Mr. Chairman, I will leave it there and do the best we can to move the hearing forward.

Senator DORGAN. Senator Bennett, thank you very much. Mr. Secretary, I know that you personally worked hard on the budget that was presented to us, but you did so with very limited time and also with very limited staff. I regret that a good number of your nominations are all being held up. I have spoken to the Senator that has the hold. It's a hold that's very Byzantine, as far as I'm concerned, because that Senator has been promised a hearing date, which is what he wanted. So I hope that you get those nominations through so that you can have a full complement of staff.

But having done what you have done, please tell us the justification for the administration's budget proposals for the Department of Energy. Mr. Secretary, thank you for being here.

STATEMENT OF HON. STEVEN CHU

Secretary CHU. Okay, thank you. Chairman Dorgan, Ranking Member Bennett, members of the subcommittee, I am pleased to be before you today to present President Obama's fiscal year 2010 budget request for the Department of Energy.

The President's 2010 budget seeks to usher in a new era of responsibility, an era in which we invest to create new jobs and lift our economy out of recession, while laying a new foundation for our long-term growth and prosperity.

President Obama's 2010 budget invests in clean, renewable sources of energy, so we can reduce our dependence on oil, address the threat of a changing climate, and become the world leader in new, clean energy economy.

The 2010 budget request for the Department of Energy is $26.4 billion, essentially flat compared to fiscal year 2009, and it complements the significant energy investments in the American Recovery and Reinvestment Act. This budget request emphasizes science, discovery, and innovation to support the key missions of the Department.

My written testimony includes an extensive breakdown of this budget, and I'd like to use this time briefly to highlight a few numbers and areas of particular importance. To promote nuclear secu-

rity in the President's ambitious non-proliferation goals, the budget requests $9.9 billion for the National Nuclear Security Administration.

To continue to accelerate legacy cleanup of our Nation's nuclear weapons production, the budget requests $5.8 billion for the Office of Environmental Management. To bolster the Department's commitment to scientific discovery, the budget requests $4.9 billion for the Office of Science. And fostering the revolution in energy supply and demand while positioning the United States to lead on a global climate change policy, the budget includes requests for a range of energy investments, including $882 million for the Office of Fossil Energy, $845 million for the Office of Nuclear Energy, and $2.3 billion for the Office of Energy Efficiency and Renewable Energy.

That clean energy funding includes several notable strategic investments, even as this budget holds the line on spending overall. Solar power will receive $320 million, an increase of 82 percent. Wind energy is funded at $75 million, an increase of 36 percent. Funding for clean vehicle programs is up 22 percent to $333 million, and funding for building technologies is increased by 69 percent to $238 million.

Another significant increase is in the Office of Electricity Delivery and Energy Reliability, which received $208 million, 52 percent more than in fiscal year 2009, as it works to develop a new smart electric grid. The request also includes funding to implement the Loan Guarantee Program and Advanced Technology Vehicle Manufacturing Loan Program.

With that brief overview, I want to turn to one of my top priorities in the budget as Secretary, amplifying the Office of Science's fundamental research with innovative approaches to solving the Nation's energy problems. Specifically, this budget request includes three initiatives designed to cover a spectrum of basic to applied science to maximize our chances of energy breakthroughs. The fiscal year 2010 budget will launch eight Energy Innovation Hubs, while the Energy Frontier Research Centers and the ARPA–E were launched last month.

Let me briefly explain the differences among these initiatives and why I believe launching these hubs is so important. The EFRCs are small-scale collaborations, predominately universities, that focus on overcoming known hurdles in basic science that block energy breakthroughs, not on developing energy technologies themselves.

ARPA–E is a highly entrepreneurial funding model that explores potentially revolutionary technologies that are too risky for industry to fund. The proposed Energy Innovation Hubs will take a very different approach. They will be multi-disciplinary, highly collaborative teams, ideally working under one roof to solve priority technology challenges, such as artificial photosynthesis, or creating fuels from sunlight.

A few years ago, I changed the course of my scientific work to focus on solving our energy and climate challenges because of the urgency of this issue and because I remain optimistic that science can offer better solutions than we can imagine today. But those solutions will only come if we harness the creativity and ingenuity and intellectual horsepower of our best scientists in the right way.

I'm convinced that launching Energy Innovation Hubs is a critical next step in this effort. Bringing together the best scientists from different disciplines in a collaborative effort is our best hope of achieving priority goals, such as making solar energy cost competitive with fossil fuels, or developing new building designs that use dramatically less energy, or developing an economical battery that will take your car 300 miles without recharging.

These are the breakthroughs we need, and the Energy Innovation Hubs will help us achieve them. I saw the power of truly collaborative science like this firsthand during my time at Bell Laboratories. I believe that to solve the energy problem, the Department of Energy must strive to be the modern version of Bell Laboratories in energy research, and this is what these hubs will do. These investments will pay for themselves many times over and enhance America's competitiveness on the green energy jobs of tomorrow.

A final initiative in the fiscal year 2010 budget is a comprehensive K–20+ science and engineering effort called RE–ENERGYSE, standing for REgaining our ENERGY Science and Engineering Edge, funded at $115 million. Through RE–ENERGYSE, the Department will partner with the National Science Foundation to educate thousands of students at all levels in the fields that contribute to our fundamental understanding of energy science and engineering systems.

PREPARED STATEMENT

It is my firm belief that the short-term impact of the Recovery Act, combined with the long-term vision in President Obama's fiscal year 2010 budget, will lay the necessary groundwork for a clean economy. Both President Obama and I look forward to working with the 111th Congress to make this vision a reality. I appreciate this opportunity to appear before you, and I'm happy to take questions at this time.

[The statement follows:]

PREPARED STATEMENT OF HON. STEVEN CHU

Chairman Dorgan, Ranking Member Bennett, members of the subcommittee, I am pleased to be before you today to present President Obama's fiscal year 2010 budget request for the Department of Energy.

The President's 2010 budget seeks to usher in a new era of responsibility—an era in which we invest to create new jobs and lift our economy out of recession, while laying a new foundation for our long-term growth and prosperity.

The fiscal year 2010 budget request of $26.4 billion provides the next critical investment in a multi-year effort to address the interconnected challenges of economic uncertainty, U.S. dependence on oil, and the threat of a changing climate by transforming the way our Nation produces and consumes energy. Meeting these challenges will require both swift action in the near-term and a sustained commitment for the long term to build a new economy powered by clean, reliable, affordable and secure energy. We will also train the next generation of a technical workforce and the scientific researchers needed to maintain the United States' preeminent position in science and technology. At its core, this budget request emphasizes science, discovery, and innovation to support the key missions of the Department.

I want to note at the outset that in developing the fiscal year 2010 request the Department considered that the $38.7 billion of American Recovery and Reinvestment Act of 2009 (Recovery Act) funding received by the Department allows for the acceleration of a number of important commitments. The Recovery Act makes investments in energy conservation and renewable energy sources ($16.8 billion), environmental management ($6 billion), loan guarantees for renewable energy and elec-

tric power transmission projects ($6 billion), grid modernization ($4.5 billion), carbon capture and sequestration ($3.4 billion), basic scientific research ($1.6 billion), and the establishment of the Advanced Research Projects Agency-Energy (ARPA–E) ($400 million). These investments will help jumpstart the economy, save and create jobs, and serve as a down payment on addressing fundamental energy challenges, while reducing carbon emissions and U.S. dependence on oil.

INVESTING IN SCIENCE TO ACHIEVE TRANSFORMATIONAL DISCOVERIES

The fiscal year 2010 budget request supports our strategic framework by:

—Investing in science to achieve transformational discoveries;
—Fostering the revolution in energy supply and demand while positioning the United States to lead on global climate change policy;
—Increasing American economic competitiveness;
—Maintaining the nuclear deterrent, reducing the risk of nuclear proliferation, and advancing nuclear legacy cleanup; and
—Improving the management of the Department.

The President has committed to doubling Federal investment in basic research over 10 years. The Department will support this commitment by investing in basic and applied research, creating new incentives for private innovation, and promoting breakthroughs in energy. Our Nation's ability to sustain a growing economy and a rising standard of living for all Americans depends on continued advances in science and technology. Scientific and technological discovery and innovation are the major engines of increasing productivity and are indispensable to ensuring economic growth, job creation, and rising incomes for American families in the technologically-driven 21st century.

As Secretary, one of my top priorities is to amplify the fundamental research undertaken by the Office of Science with novel approaches to solving the Nation's energy problems. While the Department has made important contributions over the years, despite almost three decades of effort, we are still confronted by the fundamental problems of energy security and environmental degradation from our energy use. That is why I am proposing new approaches to solving the energy question. Specifically, this budget request includes three initiatives designed to cover the spectrum of basic to applied science to maximize our chances of energy breakthroughs. The fiscal year 2010 budget will launch eight Energy Innovation Hubs, while the Energy Frontier Research Centers (EFRCs) and ARPA–E were launched last month.

Let me briefly explain the differences and why I believe launching these Hubs is so important.

EFRCs are small-scale collaborations (predominantly at universities) that focus on overcoming known hurdles in basic science that block energy breakthroughs—not on developing energy technologies themselves.

ARPA–E is a highly entrepreneurial funding model that explores potentially revolutionary technologies that are too risky for industry to fund.

The proposed Energy Innovation Hubs will take a very different approach—they will be multi-disciplinary, highly collaborative teams ideally working under one roof to solve priority technology challenges, such as artificial photosynthesis (creating fuels from sunlight).

A few years ago, I changed the course of my scientific work to focus on solving our energy and climate challenges. I did so because of the great national and global urgency of this issue—but also because, as a scientist, I remain optimistic that science can offer us better solutions than we can imagine today. But those solutions won't come easily; they will only come if we harness the creativity and ingenuity and intellectual horsepower of our best scientists in the right way.

Having dedicated the last several years of my work to solving the energy challenge, I'm convinced that launching Energy Innovation Hubs is a critical next step in this effort. Bringing together the best scientists from different disciplines in collaborative efforts is our best hope of achieving priority goals such as making solar energy cost competitive with fossil fuels, or developing new building designs that use dramatically less energy, or developing an economical battery that will take your car 300 miles without recharging.

These are the breakthroughs we need—and the Energy Innovation Hubs will help us achieve them. I saw the power of truly collaborative science like this firsthand during my time at Bell Laboratories. I believe that to solve the energy problem, the Department of Energy must strive to be the modern version of Bell Labs in energy research, and that is what these Hubs will do.

The scientific collaboration the Hubs will foster will be unique and indispensable, and must be backed by a meaningful and sustained investment. These investments

will pay for themselves many times over, ensuring American leadership and American competitiveness when it comes to the green energy jobs of tomorrow.

The following is additional information about the three initiatives:

—*Energy Innovation Hubs.*—In fiscal year 2010 the Department proposes to fund eight multi-disciplinary Energy Innovation Hubs, at a total of $280 million. Modeled after the Department's Bioenergy Research Centers, the work of the Hubs will span from basic research to engineering development to commercialization and a hand-off to industry. Each Hub will be funded at $25 million per year, with one-time additional start-up funding of $10 million in the first year for renovation, equipment and instrumentation.

The Hubs will support cross-disciplinary research and development focused on the barriers to transforming energy technologies into commercially deployable materials, devices, and systems. They will advance highly promising areas of energy science and technology from their early stages of research to the point that the risk level will be low enough for industry to deploy them into the marketplace. While the intent is to provide a funding stream that is more dependable than the standard funding mechanisms, renewal after 5 years will not be automatic. To receive renewed funding, Hubs will be expected to be delivering exceptional scientific progress.

The research Hubs will explore the following topics: Solar Electricity; Fuels from Sunlight; Batteries and Energy Storage; Carbon Capture and Storage; Grid Materials, Devices, and Systems; Energy Efficient Building Systems Design; Extreme Materials; and Modeling and Simulation.

—*Energy Frontier Research Centers.*—In fiscal year 2010 the Department of Energy will continue to support Energy Frontier Research Centers (EFRC). Currently there are 46 EFRCs, funded at $2 to $5 million per year. These centers enlist the talents and skills of the very best scientists and engineers to address current fundamental scientific roadblocks to clean energy and energy security. Roughly one-third of the centers are supported by Recovery Act funding. These centers, involving almost 1,800 researchers and students from universities, national labs, industry, and non-profit organizations from 36 States and the District of Columbia, address the full range of energy research challenges in renewable and low-carbon energy, energy efficiency, energy storage, and cross-cutting science. EFRC researchers take advantage of new capabilities in nanotechnology, light sources that are a million times brighter than the sun, supercomputers, and other advanced instrumentation, much of it developed in collaboration with the Department of Energy's Office of Science.

—*Advanced Research Projects Agency-Energy (ARPA–E).*—ARPA–E is a new Department of Energy organization modeled after the Defense Advanced Research Projects Agency, created during the Eisenhower administration in response to Sputnik. The Recovery Act provided $400 million and the fiscal year 2010 budget requests $10 million for ARPA–E. The purpose of ARPA–E is to advance high-risk, high-reward energy research projects that can yield revolutionary changes in how we produce, distribute, and use energy. It will ensure that the United States maintains a technological lead in developing and deploying advanced energy technologies.

ARPA–E seeks out the best ideas and assembles teams that can move quickly to help bring the idea to market, and funds this work through grants that range between $500,000 and $10 million. Most projects will be funded with seed money that sunsets after 3 years. Research teams are expected to either make exceptionally rapid progress or bring their technology to the point the private sector can pick it up within that time.

These initiatives will be augmented with a broad educational effort that cuts across DOE program offices to inspire students and workers to pursue careers in science, engineering, and entrepreneurship specifically related to clean energy. This education effort will help to develop the scientific and technical expertise to sustain the new energy economy and increase American competitiveness.

—*RE–ENERGYSE (REgaining our ENERGY Science and Engineering Edge).*—As part of President Obama's recent address before the National Academy of Sciences on reinvigorating scientific research and innovation in the United States, the President announced a joint education initiative between the National Science Foundation and the Department of Energy to "inspire tens of thousands American students to pursue careers in science, engineering and entrepreneurship related to clean energy."

As part of this initiative, the Department will launch a comprehensive K–20+ science and engineering initiative, funded at $115 million in fiscal year 2010, to educate thousands of students at all levels in the fields contributing to the fundamental understanding of energy science and engineering systems.

This initiative, which complements the Department's other education efforts, will provide graduate research fellowships in scientific and technical fields that advance the Department's energy mission; provide training grants to universities that establish multidisciplinary research and education programs related to clean energy; support universities that dramatically expand energy-related research opportunities for undergraduates; build partnerships between community colleges and different segments of the clean tech industry to develop customized curriculum for "green collar" jobs; and increase public awareness, particularly among young people, about the role that science and technology can play in responsible environmental stewardship.

Office of Science

The fiscal year 2010 budget requests $4.9 billion for the Office of Science, a $184 million increase over fiscal year 2009. In general, the 2010 request will focus on breakthrough science while developing and nurturing science and engineering talent. It will also increase funding for climate science and continue America's role in international science and energy experiments. The budget also invests in the next generation of America's scientists by expanding graduate fellowship programs in critical energy-related fields. This funding builds upon the $1.6 billion provided in the Recovery Act for basic science programs at the Department of Energy.

The Office of Science supports investigators from more than 300 academic institutions and from all of the DOE laboratories. The fiscal year 2010 budget request will support about 25,000 Ph.D.s, graduate students, undergraduates, engineers, and technicians. Approximately 24,000 researchers from universities, national laboratories, industry, and international partners are expected to use the Office of Science's scientific user facilities. The fiscal year 2010 request supports the President's plan to increase Federal investment in the sciences and train students and researchers in critical fields, to invest in areas critical to our clean energy future, and to make the United States a leader on climate change.

Two of the Department's eight Energy Innovation Hubs are requested in the Office of Science in fiscal year 2010 ($70 million). These Hubs will bring together teams of experts from multiple disciplines to focus on two grand challenges in energy: the creation of fuels directly from sunlight without the use of plants or microbes and advanced methods of electrical energy storage.

The Office of Science supports a diverse number of research programs including:

—High-Energy Physics ($819 million)
—Nuclear Physics ($552 million)
—Biological and Environmental Research ($604 million)
—Basic Energy Sciences ($1.7 billion)
—Advanced Scientific Computing Research ($409 million)
—Fusion Energy Sciences ($421 million)

FOSTERING THE REVOLUTION IN ENERGY SUPPLY AND DEMAND WHILE POSITIONING THE UNITED STATES TO LEAD ON GLOBAL CLIMATE CHANGE POLICY

U.S. dependence on oil is a national security challenge. Furthermore, the United States has a responsibility to curb carbon emissions to mitigate the effects of global climate change. The fiscal year 2010 budget request will expand the use of low-carbon and renewable energy sources and efficiency, and support the Smart Grid. Deploying these technologies will position the United States to lead on global climate change policy.

Energy Efficiency and Renewables

Achieving these goals requires changes to both the demand and supply of energy. DOE is addressing both by improving the Nation's energy efficiency to reduce energy demand and by investing in technologies and approaches to transform energy supply and transmission. The fiscal year 2010 budget request of $2.3 billion for the Office of Energy Efficiency and Renewable Energy (EERE) will transform the Nation's energy infrastructure by investing in a variety of renewable sources of electricity generation and deploying technologies to reduce our dependence on oil and decrease energy use in homes, transportation, and industry. These sources of energy will reduce the production of GHG emissions and usher in a revitalized economy built on the next generation of domestic production. Investments in efficiency R&D, grants to States and weatherization assistance will have immediately tangible benefits by reducing energy use, lowering energy bills, and reducing GHG emissions and helping to create jobs across the country.

This budget request for EERE provides a diverse portfolio of solutions to our energy and environmental challenges. This starts with improving energy efficiency, which can be one of the cheapest, cleanest means of reducing greenhouse gas emis-

sions. The budget includes significant increases in several programs in support of the President's efforts to promote energy efficiency, including these increases:

—Building Technology Program $238 million (+$98 million or 69 percent)

—Vehicle Technology Program $333 million (+$60 million or 22 percent); and

The budget continues the shift to clean and renewable energy, including these increases:

—Solar Energy Program $320 million (+$145 million, or 82 percent);

—Wind Energy Program $75 million (+$20 million, or 36 percent); and

—Geothermal Program $50 million (+$6 million or 14 percent.)

The budget also has funding for:

—Fuel Cells Technology ($68.2 million)

—Biomass and Biorefinery Systems R&D ($235 million)

—Water Power ($30 million)

—Industrial Technologies ($100 million)

—FEMP ($32.3 million)

—Weatherization ($220 million)

—State Energy Program Grants ($75 million)

Electricity Transmission and Reliability

The Nation's ability to meet the growing demand for reliable electricity is challenged by an aging electricity transmission and distribution system and by vulnerabilities in the U.S. energy supply chain. Despite increasing demand, the United States has experienced a long period of underinvestment in power transmission and infrastructure maintenance. The majority of the power delivery system was built on technology developed in the 1960s, 1970s and 1980s and is limited by the speed with which it can respond to disturbances. This limitation increases the vulnerability of the power system to outages that can spread quickly and have regional effects. Deploying the next generation of clean energy sources will require modernization of U.S. energy infrastructure which will rely on digital network controls and transmission, distribution and storage breakthroughs.

The proposed fiscal year 2010 Office of Electricity Delivery and Energy Reliability budget provides $208 million, an increase of 52 percent over fiscal year 2009, and builds on the "smart grid" investments and other activities to modernize and secure the electric grid provided by $4.5 billion of Recovery Act funds, supporting the following areas:

—Clean energy transmission and reliability ($42 million)

—Smart grid research and development ($67 million)

—Energy storage ($15 million)

—Cyber security for energy delivery systems ($50 million)

—Permitting, siting and analysis ($6.4 million)

—Infrastructure security and energy restoration ($6.2 million)

Fossil Energy

The fiscal year 2010 budget request of $882 million for the Office of Fossil Energy (FE) will help ensure that the United States can utilize traditional domestic energy resources in a clean and affordable manner. The United States has 25 percent of the world's coal reserves, and fossil fuels currently supply 86 percent of the Nation's energy. Low-carbon emissions coal plants and production of methane (natural gas) from gas hydrates will help allow fossil fuels to be used as abundant and low-carbon emitting energy resources. In direct support of the Department of Energy's Energy Security mission, $229 million of the $882 million has been requested to provide operations, maintenance and repair funding for a Strategic Petroleum Reserve program that is environmentally responsible and fully responsive to the needs of the Nation and the public, protecting against potential disruptions in foreign and domestic petroleum supplies.

The Department is committed to advancing Carbon Capture and Storage (CCS) technologies in order to promote cleaner and efficient use of fossil fuels. The $3.4 billion in Recovery Act funds, combined with $222 million requested in fiscal year 2010 for CCS research and development, is the keystone of the Department's clean coal research program which seeks to establish the capability of producing electricity from coal with dramatically reduced atmospheric emissions of carbon dioxide.

In fiscal year 2010, the Energy Innovation Hub for CCS will focus on enabling fundamental advances and discovery of novel and revolutionary capture/separation approaches to dramatically reduce the energy penalty and cost associated with CO_2 capture.

The fiscal year 2010 budget request for FE funds the following areas:

—Coal ($403.9 million) including $179.9 million for carbon sequestration

—Fossil energy research and development ($617.6 million)

—Naval Petroleum and Oil Shale Reserves ($23.6 million)
—Strategic Petroleum Reserve ($229.1 million)
—Northeast Home Heating Oil Reserve ($11.3 million)

Nuclear Energy

The $845 million budget request for the Office of Nuclear Energy (NE) recognizes that nuclear energy is a fundamental component of the energy mix which currently supplies approximately 20 percent of the Nation's electricity and over 70 percent of low carbon emitting electricity.

In order to research and develop nuclear energy technologies that could help meet non-proliferation and climate goals, and to maintain the national nuclear technology infrastructure, the fiscal year 2010 budget request for NE funds the following areas:
—Nuclear Power 2010 ($20 million)
—Generation IV ($191 million)
—Fuel Cycle Research and Development Program ($192 million)
—Radiological Facilities Management ($77 million)
—Idaho Facilities Management ($203 million)

Loan Guarantee Program

In fiscal year 2010, the DOE will continue to accelerate the availability of loans for innovative technologies through the Loan Guarantee Program, while ensuring taxpayer interests are protected. The Department requests $43.0 million in funding in fiscal year 2010 to operate the Office and support personnel and associated costs. This request will be offset by collections authorized under title XVII of the Energy Policy Act of 2005 (EPACT 2005). Additionally, the fiscal year 2010 budget provides $20 million for administrative costs to help enable the Advanced Technology Vehicle Manufacturing Loan Program to support up to $25 billion in loans to automobile and automobile part manufacturers for re-equipping, expanding, or establishing manufacturing facilities to produce advanced technology vehicles or qualified components.

MAINTAINING THE NUCLEAR DETERRENT, REDUCING THE RISK OF NUCLEAR PROLIFERATION, AND ADVANCING NUCLEAR LEGACY CLEAN-UP

Nuclear Security

The National Nuclear Security Administration (NNSA) continues significant efforts to meet administration and secretarial priorities, leveraging science to promote national security. The fiscal year 2010 President's budget request is $9.9 billion, which is $815 million more than the fiscal year 2009 request, to meet defense and homeland security-related objectives.

The United States continues a fundamental shift in national security strategy to address the realities of the 21st century. The fiscal year 2004 directed reductions to the U.S. nuclear weapons stockpile were completed in 2007, 5 years early. Today's nuclear weapons stockpile is now the size envisioned for 2012, and by 2012 it will be almost 15 percent less than that—a total that is just 25 percent of what it was at the end of the cold war. Consistent with the administration's Nuclear Posture Review, the Department of Energy has created a vision for a revitalized nuclear weapons complex that is significantly more agile and responsive, and will allow further reductions in the nuclear stockpile by providing an industrial hedge against geopolitical or technical problems.

The fiscal year 2010 budget request for NNSA funds the following areas:
—Weapons Activities ($6.4 billion)
—Defense Nuclear Nonproliferation ($2.14 billion)
—Naval Reactors ($1.0 billion): $175 million increase from fiscal year 2009
—Office of the Administrator ($420.8 million)

Environmental Management

The Federal Government has the dual responsibilities of addressing the nuclear weapons production legacy of our past and providing the necessary environmental infrastructure for today that will ensure a clean, safe and healthy environment for future generations. To deliver on the Department's obligations stemming from 50 years of nuclear research and weapons production during the cold war, the Office of Environmental Management (EM) continues to focus its resources on those activities that will yield the greatest risk reductions, with safety as the utmost priority. To achieve a balance of risk reduction and environmental cleanup, the fiscal year 2010 request of $5.8 billion, a decrease of 3 percent from fiscal year 2009, builds upon the $6 billion in Recovery Act funding. These investments are already having an impact. Fifty skilled new workers recently reported to work at the Savannah River Site.

This request supports the following activities, in priority order:
—Essential activities to maintain a safe and secure posture in the EM complex
—Radioactive tank waste stabilization, treatment, and disposal
—Spent nuclear fuel storage, receipt and disposition
—Special nuclear material consolidation, processing, and disposition
—High priority groundwater remediation
—Transuranic and mixed/low level waste disposition
—Soil and groundwater remediation
—Excess facilities deactivation & decommissioning

In developing the fiscal year 2010 budget for its environmental cleanup efforts, the Department will focus on achieving the greatest risk reduction, while also incorporating regulatory compliance commitments and best business practices, to maximize cleanup progress. In fiscal year 2010, EM is aggressively pursuing the consolidation and disposition of surplus plutonium and other special nuclear materials to enhance national security and to minimize the storage risks and costs associated with these materials. In addition, EM continues to make significant progress on the construction and operation of waste treatment and immobilization facilities across the complex. The budget continues shipments of remote-handled transuranic waste to the Waste Isolation Pilot Plant.

The fiscal year 2010 budget request for EM funds the following activities:
—Non-Defense Environmental Management ($238 million)
—Defense Environmental Management ($5.5 billion)
—UED&D Fund ($559 million)

Yucca Mountain

The fiscal year 2010 budget request of $197 million for OCRWM implements the administration's decision to terminate the Yucca Mountain program while developing nuclear waste disposal alternatives. All funding for development of the Yucca Mountain facility would be eliminated, such as further land acquisition, transportation access, and additional engineering. The budget request includes the minimal funding needed to explore alternatives for nuclear waste disposal through OCRWM and to continue participation in the Nuclear Regulatory Commission (NRC) license application process, consistent with the provisions of the Nuclear Waste Policy Act. The administration intends to convene a "blue-ribbon" panel of experts to evaluate alternative approaches for meeting the Federal responsibility to manage and ultimately dispose of spent nuclear fuel and high-level radioactive waste from both commercial and defense activities. The panel will provide the opportunity for a meaningful dialogue on how best to address this challenging issue and will provide recommendations for managing and disposing of spent nuclear fuel and high-level radioactive waste.

IMPROVING THE MANAGEMENT OF THE DEPARTMENT

As Secretary, I am making a concerted effort to improve management throughout the Department. The Department is committed to strengthening its management to implement the $26.4 billion fiscal year 2010 request and $38.7 billion of Recovery Act funds. The Department has developed strong oversight strategies for Recovery Act implementation, including upfront risk assessments and building specific risk management plans, upgrading process controls, establishing personal risk assurance accountabilities, and expanding outreach, training, and coordination between Headquarters and field offices. The Recovery Act, however, is only one aspect of a much larger effort to improve the Department's management.

As part of President Obama's commitment to fiscal discipline, DOE will focus on using its resources responsibly, transparently, and effectively by identifying potential savings throughout the agency. The fiscal year 2010 budget request of $182.3 million for Departmental Administration, along with resources in individual program offices, will continue the improvement in key functional areas such as human, financial, project, and information technology management. These efforts will instill management excellence and encourage the most efficient use of the Department's resources.

The Office of the Chief Information Officer (CIO) will receive $104.5 million, $33.4 million of which will go to cybersecurity and secure communications, $9.4 million to the corporate management information program, and $23.6 million for energy information technology services.

The Office of the Chief Financial Officer will continue its effort in fiscal year 2010 to build and improve its integrated business management system, iMANAGE, with the deployment of budget execution and formulation modules such as iBUDGET. To accomplish this and other goals, the CFO's office will receive $66 million in the fis-

cal year 2010 budget. A significant portion of the increase is to assume costs previously carried by the CIO for accounting systems operations.

The Office of Management ($88.4 million) and the Office of Human Capital Management ($29.5 million) will help ensure effective and efficient management principles permeate from top to bottom at the Department of Energy. The Department has been making steady progress in improving project management and developed an action plan with concrete steps and scheduled milestones to successfully address the root causes of the major challenges to planning and managing Department projects. The action plan identifies eight measures that, when fulfilled, will result in significant, measurable, and sustainable improvements in the Department's contract and project management performance and culture. Primary actions include: strengthened front-end planning, optimized staffing, improved risk management, better alignment of funding profiles and cost baselines, strengthened cost estimating capability, improved acquisition strategies and plans, improved oversight, and stricter adherence to project management requirements.

The Department's human capital management efforts are focused on an integrated approach that ensures human capital programs and policies are linked to the Department's missions, strategies, and strategic goals, while providing for continuous improvement in efficiency and effectiveness. The Department is revising its human capital management strategic plan to address future organizational needs, workforce size, skill gaps, performance management systems and diversity. To accomplish this goal, the Department will continue to implement strategies to attract, motivate and retain a highly skilled and diverse workforce to meet the future needs of the Nation in such vital areas as scientific discovery and innovation.

CONCLUSION

It is my firm belief that the short-term impact of the Recovery Act combined with the new approaches and long-term vision in President Obama's fiscal year 2010 budget, will lay the groundwork necessary for creating the new green economy. Both President Obama and I look forward to working with the 111th Congress to make this vision a reality.

I appreciate the opportunity to appear before you to present the fiscal year 2010 budget proposal for the Department of Energy. I will be happy to take any questions that the chairman and members of the subcommittee may have at this time.

FUNDING ALLOCATIONS

Senator DORGAN. Mr. Secretary, thank you very much for your testimony. I have a good many questions, so I will begin with the first few questions, and then my colleagues will ask questions, and I will be able to stay and ask remaining questions.

Let me ask you about coal. I asked during, I believe it was your confirmation hearing, about the statement, "Coal is my worst nightmare," that you made, and you described the context of that statement, and I understand it.

This budget essentially flat funds coal research and development. The fact is, coal is our most abundant resource by far, not even close. If it's our most abundant resource—and I and many others believe and I would hope you believe that we can continue to use coal, because we can use science, research, and technology to decarbonize coal—then how do we get there if we flat fund research and development with respect to coal?

So can you give me a little bit of the philosophy that led to a flat funding for that account? Given what the President said about the substantial front-end investments for these kinds of things, I would have expected a very substantial recommended increase, in order for us to use coal in our future, because it's our most abundant resource.

Secretary CHU. Well, Mr. Chairman, I agree with you, and I have to say that this budget reflects that because it has folded in the fact that we have received $3.4 billion, substantial funds, in the

American Recovery and Reinvestment Act. Many of the pilot programs for that money, $3.4 billion that might have been funded in this section now have gone over to that.

So in a certain sense, that incredibly large amount of funding for these pilot programs and the investigations are then, say, "well, we will continue this current budget", certainly if it were not for the Recovery Act funds, you would have seen a different budget.

So even though I know the philosophy of the Recovery Act was to be seen as strictly supplemental, in the context of that addition, I think it's reasonable.

Senator DORGAN. Well, that was the philosophy, actually. But I think most of the stimulus funding is considered to be demonstration projects rather than R&D. In the area of solar, which I support, and some other areas, even though there was substantial money in the stimulus, there's also substantial money in R&D, but coal is flat funded.

Quickly, do you believe that we will have to continue to use coal in our future and need to find ways to decarbonize coal?

Secretary CHU. Yes.

HYDROGEN

Senator DORGAN. Okay. Well, we'll talk more about that. Let me ask you about hydrogen. You have essentially zeroed out the hydrogen program. You've moved a portion of it into a different direction, but there are about 190 ongoing hydrogen projects that are unfunded.

We've got about 500 jobs, 140 at universities, 150 at national laboratories, 235 in industry, that have been working on hydrogen. And I agree that hydrogen is not near term. But I also agree if someone is going to look at things that are not near term, but are essential in the longer term, who but the Department of Energy should do that?

I'm stunned that the budget essentially just moves away from hydrogen fuel cell research and stops projects in the middle of these projects. I don't understand just deciding to take projects that are half completed and say, "You know what? We've decided that we're not going to do those projects anymore." I'm a big fan of hydrogen in fuel cells, and I believe that they are going to be part of our future. I agree it's not near term, but I agree also that the Energy Department has a significant role in continuing this research, your response?

Secretary CHU. Well, this was a tough call. I think it was centered mostly on saying that hydrogen for vehicles is not near term, and that we wanted to prioritize to be investing more in things like advanced batteries, something that I could see in the next 10, 15 years could actually be adopted on a significant mass-deployment scale.

Hydrogen stationary fuel cells I think we will continue funding. There are real issues that I have with transportation vehicles. The most problematic, in my opinion, is we still have not figured out how to store hydrogen in a compact form. So while we can be funding more basic research and looking for ways to do that, that is something of real significance.

The other is the infrastructure. We would have to create a totally new infrastructure in order to have the hydrogen vehicles be fueled. Not insignificant is the fact that the hydrogen, if we were to deploy this within the next 10 years, would come out of reforming natural gas, and it's a questionable call as to whether we want to be using the reforming of natural gas.

And so there are many issues. At a more basic research level, I think there have been advances in fuel cells, and we want to push on more radical approaches to these things. But I think stationary hydrogen is going to be, in my opinion, the first application.

Senator DORGAN. Well, in North Dakota, we're actually using wind power to produce hydrogen from water, separating hydrogen from—well, at any rate, my point is that I think the Department's made a significant mistake here. And I, for one, am not interested in shutting down these research projects, and I'm going to do everything we can to continue them.

We're only looking at near term, the next 5 to 15 years, but when you come around talking about cap and trade and climate change, you're going to talk about 2040 and 2060, 2070. So I really think this is an important area of research.

President Bush, Senator Bennett, myself, so many others have been very involved in this, and to see these contracts shut down in the middle of the contract on very important research, I think is not a smart thing to do. So we'll have more to discuss about that.

BLUE RIBBON COMMISSION

Quickly, what is the status of the development of the Nuclear Waste Blue Ribbon Commission? You recommend shutting down Yucca Mountain as a storage site. So the question is what's the development of the Commission, the status? What's your evaluation of what the Energy Committee is doing? In the energy authorizing committee, we have proposed something of that sort. Are you considering recycling spent nuclear fuel to reduce the volume? So give us your thoughts about what is behind shutting down Yucca Mountain.

Secretary CHU. There's a first draft of names that are beginning to be circulated among the White House personnel people. We will be circulating them among Congress also for comment. The authorization committees, Chairman Bingaman and his committee, is I think—we're essentially in sync, in terms of trying to develop a very measured, intelligent, deep group of people that can actually step back and say that there are options available to us today, and looking down in our crystal ball and tea leaves 50 years from now, 20, 50 years from now, we can see other options.

So now is a good opportunity to say—to charge the committee. There are options. I personally feel that if we do it right, we can develop ways of processing nuclear fuel to recover much more of the inherent energy value of that stuff, perhaps—through recycling, but we need to develop processes that are economically viable and proliferation resistant.

So if that's true, and I think there's a reasonably good chance we can do this in the coming decades, then we would want to have two different types of storage—an interim type of storage, where you can then either get back the access, reprocess the fuel. We also

want to be investing in types of reactors that can help burn down this fuel, and especially the—waste, so we can greatly reduce the waste.

Now, having—after you've done all that, then there comes a point where you say you might not want to have access to, after you've burned down a considerable amount of the energy value. So then a permanent disposition might be called for. But these are things that the Blue Ribbon Panel should be discussing. And it's the hope that with their advice to both the administration and the Congress, we can formulate a path forward that I think could be much better than the one we're currently on.

Senator DORGAN. I'm going to reserve the remainder of my questions until the end. Senator Bennett?

NUCLEAR POWER

Senator BENNETT. Thank you, Mr. Chairman. Mr. Secretary, let's continue this conversation about nuclear power. You've testified several times, and again today, in your support of nuclear power. And I'm delighted with that, because I'm a strong proponent myself. The budget fails to demonstrate any urgency, in my view, particularly deploying state-of-the-art reactor technology. And the rest of the world is investing in new reactors. Russia, France, India, all beginning to line up countries to sell their reactor technologies.

Now, the United States is clearly the leader in terms of safety. There have never been lives lost. There's never been a problem with the American reactors. So that raises the question of why we are not the export leader in this business, but these other countries are.

So would you be willing to support additional funding for the NP2010 program if it improved U.S. export competitiveness and accelerated the deployment of new reactors domestically? That would, I believe, create thousands of new jobs in the United States. Is that something that you could be supportive of, if this subcommittee moved in that direction?

Secretary CHU. Well, in terms of NP2010, there were two reactors that we initially were supporting, the AP1000, the Westinghouse reactor, and the GE reactor. It is my understanding that the orders for the GE reactor have shifted, and it's not clear. And so while that reactor is still going forward in a much different pace—and so a decision was made until we get strong signs from General Electric that they were going to go ahead and push this because of the recession, because of a shifting of orders, for example, from the GE reactor to the Westinghouse reactor, the support of the licensing of that reactor didn't seem to be as high a priority.

So I do want very much to restart the nuclear industry. We're in a final review of a number of proposals for the loan guarantees. And so that's something that has a very high priority with me. This specific reactor, the GE reactor, and the extension of 2010 will really depend, in large part, on what General Electric—how aggressively they want to move forward on it as well.

LOAN GUARANTEES

Senator BENNETT. I see. Let's talk about the loan guarantees for a minute. In the bill that left the Senate, there was a very hefty

increase in loan guarantees. It did not survive with the conversations in the conference. Those of us—well, I won't say those—I was subjected to some fairly heavy criticism on the part of people who said, "Well, the loan guarantees should not include nuclear. The loan guarantees should be entirely for wind and solar and that sort of thing, and you shouldn't include nuclear in there."

The Department's issued five solicitations under the Loan Guarantee Program, and in four of the five, demand vastly exceeded the available supply. Now, would you be open to having the Congress change the law so that you could shift from one pattern to the other, if there's one that's undersubscribed, and make that money available to others? And do you still support the idea that under the loan guarantees, nuclear has to be included as renewable, in the sense that we are defining as renewable something that is not emitting carbon?

Secretary CHU. I absolutely support the idea that within the loan guarantees, restarting the nuclear industry should be supported. Right now, the $18.5 billion can probably help start three of their four applications. We're looking as to whether there can be some cost-sharing with non-Federal loan guarantees from abroad in order to fund four. I think that's a start. I personally would like to see a bigger start.

Senator BENNETT. Well, the request for $93 billion for the $18.5, so there's obviously a great deal of interest in it. And my concern is that if you have other areas under loan guarantees where the requests are below the amount available, that you be given the authority to shift money from that and make it available to nuclear. Is that something you would be supportive of?

Secretary CHU. I think in general, philosophically, absolutely yes. But I think to balance that, there is a fear, because the cost of nuclear is so high, that there is a fear that if you were allowed to shift the money, that it could easily gobble up a lot of the things of the lower cost renewable energy projects. So there should be a balance there, but having the flexibility to make those decisions, I would welcome.

Senator BENNETT. Okay, one last question. We've talked about the stimulus package and the amount of money that's available. Can you give us a path as to how quickly some of this money can be moved out? It has not moved as rapidly as many people thought that it should. And are those people just—their expectations are too high, and you're moving the best you can? Or have you run into problems? Or is there a holdup where we can be helpful? Can you give us the timeline? Just give us an overall view of what's happening with all of the money that got appropriated to——

Secretary CHU. I think the progress in the loan guarantees has been actually very good since when the new administration took over. When I took over initially, I was told that the first loan, which was authorized by——

Senator BENNETT. Not just loan guarantees, but generally, the President—you have $38.7 billion appropriated, and you spent 1 percent of that.

Secretary CHU. Okay. That's right. So in many of the programs we're doing, we're on target. We have a schedule that we want to have allocated 70 percent of that Recovery Act money by Labor

Day. There's an issue here because in many of the things that we do, we request for proposals. We have to review the proposals, and then we have to make decisions.

So in order to do this, there's going to be a massive review this summer of many of those programs. So we've gotten clearance from OMB, apportionment of many of these things. And so the allocations, we hope a lot of them can be made by this Labor Day. So, so far, there has been $4 billion obligated to date, about 10 percent.

Senator BENNETT. About 10 percent. Okay. So, Labor Day is an updated timeline when you will have, what, 70 percent of it spent?

Secretary CHU. Well, by spent, what we're saying——

Senator BENNETT. Or obligated?

Secretary CHU. Yes, we're trying to get to that obligation period by that time. That's correct.

Senator BENNETT. By Labor Day. And are there any accounts that you see that might, in fact, lower the amount you'll have to spend in fiscal year 2010 as a result of the normal appropriations?

Secretary CHU. Sorry, I didn't quite get the question.

Senator BENNETT. If you have the backup of stimulus funds that you've been unable to spend and then those get spent during fiscal year 2010, does that mean there is any fiscal year 2010 money that can, in fact, be delayed until fiscal year 2011 because you simply can't physically spend it?

Secretary CHU. Right. Well, we're going to be trying to do our best to satisfy the statutes of that Economic Recovery, which is really to have it essentially obligated—100 percent of it obligated by 2010, and a large fraction of it spent. But as you know, there—in some of these things that we're doing, in order to lay the foundation for a new energy economy, it's not as though it's money instantly into supplemental check——

RECOVERY FUNDS

Senator BENNETT. Oh, I understand that. But you understand the angst that is out there among our constituents about the amount of money in total the Federal Government is spending and the concern that it may not be spent wisely. And if, as you move forward in your pattern to say, "Okay, this is the proper timetable and the proper method of spending stimulus funds," and you discover that in doing that, it means that you do not need as much of the 2010, in terms of—speaking in business terms now—actual cash flow. I'm not talking about changing your plans or changing your research programs or your targets or something.

But there becomes a physical question of pushing the money out the door. And in terms of actual cash flow in 2010, you can't prudently do it——

Secretary CHU. Right.

Senator BENNETT. Would you share with the subcommittee those funds that might be pushed onto 2011?

Secretary CHU. Yes, I could share those concerns. But we are looking at novel ways of addressing this. It is a—you're quite right to say that this is a Herculean task. It more than effectively doubles our budget. And so, for example, I have sent a letter out to all the presidents of the major research universities, the relevant deans, the presidents, and the executive chairs of all the relevant

professional societies, to say that we're going to have essentially a review-fest over a period of one week in Washington, asking them to nominate for this summer their best people to help us review these proposals. We cannot do this alone with our current staff. And so we're looking at things like that in order to get this moving.

Senator BENNETT. Okay. Thank you very much.

Senator DORGAN. Senator Bennett, thank you very much. I have just been called by Senator Reed, the majority leader, to go to the floor to negotiate an amendment that they're trying to clear before they do final on this, in the bill that's now pending. So I've asked Senator Murray to chair while I'm gone. And let me call on Senator Alexander. We're recognizing Senators in order of appearance at the hearing.

INNOVATION HUBS

Senator ALEXANDER. Thank you very much, Mr. Chairman. Mr. Secretary, welcome. On May 9, 2008, I made an address at Oak Ridge Laboratory about a new Manhattan project for clean energy independence, seven grand challenges for the next 5 years: plug-in cars and trucks, carbon capture, solar power, nuclear waste, advanced biofuels, green buildings, and fusion. So I like your hubs. I think that's exactly the way to go about these grand challenges.

I have a question about a relatively small item. In the America Competes Act, which you had a role in developing the recommendations for, there is a provision for distinguished scientists who would have one foot at a university and one foot at a national laboratory. It's worked well at Oak Ridge, for example, with the University of Tennessee over the last 20 years.

There's authorization for up to 100, was the idea, to be phased in over a period of time, and there's the authorization for $30 million of spending, none of which is funded yet in this budget. I just want to call that to your attention in case it does get funded to suggest that moving ahead with those at the rate of four or five a year might be one way to advance these hubs, as you're looking to attract very talented people to focus their attention on those. Have you noticed this?

Secretary CHU. Actually, first, let me just say I support the idea. I think having intimate collaborations from universities and national labs is something I'm very supportive of. I would be encouraging—although one doesn't see it specifically in a line item of a budget, one is beginning to see this in the national labs, and I would be encouraging the national labs to grow much stronger relationships with surrounding universities. It serves both the university and the national labs very well. It brings in a lot of young blood. It creates a churn and intellectual excitement.

So while it doesn't have to necessarily show up in a line item, I will be encouraging all the national labs to do just that within their programs.

Senator ALEXANDER. And this authority isn't earmarked to a particular university; it's for the Secretary to compete and do it in whatever way is right. I would like to explore the questions that Senator Dorgan and Senator Bennett raised about nuclear power.

The President, in his inaugural address, talked about power from the earth, the wind, and the sun, and that's captured the imagina-

tion of a lot of people. But it's less than 1½ percent of our electricity today, and if we double it or triple it, we still don't have much. And even if we reach the 15 or 20 percent that some people think we might of renewable power, that's probably it, and that still leaves a need for 80 or 85 baseload power.

I thought the President's rumored proposal today of capping greenhouse gases from tailpipes by a low-carbon fuel standard was a good idea. I think that it makes sense because that will encourage switching to an existing technology, such as electric cars. We have enough—we could plug in, Brookings says, half our cars and trucks, without building one new power plant, if we do it at night, we have so much unused capacity.

If we look back at the beginning of the cap-and-trade program in 1990 and 1991, we had an existing technology then for dealing with the acid rain. We had scrubbers that would take care of that. Where I'm going is, as we move along in the greenhouse gas discussion, we probably get next to coal plants, which are 40 percent of the carbon. And we don't have an existing technology to deal with that, except nuclear power, and with a limited amount of experience with burying carbon underground.

So why wouldn't we be as aggressive about expanding nuclear power and doubling or tripling research in Manhattan project to find a way to get rid of the carbon in existing coal plants as we are with wind and solar and other so-called renewable powers? They're not baseload powers. And isn't it true we have to have some new source of clean baseload power? Why not just put a plan in to build 100 new nuclear powerplants in the next 20 years as a start toward that and double or triple research to take carbon from existing coal plants?

Secretary CHU. Well, as enthusiastic as I am about nuclear power, that number, 100, would be a lot. It would be a huge challenge to our nuclear industry. I think I've repeatedly gone on record as saying, as you well know, that this administration, this Department, the hopefully soon-to-be confirmed members of my team are all enthusiastic about it. They say it is a necessary part of our baseload power.

I agree with you, if you're going to go above 15, 20, 25 percent renewables, there are real issues having to do with the transmission and distribution system, having to do with storage. The storage problem is especially an unsolved problem, but there are options, and so we'll be looking at, for example, pumped hydro, where it's appropriate in certain regions.

But I reiterate the fact that we're blessed with a lot of coal, and although we do not have today the technologies that would make capture and sequestration of coal economically competitive, I think there's a good chance that we can get there. And so I'd prefer to take a different stand and say let's push all of these things as hard as we can.

The nuclear industry, if you look at the capacity of their ability to build reactors, it's not there today, and so while we want to move aggressively ahead on that, I think we still have to try to move aggressively as we can on developing the technologies for capture and sequestration.

Senator MURRAY [presiding]. Thank you, Senator Alexander.

Senator ALEXANDER. Thank you, Madam Chairman.

Senator MURRAY. We'll move to Senator Tester.

LOAN GUARANTEE PROGRAM

Senator TESTER. Yes, thank you, Madam Chair, and thank you for being here, Secretary Chu. A couple of things, going back to some previous questions, I certainly appreciate the situation you're in and that there is a sizable sum of money available to you to send out. But I also appreciate the fact that you're taking the time to make sure we get the results from this. It's just not money spent for the sake of spending money. And I think there's a real urgency in generation and transmission in this country, as the questions before me have pointed out.

I want to go back a little bit to the Loan Guarantee Program. You talked about a massive review—I don't know if it was of that program or not. But just can you tell me where we are as far as the decisionmaking process of that Loan Guarantee Program, and what is the timeframe for getting some of the loan guarantees out the door?

Secretary CHU. Okay, so we've made a provisional grant to one company. That means that they have to find funding for the current statute for the 20 percent. This is middle May. I think by the end of this month, we'll be announcing a number of others. We've greatly accelerated all the review processes and how we do it, and we're doing many things in parallel now, something that the Department is not used to.

And so the loan guarantees essentially are being accelerated by about a factor of 5, maybe closer to 10. So this is a very significant focus on making sure that these things are reviewed, reviewed adequately, but very quickly.

Senator TESTER. Okay. So you're anticipating some announcements—because we are in the middle of May——

Secretary CHU. Right.

Senator TESTER [continuing]. Any day?

Secretary CHU. Certainly within the next couple weeks to a month, yes.

WIND ENERGY

Senator TESTER. Okay, all right. We have great wind resources, particularly in the eastern part of Montana. And what has traditionally happened over the last 4 or 5 years is they've built a lot of towers in a fairly small area for purposes of maintenance and construction, cranes, all that stuff. It looks to me like the best benefit you can get out of wind is if you decentralize it, if you move it around for intermittency purposes. The wind's blowing somewhere in eastern Montana every day, all the time, and the issue is the grid.

Do you ever put forth policies or put forth direction to electrical generation companies to encourage them, or is there anything we can do to encourage that, or is that even a good idea? I'm talking about decentralization of wind to reduce intermittency and reduce the need for—go ahead.

Secretary CHU. No, that is a very good idea. In fact, a number of Cabinet-level people have been meeting on an every-other-week

basis. The principals—meet—this is Interior, Ag, Energy, CEQ, a number of stakeholders—to try to develop a coherent plan where the energy resources, both solar and wind, where are the places where it would not be—we have to be very sensitive to environmental concern and danger species, things like that, and trying to now develop this—FERC is also, of course, part of this. And we're trying to then develop this and start to work with the private sector.

Senator TESTER. So you have the ability to give some direction?

Secretary CHU. Well, we're——

Senator TESTER. Or we need to do it at this level?

Secretary CHU. Well, we are trying to develop some plan that gets buy-in from the private sector.

Senator TESTER. Okay. That's the best.

Secretary CHU. The meetings have been going on for several months.

CO_2 SEQUESTRATION

Senator TESTER. A few weeks ago, this subcommittee had a hearing on beneficial use of CO_2. We heard some pretty encouraging things about algae. One that was particularly encouraging to me was cement, making cement, not having to separate the flue gas. It sounded to me like it was tricked out and ready to go.

Two questions, No. 1, is that kind of specialty use of CO_2 something that you see as viable and is it something that can happen? And then the follow-up question is, is the beneficial reuse of CO_2, is it being limited by our study of carbon sequestration and storage?

Secretary CHU. We are certainly looking into those things—the algae converted CO_2 into lipids that can be used for transportation fuel and cement. The verdict is not in whether these processes work but if they could go to a scale necessary to be significant, and so we're looking very hard into this. I do know other countries also are looking into—for example, I just had a discussion with some representatives of China. They're keen on seeing whether this can actually work.

But again, we're in the process of trying to study whether it can really go to scale or whether it will be a small, more boutique type of thing. Cement especially is something that goes in several stages. There are various grades of cement and long before you can actually get into a structural cement there are many issues having to do with structural integrity. The economic viability is something—it's—but these are fairly new ideas, and so we are very interested in looking and seeing if they can really work.

Senator TESTER. Do you think the budget's adequate enough to deal with the CO_2 issue, generally speaking, both as beneficial use and as storage? Is this an adequate budget to deal with that?

Secretary CHU. I believe it is. I think we're upping, actually, the funding in algae, and cement, there are a couple of companies looking at this, in terms of supporting that with loan guarantees.

Senator MURRAY. Thank you, Senator Tester. Senator Feinstein.

DESERT PROTECTION

Senator FEINSTEIN. Thank you very much, Madam Chairman. Good morning, Secretary. It's good to see you here. I've tried to obtain an appointment with you. So far, I've not been able, so I'm going to take this opportunity to express a concern publicly that I would have expressed privately, had I had the opportunity.

You may not know this, but I authored the Desert Protection Act in southern California. We created two new national parks, Joshua Tree and Death Valley, and the Mojave Preserve. Since that time, for about the past 7 years, we've been trying to buy railroad inholdings to put them into conservation and have in effect bought about 700,000 acres in a very unique public-private partnership. The private sectors contributed $40 million, and we, about $17 million, to be able to do that.

So it was much to my consternation that I was suddenly told that a lot of large solar facilities were going on the land that we had just purchased with a lot of private money to conserve. So I went down to the desert and brought the companies involved and took a look.

And here's what I found, that I saw seven projects. They totaled nearly 60 square miles, 60 square miles. One was 9.3 square miles. One was 7.03 square miles. One, 15 miles square, that's BrightSource, Iberdrola, 3.09, the second Iberdrola, another 3.09, PG&E, 6.56, and Solal, 6.25, and many of them in this land that is due for conservation and that had been purchased for the purpose of conservation.

Then I began to look, and I talked to Southern California Edison, "What's your largest solar project?" 50 megawatts. And I see here, we've got 914, 815 megawatts, 500, 500, 500, 800, 600, huge projects. And I asked how was this done? Well, the national topography of the land is leveled out. The sand is removed. A gravel surface is put in. The solar troughs are centered. You need a large steam plant, and you need very large transmission lines.

The question comes, for me, having tried very hard over 16 years to protect this area of the desert, now to see it all in the main going for a huge number—now, I'm only talking about 7 out of 65 projects for the area. Those were the only ones I saw. But the ones I saw were 60 square miles' worth of solar troughs, huge steam plants and fences that will go around it. Right in the middle of a desert where the desert tortoise has some habitat, where there are other problems—bighorn sheep, Indian petroglyphs, and so on—and we've been able to clean up this desert over time.

The question I have is should we not cap the size of these things? The largest that I know of is in Kramer Junction. Two projects, one 160 megawatts and one 150. Each one is about 2 square miles. Those are the largest I know of anywhere in the United States. And now we're talking about one of 15 square miles. Should we not cap the size of these?

Secretary CHU. Well, I certainly would be willing to—first, I'm a little bit surprised if you asked to see me and my staff said no.

Senator FEINSTEIN. Well, we just haven't gotten a response. That's sort of the way it's done. You just don't hear.

Secretary CHU. Oh.

Senator FEINSTEIN. But anyway.

Secretary CHU. I'm still surprised. You actually have my private number.

Senator FEINSTEIN. Well, I should call you at home, then.

Secretary CHU. But I'd certainly be willing to talk to you about this. These are sensitive issues and we have to think hard about them. I don't know—I was actually just informed only a few days ago about this concern and I'd certainly be willing to look into it.

I think this is one of those very delicate issues, as I was saying to Senator Tester, as we are developing a plan moving forward in conjunction with the other Secretaries, one of the issues is the sensitivity to habitats of endangered species that we're looking at, and we're trying to make sure that we fold all those concerns into where there would be good sites for solar and wind.

Senator FEINSTEIN. My time is up. Let me say one more thing. In my State, I have 47,000 abandoned mines. People came in, they mined, they took the stuff they wanted and they walked away from the mines. Solar technology is going to change. In Daggett, I've looked at some photovoltaics and solar troughs. They walked away from them. They left the steam engine there, steam plant there. This has to be considered as well.

Everything right now is how you can do it the cheapest possible way you can. Huge is better. But I've got to tell you, I'm going to fight for this land to be protected. And I think that size is a factor, and you just can't come in and build 15 miles square facilities with huge steam plants. We're willing to do our share. I am. I understand the desert is a good place for it. But the sky's not the limit, Mr. Secretary, and that's what I want to say. Thank you, Madam Chairman.

WASTE CLEANUP

Senator MURRAY. Thank you, Senator Feinstein. Mr. Secretary, thank you. You and I have spoken on several occasions about the legal and moral obligation for the Federal Government to clean up the waste that was left behind from World War II and the cold war. We've talked about it prior to your confirmation, at the Budget Committee hearing, and again after the release of the 2010 budget proposal.

My position is really clear, and the administration is going to have to expect it to remain consistent, because that's what I want for these budgets. I want budgets that clearly meet the obligations we have to the Nation and the States and the communities that are home to those cleanup sites. And I want budgets that consistently make progress toward the goal of cleaning up that waste.

The funding highs and lows that we see just don't get us there, and unfortunately, that's what I see in the EM budget we've been presented with. Let me talk about the highs. In the Office of River Protection, it's good to see an increase for the work at the tank farm. We have seen years and years of pushing off those infrastructure needs, and there's a lot of work that needs to be done there. You're putting your focus back on that work, and I do appreciate that. I expect that we can remain consistent, and we'll look forward to that as the new base level of funding for those tanks. That's really important.

However, the same effort isn't evident with Richland Operations, where there's a reduction in funding below the fiscal year 2009 and fiscal year 2008 appropriated amounts. That reduction does not represent a consistent effort for stable and compliant budgets. We all have to remember that the economic recovery funds were meant to make up for lost time and to create good-paying jobs, not to make amends for this year.

The River Corridor Closure Project is up; however, the Central Plateau is down. Reducing the active cleanup footprint at the site is a really large task that requires consistent budgets to fund the effort. So I encourage you to keep that in mind when you're planning for next year's budget so we don't get ourselves back into this position again.

As you know, Hanford is not going to be cleaned up in 5 or 10 years. It's a large project, massive in size, and we need to manage it thoughtfully and consistently with that long-term mission in mind. And that's why I am always saying we need stable and consistent budget, so we can get the job done safely, No. 1, and successfully.

I also wanted to just quickly mention to you the Hammer Facility that is on site at Hanford. The Hammer Facility offers incredibly wonderful training for people who take on the very, very dangerous work of cleanup. And I'm hopeful that when you do come out to visit the Hanford site, that you'll get the opportunity to stop by and see Hammer, see what they're doing, to help promote a safe working environment at a very, very challenging place.

I'm still looking forward to your visit at some point in the near future, where you can see progress on the site, but also, some of the worker safety training going on at Hammer and at PNNL and how everything works together towards cleanup.

I do have a number of detailed questions for you on support for Hammer and the B reactor. I'll submit those for the record. But I do have a question for you while you're here, Mr. Secretary. I do want to say that I'm pleased at the overall increase for energy efficiency and renewable energy. We've got to move forward on a clean energy economy. And I think that does help us keep on the path.

Now that you have spent some time at the Department, I'm looking forward to hearing an update on the Water Power Program. As you know, that program got $40 million in 2009, and the President is now requesting a 25 percent reduction, which I am very concerned about. I think we have to have a very strong continued investment in existing hydro facilities that will allow us to use those to supplement the more unpredictable sources, like wind or solar. And I think we have to increase our work to develop new marine and hydrokinetic technologies, as well, that you and I have talked about before.

WATER POWER

So with my less than a minute left could you talk to me a little bit about your vision for the Water Power Program.

Secretary CHU. I think, first, very briefly, I am very committed to continuing the cleanup as aggressively as we can and looking for better ways of doing that. It's not only the money, but it's also the way it's invested and funded. And so a lot of time is now being

spent in reviewing how we deal with the contractors, making sure that they do the job in a timely manner.

In terms of the water projects, it's too late to start this in 2010, but in the 2011 budget, I'm a big advocate for looking at ways of being, let me just say friendly to the fish, but allow us to continue hydropower, but also to look at the possibility of actually having some pumped hydro, small amounts of sources, so that we can actually couple the renewable energy better. And so we're going to be looking very hard at that.

Senator MURRAY. Okay. I look forward to working with you on that. I think it's extremely important. And I appreciate your response. Senator Cochran.

STRATEGIC PETROLEUM RESERVE

Senator COCHRAN. Mr. Secretary, welcome to the subcommittee. We thank you for your cooperation and your service as Secretary, a very important position. In the budget request for the Strategic Petroleum Reserve, roughly $50 million is included and proposed for the purchase of a new cavern to replace an existing storage cavern that was said to pose an extreme environmental risk. And this is for storage of strategic petroleum reserve.

There are salt domes in my State of Mississippi which some think are ideal sites for the storage of the petroleum reserve. Your Assistant Secretary recently testified about legislation to increase storage capacity, specifically for the strategic petroleum reserve.

I'm curious to know what your thoughts are about choosing caverns that some say are not environmentally appropriate for storage, rather than looking into the possibility of salt domes that are coincidentally located in southern Mississippi. I'm just curious to know if this has reached your level for attention and consideration.

Secretary CHU. Well, my understanding is that one cavern, which I believe is the salt cavern—it wasn't understood that the thickness of the salt was, in one section of it, thin enough that it could open up the possibility of a breach and can actually—the petroleum could leak into the environment.

And so that was discovered, in my understanding, last year, year and a half. And so once it was discovered, it was decided that that posed an environmental risk and we should go out and purchase some property to put it in a place where the envelope, if you will, would be less likely to be breached. And so that's what we're in the process of doing, but salt caverns are actually used for that, as you well know.

Senator COCHRAN. Right. Well, I was just curious to know whether that reached your level for your personal attention. I don't have any fixed views about which caverns are the best or not the best, but we certainly want to be sure that they are safe in terms of environmental consequences, and certainly in respect to possible damage to people who live in the area.

Funding, incidentally for the strategic petroleum reserve included $35 million for a site near Richton, Mississippi, contingent on a report issued by the Department within 45 days. My staff has contacted the Department about the report, and we're just curious to know what the status of that report is, if you know.

Secretary CHU. I don't know. I could get back to you on that and give you the details.

Senator COCHRAN. We would appreciate that, and we would like to be kept in the loop, as long as you have active consideration of Mississippi sites. Or I know in Louisiana, they have some salt caverns there as well. But it's of importance. We want to be a positive contributor to the solving of our energy problems, and we think that there are some caverns that possibly could be suitable, and we'd like to know—there was a report, I think, contemplated at one time to describe and define this, so the general public would have some better ideas of what's going on. Rumors get started, and I would like to know what the facts are so I can pass that on to my constituents. If you could look into that, I would appreciate it very much.

Secretary CHU. Sure, I'd be delighted to.

Senator COCHRAN. Thank you. Thank you, Madam Chairman. Sorry, Mr. Chairman.

GEOTHERMAL

Senator TESTER. Oh, that's entirely all right. I'll ask a few questions here, waiting for Senator Reed to go here. Real quick, do you think that there's any future as far as geothermal goes in relation to baseload power, or is it economically not going to happen?

Secretary CHU. I think there is a real potential, especially enhanced geothermal. But we're looking—geothermal right now is on .3 percent of our electricity generation capacity in the United States.

Senator TESTER. But we have incredible resource.

Secretary CHU. We have incredible resource. It's mostly—my understanding, it's mostly in the ability to do enhanced geothermal, meaning that you pump in water or carbon dioxide that uses the heat transfer fluid. We know how to fracture rock much better than we did before, and so this is a possibility.

We are going to be investing in research to see whether enhanced geothermal can actually be viable. If it is viable, there is a very large resource.

Senator TESTER. How many years out do you think it is, before the first viability?

Secretary CHU. I'm trying to think of the briefing, but these things are issues where you're going to—it's, again, there's—it takes time to drill. It takes time to test it. Ten years. I don't know.

Senator TESTER. Okay. Senator Reed.

WIND AND GRID INVESTMENTS

Senator REED. Thank you very much. Mr. Secretary, thank you for joining us today. I know you are aware that my State of Rhode Island is aggressively trying to deploy wind-powered facilities off its coast in State waters near Block Island and in Federal waters further out. This is not only going to provide us with, we hope, renewable energy resources, but also provide a stimulus to our manufacturing sector, producing the blades to turbines and other equipment.

One of the concerns we have is that the investments that you are leading in terms of the grid might focus the attention away from

these projects along the east coast and more toward the center of the country. And I would just ask you to sort of ask us how these grid improvements can help and not hinder the development of these wind projects. And it's not just Rhode Island. It's Delaware. It's all up and down the—Virginia, all up and down the coast, this sector.

Secretary CHU. Well, you're raising a very important point. The Atlantic Coast has a lot of wind resources, very close to population centers. And we are—certainly this is part of us, as we get out feet wet, so to speak, in finding out how to develop the wind resources.

I think it's important to actually develop them in both places. The more diverse the set of wind resources, not only in Montana, but all over the United States, the better we have of actually becoming more base load. So to have wind resources off the shallow Atlantic Coast and having it in the Northern Midwest, they're very important.

So in talking to power distribution companies, utility companies, it's not clear to them what the best economic investment is either. So we're trying to work through this. The issue with offshore is that for shallow offshore, it's about a factor of two more expensive initial investment. Even more so—perhaps a factor of three or more—in the maintenance, and so far, the maintenance is higher than expected in the European experience. And so we are trying to work through all of these things. Hopefully within several years, we can get the wind turbines so that the gear boxes, the blades, are much more robust.

But so these are all issues. Going offshore actually complicates that.

Senator REED. Yes, indeed. I think, though, that—and I don't want to suggest a response, but it seems that there should be a very explicit recognition of these offshore efforts and coordination as you invest in the grid. It would help either inadvertently or directly see huge investments, which make it even more difficult to bring this power——

Secretary CHU. No, I agree with you. I think it should be a balanced view, and how to develop the renewable resources at large in the United States in the most balanced way. And in our little group of secretaries and other administrators, this is very much on the table, the balance between Atlantic offshore and Midwest, for example.

Senator REED. And principally FERC and the Department of the Interior will have the principal roles of the siting, et cetera. But I presume the Department of Energy will be an active participant, from your comments.

Secretary CHU. Yes. But you said it correctly FERC and Interior will have the major roles in deciding.

WEATHERIZATION

Senator REED. Let me—I have at this time, one final topic. And that is thanks to the efforts of Chairman Dorgan particularly, there's been an unprecedented investment in weatherization in the Recovery Act. And then the 2009 appropriations bill has $450 million to complement the roughly $5 billion in the Recovery Act. But the 2010 budget has only $220 million for weatherization. Now, I

understand some of that is because of a big spike up, and you're coming down. But there is a concern that we're ramping up this capacity of weatherization. We're getting people out there, particularly in the context of recovery, those are good jobs, and then we're going to see the funding streams diminish rapidly, leaving us with capacity and people, but—and still with demand.

So I wonder if you could just give us the notion of what's your long-term strategy for weatherization, Dr. Chu.

Secretary CHU. Yes, Senator, you were actually raising a very good point. Because in the weatherization, roughly $10 billion is, in the Recovery Act, spread around several agencies. Part of that is actually building a workforce that can weatherize, and after 2 years or 2½ years, what do you do with this workforce?

So I think what we are very concerned about, in trying to design self-sustained programs beyond that. Let me give you one example. Secretary Donovan and I are looking for ways in which, when properties change hands, when you buy a home, that you can have financing, additional financing, say an extra $10,000, $15,000 that's part of your mortgage that, if done right, that financing could actually decrease the cost of running your house, because the money you save in lower utility bills will be more than compensative for the additional little bit of mortgage.

Now, when you sell your property, it's—okay, the investments are there. And so that helps overcome the initial hurdle of capital that is very important. This weatherization could cost $10,000, $15,000 for middle-class homes. It also gets the middle class into this.

We're also looking at programs where banks could be encouraged to again for the affordability of the house, ask that, in addition to a termite inspection, they ask for the utility bills from the gas and heat. And in that section of the country, this is the spread of utility bills per square foot for average house. So just like a refrigerator label, this is the spread—the home you're thinking of buying is here or here.

This does—first, no taxpayer money. Very little transaction cost, but it motivates several things. You get a more informed consumer. You actually give incentive to the current homeowner to weatherize, to increase the resale value of the home. And you actually—then there's an incentive. It also helps the new home builders who are reluctant to put in energy efficiency. One can predict the energy efficiency of those new homes, and they look much better. And so you stimulate in many ways, just by the simple transaction that seems to me logical, in the sense that what a bank really cares about is the affordability of the home. It includes the taxes. It includes the mortgage rate. It includes the utility bills.

So there are things like that we're looking to do—and revolving funds yet another one, so that we actually get this, 1 million or 2 million homes is just the beginning. We need to get this self sustaining in a very deep way. So these are some of the programs we're thinking of piloting and testing.

Senator REED. Thanks very much, Mr. Secretary. Thank you, Mr. Chairman.

Senator TESTER. Thank you.

HYDROGEN FUEL CELLS

Senator DORGAN [presiding]. Senator Reed, thank you very much. Mr. Secretary, again, I regret that I was called over to the Capitol, but I appreciate your answering the questions of my colleagues. Let me go back to the issue of hydrogen. I want to ask a number of questions then we will let you be on your way.

The hydrogen fuel cell issue has been a part of the Department of Energy's portfolio for well over a decade now. In 2006, the Department of Energy developed and released the hydrogen posture plan. It laid out a 15-year strategy for hydrogen and fuel cell research, development, demonstration, and deployment.

Since about 2001, roughly $1.5 billion has been invested by the Federal Government in hydrogen and fuel cells, and industry and the States are estimated to have spent somewhere in excess of $4 billion. My understanding, from the experts who know, is that these programs have met their cost and their technical goals. Research has kept pace with key milestones established in the hydrogen posture plan.

So, again, I don't understand. Let me be more specific. Do you come to us saying you want to shut down these research projects in the middle of the research? Is that what the budget is asking us to do?

Secretary CHU. Well, it is a shifting of priorities. I would be very happy to talk to you about this and discuss this. But certainly it was more the intent of the 2000—the concern in the 2010 budget was focused more on the transportation sector and whether hydrogen cars could become a reality in let's say 20 years, and whether—or do we see it further out, and whether we should be investing these resources in, for example, much more efficient internal combustion engines, especially, from my point of view, diesels, since the new advances in diesels allow diesels to now meet California EPA standards. They're very clean diesels, and also the plug-in vehicles.

And so in terms of offsetting our imports of foreign oils, getting some more oil independence, really getting these things in the marketplace, I see those as more likely solutions in the next 20 to 30 years.

Senator DORGAN. I don't disagree with that at all, but do you think 50 years from now, that your hope is more efficient internal combustion engines, more diesel engines on the road? Or is it your hope that perhaps we do things that are transformative? For example, continuing to work on hydrogen fuel cells that are longer term? And if not the Department of Energy to work on this, who?

And then finally, you didn't quite answer the question. Do you really want us to shut down about I think 190 research projects that are in the middle of the project? And we just say, "You know what? That was yesterday's money, yesterday's Secretary, yesterday's idea. Shut them all down." And you really want us to do that?

Secretary CHU. Well, I'd be happy to work with you and look at the details of where the programs are and things of that nature. And we can work out——

Senator DORGAN. I'm hoping to help you with the funding for these projects, by the way, because I think—well, we may not be

around in the long term, in the long term, we're all dead. But the fact is the near term is not the only thing that's important to us. If we're going to be transformative, I think you look out beyond 5, 10, and 20 years.

WIND DYNAMOMETER

Let me ask you, Mr. Secretary, about an issue, wind dynamometer that is at NREL. My understanding is that we've spent a lot of money to test commercial wind turbines at NREL. I've been there. I've seen this, big investment in hardware. I'm told that the DOE is now pursuing competitive solicitation in the private sector for a dynamometer, rather than capitalizing on the investment made at NREL. Are we moving away from NREL as a center of expertise in this area, and if so, why?

Secretary CHU. Well, actually, I'll confess I don't know that part of it. I do know that we have this wind test facility at NREL and there's a dynamometer. Getting the private sector involved is something I think the Department of Energy is very interested in. So I don't know the exact details of that.

Senator DORGAN. Would you look at that?

Secretary CHU. Sure.

Senator DORGAN. And my understanding is, there's some interest in the Department of Energy to duplicate that investment in the private sector up in the Northeast, and I'd be very concerned about that. I mean, I would hope that we would continue having NREL as the center of that research.

Secretary CHU. Oh, well, there's something else—maybe it's this, but we are making investments in Boston, but that's a wind test facility. That's not——

PENSIONS

Senator DORGAN. That's not what I'm thinking of. And also—I'm going to say really nice things about you in a moment, but I do want to ask these questions. It appears to me there's about a $500 million to $1 billion shortfall on the pension side.

Secretary CHU. Yes.

Senator DORGAN. And I think my colleague from Utah mentioned that, and I didn't hear, but maybe you've answered it since I——

Secretary CHU. No, I actually didn't get to that. This is of great concern to us. We did scramble around for a lot of the money. This is a serious concern. We have a lot of employees and former employees, and we have an obligation to them. And so there was some last-minute scrambling to find some emergency funds. It's not completely covered yet. In the long term, this is an obligation the Department of Energy has in the sense that we have a liability. I don't think any other agency has this liability. We have to figure out a way, for example, of having our contractors move toward defined contributions rather than defined benefits. Of course, we grandfather in all the people that we've had obligation to. We're not talking about that. But this overhanging liability is something serious, and because of the stock market decrease and because of the new act that says it has 80 percent funded, we all of the sudden got these shortfalls.

We're aware of the problem. The long-term fix will probably have to be something like evolving toward—as we get in new contracts, toward defined contributions.

Senator DORGAN. Right. So we might have some unfinished business on the budget side. I mean, it appears to us it's a $500 million to $1 billion that's a shortfall. We'll have to continue to work with you on that.

RECYCLING SPENT FUEL

Let me ask if you could just describe again, so that I understand, in shorthand under what conditions would you consider recycling spent nuclear fuel?

Secretary CHU. If we could develop proliferation resistance, something that would be unlikely that terrorists, if they got hold of this material, could actually work with it as an example, if it has some soft protection, so it doesn't create a stream of separate plutonium or something that's easily shielded.

There's also the economic viability of the processes in general. We want to see industry saying there's a path forward which that we can really invest in these recycling plans. And finally, we need to develop generation IV reactors, high-energy neutron spectrum reactors that can burn down this waste.

I think actually all these things are solvable. It could take decades, but I'm certainly interested in looking at it, looking at the work. There's—if we extract a lot of the worth of the nuclear fuel, this is a clean source of energy, baseload energy, and I think the waste problem is solvable, and I think there's a likelihood if we do it right and get a bunch of very smart people on it, that we can develop these recycling methods.

Senator DORGAN. And I would say, as you look out there, decades out on the horizon exist not just this issue, but hydrogen as well, in the longer term. You come from a science laboratory, are a Nobel Prize winner, a very distinguished person and I feel very strongly that the administration has solicited the service of someone who's extraordinary. So I'm very pleased you're there.

But I also know where you are. You're in the Department of Energy, and that's a great place. You've got some great people there. But it's also an area filled with superglue in some areas. You just slow everything down then get it all stopped. On the issue of loan guarantees and the things that you've come to in this agency, an agency that in some areas, it just is almost impossible to move. You can observe more movement in a glacier than in the Department of Energy on some issues.

ACCELERATING LOAN GUARANTEES

So tell me about what you have discovered and what your experience is with respect to getting some of these Loan Guarantee Programs moving that were just dead stopped.

Secretary CHU. Well, we discovered first, that they could be increased by a factor of 5, maybe even 10. The only way we discovered this is actually, for example, we hired Matt Rogers, an outstanding person from McKinsey, and by literally first looking at other agencies in the Government, seeing how they do their loan programs, and then looking at how we do it, but then looking step

by step at everything and how you actually go about the business in terms of little horror stories here and there. They said that the amount of paper required was such that they were concerned of any loans below several hundred million dollars. They couldn't know how people could afford to do this because of the paperwork required, the amount of paperwork, 500 to 1,000 pages. We're working very hard to reduce that. The target is 50 pages. If you can't get your idea out in 50 pages, there's something wrong with it.

In terms of vetting, many of the times, if you have a dual vetting process, if there's a substantial financial investment and a bank does some of the things, we can then cooperate and do that. The idea that in helping the customers, the potential customers, there was a strong sense that you couldn't help any particular customer because it would be unfair, it was giving a particular advantage to that particular applicant. And so we're turning that around and saying there's another way to be fair—help everyone. It's a novel thought, but we're moving ahead on that.

And so what it really took after the first couple weeks to say, okay. The people there need a little help in seeing that you can actually move this considerably faster. The idea that you go in serially and then you get to the next point and you go again, it's like a long relay race. Every time you pass the baton, the baton's dropped.

In actual fact, in industrial project management, in good project managements in the Federal Government, that's not done that way. You can start many things nearly in parallel. So we essentially are looking at every nook and cranny and finding that we can actually increase this considerably. And so, again, we went from getting the first loan out in 1½ years to getting the first loan out in 58 days from the time I took office. And so we are very anxious to see this continue.

You made a reference to the fact that it is—the friction in the Department of Energy is considerable. Our committee is more that Newton was right—the body set in motion tends to stop the next day, unless you continue to apply pressure.

But I think the good news is as we work through this and actually give people the tools and the ideas of how to do this, there is now beginning to be genuine excitement in the career people.

Senator DORGAN. Senator Tester, did you have other questions?

Senator TESTER. Yes, I just had one, if I might.

Senator DORGAN. Let me just—if you might, let me finish with my one question, then I'll recognize you for whatever you wish.

DECARBONIZING COAL

People are coming to my office with really interesting ideas. I had a person in some while ago who has a couple hundred scientists working on developing synthetic microbes to chew the coal. That's a scientific term, chew the coal, I guess. Actually, the synthetic microbes would consume the coal, and through the consumption of coal by these microbes, you would produce methane, and probably even be able to do that in situ, underground.

I have no idea whether that's just harebrained or unbelievably interesting in the next 5 years, 25, or 50 years. Someone comes to

me with a patent that says, "I have the silver bullet with respect to decarbonizing coal." In fact, we had a hearing on it, and the guy that comes to the hearing is the recognized expert in the country from Stanford on cement and concrete. And he takes all of the flue gas from a coal plant, and through mineralization, or whatever, produces a product that is, he says, harder than concrete and more valuable and contains all of the CO_2.

A company comes to me and says, "We have a process by which we separate CO_2 with the flue gas, and we get nitrogen, hydrogen, and baking soda, and baking soda contains all the CO_2." Those are just three, but there are lots of them, lots of people out there doing interesting things.

Give me your assessment. And the reason I'm asking this is because I believe, again, we're going to continue to use coal in the future. The question is, how effectively and at what cost do we decarbonize coal?

Give me your assessment of those kinds of things and ideas, and are you running into them, and do you believe they represent great promise for the future?

Secretary CHU. I'm running into them. I think many of them are very interesting, and we are looking at them very hard. I think one of the things that you're seeing and the things I'm also seeing is there's an unleashing of incredible ingenuity and imagination. Not all these things will work. Most of them will probably not work, but yet out of that, I think there's a great possibility that there would be some really very good ideas.

I'm a big fan of, at least in these early stages, where it costs very little to explore these ideas, to explore as many of them as possible. Now, this is actually one of the joys of being in the job I have. We can look at these wonderful new ideas and say, "Is there going to be merit in this 5, 10, even 15 years out," of all those things, the concrete, the conversion of coal, so most of the pollutants and the really bad stuff is just left deep underground, and you just sip out the natural gas.

These are potentially very good ideas. What's especially nice about some of these ideas, especially the one on the bio part, is that's occurring in an area where the science is advancing very rapidly. And so the chance of a dramatic breakthrough—because we now know how to reprogram these microbes in completely new ways, offer real hope.

Whenever you see the science advancing most rapidly, there's more likelihood of getting really big breakthroughs.

Senator DORGAN. Senator Tester?

RENEWABLE PORTFOLIO STANDARD

Senator TESTER. Thank you, Mr. Chairman. I just—there are two policies that we're wrestling with right now. One of them is putting a value on carbon, and the other one is a renewable portfolio standard. Assuming we put a value on carbon, is there really a need for a renewable portfolio standard?

Secretary CHU. I think there is. Because of the way you are going to be capping and bringing down the cap in a gradual way, that it—and the type of legislation that is being discussed actually has

to allow the United States to make this transition over a period of time. I mean, that's realistic. We just have to do that.

And what our renewable portfolio standard does is it gives you a guaranteed market, and so it can tell investors, we need to get to let's say 15 or 20 percent. The price signal, if you will, from the cap and trade and the decrease in the carbon emissions is one way, but that has to be, by its very nature, in order for the country to make a transition, a slow gradual process, and a renewable electricity or renewable clean energy standard, you say, now I've created a market, and so it's a draw, so that the investment community can say, "Yes, I can put in my wind turbines or my photovoltaics." So they actually complemented each other.

Senator TESTER. Okay. Thank you very much.

ADDITIONAL COMMITTEE QUESTIONS

Senator DORGAN. Well, Mr. Secretary, you are the first Cabinet Secretary to use the term joy in describing your work in all the years I have served here, but I expect that joy reflects your background as someone who ran a science lab, and having access to all of the interesting things that are going on in these laboratories.

At this time I would ask the subcommittee members to please submit any additional questions they have for the record.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR BYRON L. DORGAN

Question. The DOE currently has approximately 190 multi-year contracts for hydrogen related research that would be terminated under the fiscal year 2010 DOE budget request. How many of these contracts go through fiscal year 2010? What is the amount of funding that would be required in fiscal year 2010 to honor these existing contracts?

Answer. The refocused Fuel Cell Technologies program allows the Department to prioritize technologies that will have a more immediate energy impact and bring consumers advanced transportation choices sooner. Certain projects in the areas of hydrogen production and delivery, hydrogen storage, technology validation, systems analysis, manufacturing, safety and codes and standards, education, and market transformation would not be funded at the 2010 request level. If the Department continued on the previous schedule, the 190 projects would require approximately $105 million in fiscal year 2010. However, project performers know that funding is subject to annual appropriation and changing priorities.

Question. Congress set up the Hydrogen Technical Advisory Committee (HTAC) to provide detailed analysis of the hydrogen and fuel cell vehicle program to the Secretary. Did you consult with the HTAC before making the decision to terminate the hydrogen and fuel cell vehicle programs?

Answer. The Secretary considered all available information before making the decision to re-focus research, development and demonstration activities on fuel cell system technologies. While the HTAC periodically submits reports, letters and other information to the Secretary for consideration, the HTAC primarily provides valuable technical progress information, which is only one of multiple entities supporting DOE funding allocation decisions.

Question. The 2006 Hydrogen Posture Plan established key technical milestones and timelines. Would you agree that the hydrogen program has been meeting and exceeding these milestones? If this is the case, how would the fiscal year 2010 budget request not be short-circuiting the progress being made by this program?

Answer. The Department agrees that the program has been meeting a number of the milestones. However, given the Nation's economic climate and the urgency in addressing climate change and petroleum reduction, the Department is balancing the advanced transportation technology portfolio to fast-track lower-risk energy technologies and to bring consumers near-term, advanced transportation choices.

Technologies such as biofuels and plug-in electric drive vehicles will achieve benefits sooner, at less cost, and with less technology risk than hydrogen fuel cells.

In addition, the Recovery Act provides approximately $41.9 million for near-term benefits such as commercialization and deployment of fuel cells and job creation in fuel cell manufacturing, installation, maintenance, and support services that will help develop a supply base that could eventually support automotive applications. The Department also plans to spend up to approximately $50 million in fiscal year 2010 through the Office of Science for relevant cross-cutting basic research (e.g. catalysis, membranes and biological/photoelectrochemical approaches) to enable breakthroughs in hydrogen technologies and $16.4 million through the Office of Fossil Energy to continue work on hydrogen production from coal, with carbon sequestration, due to the importance of zero carbon approaches.

QUESTIONS SUBMITTED BY SENATOR PATTY MURRAY

Question. Secretary Chu, I am pleased to see an overall increase for Energy Efficiency and Renewable Energy. We've got to move forward toward a clean energy economy and this will help keep us on that path.

And now that you have spent some time at the Department, I'm looking forward to hearing an update on the Water Power Program. As you know, the Program received $40 million in fiscal year 2009 and the President is requesting a 25 percent reduction in funding, which I am very concerned about. We must continue investment in our existing hydro facilities to allow us to use those flexible resources to firm up intermittent renewable resources like wind and solar. And we must also increase our work to develop new marine and hydrokinetic technologies that may also be able to act as base load resources in the future.

What are your priorities for the Water Power program, specifically with regard to both marine and hydrokinetic technologies and also with regard to conventional hydropower?

Answer. DOE is excited about the potential to develop both emerging marine and hydrokinetic technologies as well as untapped hydropower resources, including efficiency or capacity upgrades at existing facilities, the construction of hydropower plants at existing non-powered dams, and the possible construction off small or "low-impact" hydropower and pumped storage facilities.

The $40 million appropriated for water power in fiscal year 2009 allowed DOE to initiate aggressive action to address both marine and hydrokinetics and conventional hydropower, and the Department is working diligently to ensure this new increased level of funding is spent carefully and wisely. The Department's current priorities for marine and hydrokinetic technologies (i.e. wave, tidal, in-stream, ocean current, and ocean thermal) are to evaluate the cost and performance of the various technology types, to determine how much energy is available and extractable from each resource, to support the industry in designing and testing innovative energy conversion devices, and to predict and evaluate the possible environmental impacts of water power technologies. As the size of these resources and the ability of emerging technologies to capture those resources becomes clearer, the Department will be better able to determine if higher funding levels are necessary.

DOE also recognizes that incremental conventional hydropower generation requires a careful second look, and is particularly enthusiastic about its potential to provide on-demand, dispatchable power to support grid stability and further integrate variable generation. The Department's priorities for hydropower are to address barriers to the development of incremental hydropower generation (including efficiency and capacity upgrades at existing facilities and the construction of facilities at existing non-powered dams) and to address the development of pumped storage. DOE is undertaking a comprehensive effort to understand existing hydropower assets and resources, to identify undeveloped incremental hydro resources and costs, to quantify and maximize the value of the existing hydro fleet to support the grid, and to improve the environmental performance of hydropower generation in the United States.

Question. Mr. Secretary, I've already reiterated my invite for you to come out to Washington and see the DOE footprint in my State. And I also want to encourage you—again—to visit the Marine Sciences Laboratory in Sequim, Washington. Not only is it located on the beautiful Olympic Peninsula, it is also the Department's only marine sciences lab. I encourage you to use the Water Power Program to expand the work at the lab, and utilize the expertise and knowledge there.

I am not reassured that this administration sees the value of this potential clean energy source. Can you tell me how you plan to integrate the Marine Sciences Laboratory into the Water Power Program?

Answer. The Department is funding a number of activities in the Pacific Northwest, including PNNL's Marine Sciences Lab. Researchers at the Marine Sciences Laboratory work closely with the DOE-funded Northwest National Marine Renewable Energy Center, a partnership among DOE, the University of Washington, and Oregon State University. The Lab also supports environmental assessments at two tidal energy projects in the Puget Sound led by 2008 DOE grant recipients, Verdant Power and Snohomish County Public Utility District, so that it can thoroughly test and develop marine energy technology designs and launch demonstration projects. In addition, two DOE solicitations (FOAs No. DEFOA0000069 and 0000070) for water power projects closed on June 4, which included environmental studies for marine energy, and for which PNNL was eligible to apply.

Question. Secretary Chu, hydropower is an important clean energy resource in the Pacific Northwest. Work is needed to assess potential resources and environmental impacts, technical upgrades, integration with renewable, and the potential of pumped storage. How do you plan to support these conventional hydropower needs within the Water Power program?

Answer. The Department recognizes the strong role that conventional hydropower plays in our Nation's renewable energy portfolio and is enthusiastic about exploring further the untapped potential of incremental conventional hydropower. We are addressing its needs in our Water Power Program through four strategic objectives: understanding assets and resources, increasing incremental power generation, improving environmental performance, and maximizing hydropower values to the grid. A key first step is a project the Department is calling the National Hydropower Asset Assessment. This effort will build and analyze a unique and comprehensive database of existing Federal and non-Federal projects, their generation outputs, and water availability at the projects. This assessment will also provide a basis for evaluating current technology needs and opportunities that will help hydropower maintain its important position among renewable energy in the United States.

The Department is also soliciting new, industry-led projects to assess undeveloped hydropower resources at existing dams in the United States. This opportunity is encompassed within the Advanced Water Power Funding Opportunity Announcement (DE–FOA–0000069), which will be announced this summer. DOE laboratories are also engaged in providing new engineering and environmental R&D to support the hydropower industry.

Question. Mr. Secretary, what incentives can we put in place to facilitate the development of new pumped storage resources and the continued investment in our existing hydro facilities, to allow us to use those flexible resources to firm up intermittent renewable resources like wind and solar?

Answer. Development of new pumped storage projects in the United States faces major challenges in two areas: financing very large capital construction costs, and surviving a long, costly, and uncertain regulatory process that is as complex as that associated with nuclear power. If new pumped storage projects used renewable energy in their pump cycle, these projects could also get consideration for inclusion in renewable energy standards, which would provide an additional financial incentive for development. Other policy initiatives that would help this type of development include streamlining the regulatory process and designing energy markets that return more reliable, long-term benefits to developers of generation units that provide valuable services to the Nation's electricity grid.

DOE recently issued a Notice of Intent on the $3.3 billion Smart Grid Investment Grant Program and a draft Funding Opportunity Announcement (FOA) for an additional $615 million for Smart Grid Demonstrations funded by the Recovery Act. Energy storage technology and specifically smart grid applications, including integration of pumped hydro storage with renewable resources like wind and solar, are within the scope of these two Recovery Act projects. The Department is in the process of reviewing all comments received during the public commenting period for incorporation into the final FOAs, both of which are expected to be released in June 2009 through the FedConnect portal at www.fedconnect.net.

Question. As DOE builds toward President Obama's clean energy economy, how will DOE evaluate a resource's contribution to and potential to meet these important, ambitious energy and environmental goals? What role does DOE anticipate for hydropower in helping to meet these objectives, especially as Congress moves to address global warming?

Answer. DOE is actively investigating the potential role of water power technologies, including both emerging marine and hydrokinetic technologies as well as conventional hydropower, in meeting the President's clean energy goals.

The Department is working to better understand the role for the full suite of marine and hydrokinetic technologies, including wave, tidal, ocean current, river instream, and ocean thermal energy, by evaluating the cost and performance of the

various technology types, determining how much energy is available and extractable from each resource, supporting the industry in designing and testing innovative energy conversion devices, and predicting and evaluating the possible environmental impacts of water power technologies. As the size of these resources and the ability of emerging technologies to capture them becomes clearer, the Department will better be able to assess their true potential in contributing substantially to the national electricity generation portfolio.

In addition, DOE is enthusiastic about the potential development of certain untapped hydropower resources, including efficiency or capacity upgrades at existing facilities, the construction of hydropower plants at existing non-powered dams, and possibly the construction off small or "low-impact" hydropower and pumped storage facilities. As a large-scale, and quickly dispatchable generation source, incremental hydropower may be able not only to provide a clean and renewable source of electricity but also facilitate the further integration of intermittent renewable resources.

Question. As you know, transportation emissions are a significant source of greenhouse gas emissions. This administration is investing considerably in alternative fuels for energy security and environmental reasons; however, most of those are focused on personal vehicles. As you know, air transportation is solely dependent on jet fuels at this time. What thought has DOE given to advancing jet biofuels, including research and development, feedstock development, technology and infrastructure?

Answer. Traditionally, DOE has focused on ground transportation fuels, while most air transportation work has been conducted by the Department of Defense, the Department of Transportation and the National Aeronautics and Space Administration. However, DOE has begun to focus on the production of heavy duty fuels including, "green" and renewable diesels, and aviation fuels.

For example, the Joint BioEnergy Institute led by Lawrence Berkeley National Laboratory is re-engineering microbes to produce hydrocarbon fuels like green gasoline, diesel, and jet fuel. A subset of recently selected DOE Energy Frontiers Research Centers will focus on fundamental research related to producing advanced biofuels, such as bio-oils from microalgae, which are promising intermediates for the production of advanced biofuels, including green jet fuel. The National Renewable Energy Laboratory, Sandia National Laboratory, and other laboratories are also launching research into algal biofuels for the Defense Advanced Research Projects Agency and Air Force Office of Scientific Research. Algae-based fuels will also be eligible for both Advanced Research Projects Agency-Energy and DOE Loan Guarantee funding opportunities.

Additionally, DOE will use Recovery Act funding to support a competitive solicitation for two research consortia aimed at accelerating the development of cost competitive advanced fungible biofuels, which include hydrocarbon fuels, diesel and jet fuel, and algae based biofuels which also include jet fuel. The solicitation is expected to be released in the summer of 2009. In order to capture relevant technologies that are ready for deployment, a current competitive solicitation closing on June 30, 2009 allows for pilot- and demonstration-scale biorefineries that include jet fuel from biomass. DOE's Office of Fossil Energy announced $70.6 million of Recovery Act funding will be spent to facilitate the existing algae-based carbon mitigation project at Cholla Power Plant in Holbrook, Arizona to expand testing with a coal-based gasification system. The goal is to produce fuels from domestic resources while reducing atmospheric CO_2 emissions. DOE's Office of Fossil Energy and the National Energy Technology Laboratory issued a Recovery Act funding opportunity on June 8 that allows conversion of to CO_2 biomass (algae, for example) and subsequent biofuels production as a mechanism of CO_2 sequestration and use.

Question. Secretary Chu, I want to ask about a section of the hydrogen fuel cell budget, the Market Transformation program. This subcommittee has in the past supported the Market Transformation, which helps support fuel cell deployment in early commercial applications, because we share your view that we ought to do now what we can do now on fuel cells. I understand that you allocated a small part of the stimulus dollars to fuel cell deployment this year. Can you tell me why the President's budget proposes no funding for Market Transportation program?

Answer. The President's budget proposes no additional funds for market transformation activities in fiscal year 2010 because the $41.9 million of Recovery Act funding dedicated to fuel cell market transformation activities will support 13 projects over fiscal year 2009 and fiscal year 2010. These projects will deploy more than 1,000 fuel cells and will help create jobs in fuel cell manufacturing, installation, maintenance and support service sectors. Together with $72.4 million of industry cost-share, the total 2-year funding for these projects is $114.3 million.

QUESTIONS SUBMITTED BY SENATOR ROBERT F. BENNETT

LOAN GUARANTEES—LOAN PROGRAM—3.5 YEARS AND NO REWARDS

Question. Mr. Secretary, the Department has taken over 3.5 years to establish the loan guarantee program and it still has not granted a single loan guarantee. I believe this program has tremendous potential, but worry that it is not being implemented in a timely and effective manner. For example:

GAO recently notified the subcommittee staff that the current subsidy model used to establish the risk premiums paid by applicants was suspended in February by OMB.

Finally, I understand you have also proposed several changes to the operations of the loan guarantee program, but many of these reforms have yet to be implemented.

How soon, will you be implementing your reforms and will any of these changes require legislation?

Answer. The Department is continuously implementing changes in its procedures that facilitate the loan guarantee process. The Department of Energy has not identified any needed legislative changes.

Question. When do you expect to make final awards in light of OMB suspending the use of the credit subsidy model?

Answer. To clarify, OMB did not suspend the credit subsidy model. In implementing the model, the Department identified a technical issue related to certain types of projects and OMB and DOE have resolved the issue. The Department issued a conditional commitment for its first loan guarantee in March and issued two additional conditional commitments in July.

Question. Is there anything Congress can do to help?

Answer. The Department appreciates Congress's support for this important program.

INDUSTRY LETTER

Question. I have attached a copy of the letter sent to the President regarding specific reforms to the Loan Guarantee program.

Can you please review each of the specific recommendations and provide a written response to the subcommittee as to your position of each of the policy recommendations and possible impact to the program.

Answer. The Department is currently reviewing the letter.

NOT ALL SCIENCE FUNDING IS EQUAL—ESPECIALLY AT THE WEAPONS LABS

Question. Mr. Secretary, I am troubled by the disparity in funding for applied and fundamental scientific research provided to DOE labs verses the NNSA labs. Clearly, the cancellation of the Los Alamos Neutron Science Center (LANSCE) Refurbishment is the most glaring example of the selectiveness of the research funding in this budget. The LANSCE facility is the scientific corner stone of Los Alamos, serving both classified and unclassified work and with over 500 users annually.

How do you explain the failure in the budget to link the DOE and NNSA science?

Answer. Budgeting is, in the end, an exercise in priorities and choices with limited resources. While there is certainly good science that could be done with a refurbished LANSCE, other investments in both NNSA and Science facilities will yield a greater and more immediate benefit. A refurbishment could be considered in the next budget cycle.

Question. The OMB Web site lists LANSCE refurbishment as a terminated program and specifically states one reason being that Nuclear Energy Office doesn't support isotope production any longer. Last year the isotope program was shifted to the Office of Science program. Will LANSCE continue to have a roll [sic] in the Science program?

Answer. The Isotope Production Facility (IPF) at LANSCE uses a portion of the H^+ beam extracted at 100 MeV from the accelerator; this facility produces a variety of radioisotopes used in medical diagnosis and treatment and for scientific research. Together with DOE's Brookhaven and Oak Ridge National Laboratories, the IPF provides the national supply of radioisotopes not available commercially for both research and applications. In addition to regular fiscal year 2009 appropriations and an fiscal year 2010 request within the Office of Science, the IPF is currently receiving Recovery Act funds from the Office of Science for enhanced isotope production capabilities and R&D. The LANSCE accelerator also supplies protons to the Lujan Center, a pulsed spallation neutron source that is used by researchers supported by the Office of Science, NNSA, and other agencies.

THE NEED FOR SCIENTIFIC LEADERSHIP WITHIN THE NNSA

Question. Mr. Secretary, in light of your budget, which fails to adequately invest in building the science missions at the NNSA labs, I believe we need to establish a new position within the NNSA to steward and cultivate scientific research using the existing NNSA facilities. I believe this position should report to Secretary, Deputy Secretary and the NNSA Administrator. This might help raise awareness of both the weapons science, and non-weapons science that goes on at our NNSA labs. Certainly the grand challenge of energy security and climate change science are of such complexity that this work can and should be shared with all the labs.

I am considering a modification to the NNSA Act to create a new position within the NNSA reporting directly to you to lead the NNSA science program and to work with the rest of the Department to integrate the national security capabilities with those in basic and applied programs within DOE. What do you think about that?

Answer. I share your concern about sustaining science and engineering vitality at the NNSA's laboratories at Los Alamos, Livermore and Sandia. We are considering how to best broaden and sustain our science underpinning of nuclear security and how to do that appropriately for the related interests of other agencies that use these laboratory capabilities for science and national security missions. It is possible that a new position as you describe could be appropriate and useful in sustaining and advancing the science and engineering the Nation needs. At present we are focusing on basis and needs for our nuclear security science and engineering considering both the Department's missions and the related interests such as those in the intelligence community, the Department of Defense and the Department of Homeland Security. Within a few months, when I have a clearer picture of the basis and needs for these science and engineering skills, we will be in a better position to discuss the change you propose.

FOSSIL ENERGY—FUTUREGEN

Question. The FutureGen project was halted due to cost escalations, but it is my understanding that the administration is considering resuming this project, using $1 billion in Recovery Act Funds to do so.

Can you share with us your thoughts on resuming this project?

Answer. DOE officials have been meeting with officials of the FutureGen Industrial Alliance, Inc., and on June 12, Secretary Chu announced that an agreement was established with the Alliance to move forward with the FutureGen project pending a joint decision based on a detailed cost estimate and fundraising activities, thereby limiting the risk of cost increases while accomplishing the goals of the program.

Question. There is roughly $1.5 billion available for the Clean Coal Power Initiative (CCPI) round three solicitation. This far exceeds the initial requested amount for this solicitation, and in large part is due to project defaults from previous rounds. This research also mirrors the demonstration goals of building a zero-emission coal plant as proposed by FutureGen.

Will you please explain to us why you are considering restarting the FutureGen project, when that same type of research is available for the CCPI round three solicitation?

Answer. The FutureGen project has already completed conceptual design, project siting, approximately 1 year of preliminary design activities, an extensive Environmental Impact Statement (EIS), and an associated risk assessment. With those activities already completed, if the project was reinstated in the near future, the FutureGen Alliance conceptually could complete preliminary and detailed design and, if a decision were made to proceed, potentially could start the construction phase in 2010. Conversely, commercial demonstration projects resulting from the CCPI round three solicitation are at the proposal or project definition stage of development. Accordingly, it may take those projects considerable time to commence construction, compared to FutureGen. Given the time-sensitive nature of both climate change and economic recovery, the FutureGen project (if it is restarted) could provide a demonstration of technology that could accelerate follow-on activities such as CCPI projects (where relevant.) Also, CCPI demonstration projects may involve different technologies and site locations than FutureGen. We believe it is prudent to develop a portfolio of power plant and carbon capture technologies, as well as to compile operational experience on different regional sequestration geologies throughout the United States.

The FutureGen Project will provide for the design, construction and operation of a coal-fueled, integrated gasification combined cycle (IGCC) with pre-combustion subsystems for the capture of carbon dioxide and geologic sequestration into a saline formation. In comparison, CCPI–3 will provide commercial demonstration projects

that may include post-combustion capture systems or an oxy-fueled combustion process. CCPI–3 will provide one or more sequestration options, including beneficial reuse in enhanced oil recovery or enhanced coal bed methane recovery options as well as the possibility of basalt formations or stacked storage. The different approaches provided by these programs will support an expanded portfolio providing the DOE the ability to make progress toward capture and sequestration goals.

SCIENCE

Question. This budget includes over $300 million in new Secretarial priority initiatives, while funding for Nuclear Energy, Fossil Energy and NNSA Science have all been reduced.

How do you reconcile this investment?

Answer. Under the Secretary's proposed initiatives the Department's overall investment in Nuclear Energy, Fossil Energy, and NNSA will actually increase, with new funding going into areas with the biggest potential pay-off for the Nation. In Nuclear Energy, the Secretary is proposing two new Energy Innovation Hubs, one to support "Extreme Materials" with the goal of achieving higher reactor efficiencies and one to support advanced computer modeling and simulations of nuclear processes and systems. For Fossil Energy, a Hub is envisioned to advance Carbon Capture and Sequestration technology. And, within the NNSA, funding shifts from construction to the transition of the National Ignition Facility to a fully capable experimental facility in pursuit of the first ignition campaign.

In addition, the RE–ENERGYSE program (Regaining our ENERGY Science and Engineering Edge) is a $115 million new initiative designed to attract and train the next generation workforce for the 21st century energy economy. RE–ENERGYSE will support education and R&D initiatives in all energy programs.

ARPA–E

Question. In light of the new Energy Hubs, large untapped potential in the loan guarantee program, and substantial funding increases for EERE and Science, I am trying to figure out the role ARPA–E at the Department of Energy, except as another layer of bureaucracy.

Can you please provide a specific example or technology that will benefit from ARPA–E and how is it different from the loan guarantee program, office of science or renewable energy efforts?

Answer. ARPA–E is a highly entrepreneurial program that will fund "creative, out-of-the-box, transformational" energy research not currently funded by other programs. ARPA–E seeks to accelerate transformational advances in areas which address national energy priorities and are too risky for industry to invest in without public support. Transformational R&D is about creating new ways of doing things and leading to the next generation of technology that will allow the United States to be competitive in the global market.

ARPA–E will seek out the best ideas and move quickly to bring selected immature energy technologies with exceptional potential beyond the risk barriers that prevent their translation from the laboratory bench to the marketplace. Essential aspects of this nimble and flexible approach include:

—*Technology Focus Flexibility*.—ARPA–E will look for the best opportunities to improve energy security and curb climate change by making significant programmatic investments lasting 2 to 5 years. ARPA–E will fund transformational, high risk technologies with the potential for 2–3 × improvements in technology performance and/or cost when compared to current technologies. ARPA–E will then move on to the next big ideas, shifting into and out of areas depending on the most promising opportunities for transformational change.

—*Programmatic Flexibility*.—ARPA–E will have the flexibility to forge and nurture optimized partnerships that combine unique talents and insight from different fields. The programs can use DOE's "Other Transactions" authority (Technology Investment Agreements) to help attract organizations that traditionally do not participate in Government RD&D programs. Also, ARPAE will promote results-oriented programs through the use of challenging program milestones and the discipline to end programs that fail to perform.

—*Organizational Flexibility*.—ARPA–E is a lean, flat organization that reports directly to the Secretary of Energy. ARPA–E has very broad hiring authority to attract program managers from universities, industry, the venture capital community and elsewhere. Program managers will be part of the organization for 3 year terms—not for their entire career. After having made a successful technology impact, they will move on to other opportunities in industry, academia, and elsewhere. ARPA–E's structure will promote technical and programmatic

agility by ensuring that the organization has the right resources to address the goal of enhancing the United State's economic and energy security.

These essential aspects of ARPA–E's approach will allow scientists and technologists to rapidly bring transformational ideas to a level of maturity sufficient for industry to take over development and bring the resultant technologies to market. ARPA–E's mission is to enhance the economic and energy security of the United States by developing new energy technologies that offer the potential for making significant progress toward reducing imported energy; reducing energy-related emissions, including greenhouse gases; and improving energy efficiency.

Each of the other existing DOE organizations has a unique role that ARPA–E complements.

—The Office of Science (SC) is charged with discovery and knowledge generation. SC is focused on the fundamentals of energy-related science, generating new discoveries and a base of knowledge which are used to create future energy technologies and improve existing ones.

—The Office of Energy Efficiency and Renewable Energy (EERE) and the other Applied Programs at DOE are focused on applied R&D as well as demonstration and deployment activities in specific, targeted, program areas which address national energy priorities and in collaboration with industry. Both EERE and ARPA–E focus on high pay-off technology development. However, EERE supports a more focused suite of technologies through a longer gestation period. Such longer-term support may include commercial viability demonstration projects which are often necessary before market acceptance of capital-intensive energy technologies as well as activities which address other information, market, and regulatory barriers to technology adoption. The commercial demonstration projects involve large scale engineering and process integration work and require specialized management and oversight.

—The Energy Innovation Hubs, modeled on the Department's successful Bioenergy Research Centers, will focus significant R&D resources within SC, EERE and other Applied Programs on a sustained development approach to basic and applied R&D on our most critical energy science and technology challenges. This is to be contrasted with the opportunistic style of ARPA–E, which is designed to push an area rapidly forward and then move on to another priority. Each Hub will be comprised of a highly collaborative team spanning many disciplines and drawn from the full spectrum of R&D practitioners—including universities, private industry, non-profits, and national laboratories—and each Hub is expected to become a world leader for R&D in its topical area. The Hubs will support cross-disciplinary R&D focused on the barriers to transforming energy technologies into commercially deployable materials, devices, and systems. Each Hub has proposed funding at $25 million per year, for a 5-year term, with additional start-up funding of $10 million in the first year for renovation (but not "bricks and mortar"), equipment, and instrumentation.

—The Loan Guarantee Program is for a later stage of technology development, guaranteeing loans to support early commercial use of advanced technologies (and for a limited time commercial technologies under the Recovery Act). The Loan Guarantee Program is targeted at early commercial use, not energy research, development, and demonstration programs.

Each of the organizations has a unique contribution for creating, developing, and deploying the energy technologies this Nation needs. ARPA–E was formed this spring and has released its first solicitation, but has not yet selected nor funded any projects. ARPA–E is organized to manage high risk R&D projects proactively. Many years of experience in scientific research and technology development have shown that different stages of the science and technology enterprise need different management styles and organization. ARPA–E complements the existing DOE organizations by adding one specifically organized and focused on high-risk transformational technologies.

NUCLEAR ENERGY

Question. Will the United States continue to play a role in the Global Nuclear Energy Partnership international discussions and contribute actively to these meetings and support international research and best practices regarding nuclear safety, security and nonproliferation? Will the Department of Energy continue to send staff to participate in these meetings?

Answer. Yes, the United States continues to support the objectives of the international component of GNEP and the use of civil nuclear energy in ways that advance safety, security and nonproliferation. The Department continues to participate in the GNEP international meetings while the subject of how best to achieve GNEP-

international objectives is undergoing an interagency review. We believe that proliferation issues should be a top priority in any discussions about the expanded use of civil nuclear energy and, in particular, in discussions that relate to development, deployment and operation of fuel cycle technologies. Thus, it is important for the Department to remain engaged in international meetings and activities that are developing strategies to ensure reliable nuclear fuel services and to provide management options for spent fuel in a manner that minimizes proliferation concerns.

YUCCA MOUNTAIN

Question. Nuclear power will be critical to reaching our energy independence and reducing our reliance on fossil fuels. Yet, with the termination of Yucca Mountain in this budget, we still have no clear strategy on how to deal with nuclear waste.

Exactly what is the Department's strategy to deal with spent fuel?

Answer. The administration intends to convene a "blue-ribbon" panel of experts to evaluate alternative approaches for meeting the Federal responsibility to manage and ultimately dispose of spent nuclear fuel and high-level radioactive waste from both commercial and defense activities.

Question. Why should the ratepayers, who have paid $20 billion in fees, be forced to continue to store on site and not be entitled to a refund of these fees?

Answer. We remain committed to meeting our obligations for managing and ultimately disposing of spent nuclear fuel and high-level radioactive waste. The administration intends to convene a "blue-ribbon" panel of experts to evaluate alternative approaches for meeting the Federal responsibility to manage and ultimately dispose of spent nuclear fuel and high-level radioactive waste from both commercial and defense activities. The administration looks forward to ongoing dialogue with members of Congress, interested stakeholders, and others as we review these alternative approaches in the months ahead.

Question. You have announced that you intend to appoint a Blue Ribbon Commission to consider all the options for addressing our spent fuel needs.

When do you intend to appoint this commission and what will they specifically be asked to consider?

Answer. The "blue-ribbon" panel will provide the opportunity for a full public dialogue on how best to address this challenging issue and will provide recommendations that may form the basis for working with Congress to revise the statutory framework for managing and disposing of spent nuclear fuel and high-level radioactive waste. As we go forward with convening the panel, I will keep Congress informed of our progress.

IDAHO NATIONAL LAB—NEXT GENERATION NUCLEAR PLANT (NGNP)

Question. Mr. Secretary, the Idaho laboratory has aggressively pursued the Next Generation Nuclear Plant (NGNP) project. The Energy Policy Act of 2005 authorized the construction of this reactor at the Idaho National Lab.

The fiscal year 2010 budget documents make no mention of this plant. In fact, rather than prioritizing research on two advanced technology reactors which were down selected last year, this budget proposes to expand research back to 6 types of advanced reactors.

Can you please explain the justification for expanding the Department's research priorities? Where is this program headed and what does it mean for the NGNP reactor at Idaho?

Answer. The fiscal year 2010 budget request of $191 million represents a firm commitment to move forward with needed long term research and development on underlying technologies supporting Generation IV reactor concepts, including high temperature gas reactors under consideration for the Next Generation Nuclear Plant (NGNP). The request also includes $35 million for a modeling and simulation Energy Innovation Hub. The Department is currently evaluating its long-term plans for the NGNP project, which would rely on the private sector entering into a cost-sharing partnership with the Department. This budget request reflects the Department's commitment to be a strong partner in support of gas reactor technology.

PENSIONS

Question. Understanding that the pension funding shortfalls continue to shift on a daily basis; will the Department please provide written quarterly updates regarding the estimated pension shortfalls and programmatic impacts?

I think every member of this subcommittee would classify Environmental Cleanup as a priority, and you can see this in the funding provided in the Recovery Act. However, your request decreases the funding from fiscal year 2009 based on funding

in the Recovery Act. EERE and Science also received large sums of money in the Recovery Act, but both of those programs are increased in your budget request.

How can you justify cutting cleanup because of Recovery Act funds, when you have a $400 million pension shortfall in this program?

Answer. The Department closely monitors the funding obligations associated with DOE contractor sponsored defined-benefit (DB) pension plans. Each contractor that sponsors a DB pension plan collects information to determine a plan's funded status as of the end of each pension plan year (that for most plans is December 31) that is then certified by a plan's actuary as of April 1. This funded status is the basis for determining what level of funding the contractor must contribute to a DB pension plan to ensure that as of the end of a plan year the plan is funded in accordance with applicable law (e.g., the Employee Retirement Income Security Act) and Departmental direction. Evaluations of a plan's funded status at interim points during the pension plan year would not change the level of funding required for that pension plan year or provide any certainty about what level of funding will be needed for the next pension plan year. Therefore, quarterly updates on the funded status of a plan would not provide information that would be useful in determining the amount of funds that will be needed to meet annual funding requirements. However, the Department is prepared to brief your staff on this issue at any time.

The fiscal year 2010 budget request for the Environmental Management program supports the Department's mission and allows contractors to make all required pension payments to their DB pension plans.

Question. Do you foresee any layoffs at any of the cleanup sites as a result of unfunded pension obligations?

Answer. The Department closely monitors the funding obligations associated with DOE contractor sponsored defined-benefit (DB) pension plans. Each contractor that sponsors a DB pension plan collects information to determine a plan's funded status as of the end of each pension plan year (that for most plans is December 31) that is then certified by a plan's actuary as of April 1. This funded status is the basis for determining what level of funding the contractor must contribute to a DB pension plan to ensure that as of the end of a plan year the plan is funded in accordance with applicable law (e.g., the Employee Retirement Income Security Act) and Departmental direction. Evaluations of a plan's funded status at interim points during the pension plan year would not change the level of funding required for that pension plan year or provide any certainty about what level of funding will be needed for the next pension plan year. Therefore, quarterly updates on the funded status of a plan would not provide information that would be useful in determining the amount of funds that will be needed to meet annual funding requirements. However, the Department is prepared to brief your staff on this issue at any time.

The Department does not anticipate impacts to the EM contractor workforce during fiscal year 2010 due to contractor funding of DB pension plans.

ENERGY INNOVATION HUBS

Question. Mr. Secretary, this budget provides $280 million to establish eight energy hubs, a personal priority of yours. These eight centers of excellence will attack energy related problems in a collaborative manner.

Why did the budget recommend establishing a hub for extreme materials research within the Office of Nuclear Energy and at the same time cancel the refurbishment of the Los Alamos Neutron Science Center, which supports a similar mission and also has computing capabilities?

Answer. The Energy Innovation Hub for Extreme Materials will be competitively chosen. Its mission will be to support cross-disciplinary research and development focused on the barriers to transforming energy technologies into commercially deployable materials, devices and systems. Since the location and specific work scope of the Energy Innovation Hub for Extreme Materials will be decided through a competitive procurement process, it must be independent of the refurbishment of the Los Alamos Neutron Science Center.

While there is certainly good science that could be done with a refurbished LANSCE, DOE believes that other investments in other facilities will yield a greater and more immediate benefit.

The eight Energy Innovation Hubs will advance highly promising areas of energy science and technology from their early research concept stage to the point where the risk level is low enough for industry to deploy them into the marketplace. The work of the Hubs will encompass the full span from basic research to engineering development to commercialization and hand-off to industry.

Question. Did the Department give any thought to establishing a hub to focus on environmental cleanup? What about a hub to defeat the cyber security threat?

Answer. The Department deliberated at length on the optimum number and topics for the Energy Innovation Hubs. The goal for the Hubs is to make significant progress in overcoming current barriers to the United States' becoming a global leader in new energy technologies. The focus of the Hubs is on development and commercialization of clean, economic, sustainable energy technologies.

Neither the Environmental Management program nor Cyber Security efforts in the Department fall within this "energy technologies" focus of the Hubs. And, in fact, each of these efforts is already well defined and supported. That said, the concept of establishing a Hub for either Environmental Management or Cyber Security could be considered in the future if such an idea seemed advisable.

WEATHERIZATION

Question. The weatherization assistance program has over $5 billion available from the ARRA, Continuing Resolution, and fiscal year 2009. I am told that the Department will be spending that money over the next 3 years.

How can you justify another $220 million request when you cannot spend it this fiscal year?

Answer. To achieve the increases in the numbers of homes weatherized, State and local agencies are in the process of hiring and training thousands of workers. In addition to increased hiring, State and local agencies will be making a substantial capital investment in procuring vehicles and equipment to outfit these new weatherization crews. However, the "ramp-up" in the number of weatherized homes per month enabled by Recovery Act funds will not be fully realized until the hiring, training, and acquisition process is completed. DOE expects that the weatherization network should be close to its target rate of 22,000 homes weatherized per month by the end of the year. As a result, DOE expects that weatherization activities enabled by the Recovery Act should continue into 2011.

Additional funds in fiscal year 2010 are required to maintain the pace of hiring, training and expansion enabled by the Recovery Act in order to build the capacity needed to realize the President's goal of weatherizing 1 million homes annually. Without this continued investment, new hires could be lost at the end of 3 years and local agencies could be saddled with excess vehicles, equipment, and costs associated with lay-offs of their work forces.

CYBER SECURITY

Question. Mr. Secretary, the largest increase in the budget of the Office of Electricity Delivery and Reliability is for cyber security. No doubt, this is in response to the press reports that foreign hackers can gain access to our electrical grid.

However, NNSA cyber security staff has briefed the subcommittee regarding a large and sustained increase in cyber attacks against Department systems this year. Unfortunately, the budget for NNSA cyber security fails to provide any increase to combat these cyber attacks on our national security infrastructure.

How do you rationalize an increase in the Office of Electricity, but no increase for the NNSA?

Answer. NNSA's cyber security budget was not increased because NNSA has sufficient resources to address the threats.

Question. Do you believe you have the threats to the NNSA classified and national security information contained?

Answer. The threats to the national security information and classified system within the NNSA computing environment are constantly changing and represent risks to our operations. However, with the technology enhancement (i.e. EnCase Enterprise) and process improvements (NNSA Policy (NAP)) NNSA has invested in over the past 2 years, I believe that we have minimized the threats to the classified environment and national security information and are operating at an acceptable level of risk. The Department and NNSA senior leadership will continue to monitor the threats to our classified information technology assets along with the accompanying risks in order to make necessary changes and provide an appropriate level of protection.

URANIUM TAXES

Question. Mr. Secretary, your budget proposes a $200 million/year tax on nuclear power utilities to be applied to the Uranium Enrichment Decommission and Decontamination Fund. This account currently enjoys a surplus of $4.7 billion and can sustain the ongoing cleanup for 7 years at current spending rates. Since these funds are not needed immediately and haven't been reauthorized by Congress I have to assume this is nothing more than a gimmick used to offset deficit spending or meet budget shortfalls.

Mr. Secretary, the GAO did a study last year and found that the Department had a very valuable amount of unrecovered uranium sitting in storage at the very sites you want to cleanup. The value of these depleted uranium tails easily exceed the revenue raised by the tax and cleanup an existing liability on the Department's books.

Will you consider the sale of the depleted uranium tails stored in Kentucky and Ohio as an alternative to raising taxes on utilities who use nuclear power and have already paid $1.5 billion in taxes already?

Answer. The Department continues to monitor the uranium market as it manages various inventories of uranium declared excess to the Nation's national security needs. Any proceeds from any sale of the Department's uranium inventory will be deposited in the U.S. Treasury as required by the Miscellaneous Receipts Act (31 U.S.C. § 3302); therefore, the proceeds cannot be applied toward cleanup of the gaseous diffusion plants.

CLEAN UP FUNDING

Question. Mr. Secretary, your budget tells two distinctly different stories regarding the stimulus funds. When it comes to environmental cleanup, you justify a reduction in the fiscal year 2010 budget request due available stimulus funds. [sic] However, when it comes to renewable energy projects you have provided additional increases despite that program enjoying $17 billion in additional Stimulus funding.

Can you please explain why this budget tells two completely different stories regarding the impact of stimulus funding on the budget?

Answer. The total funding requests provided in the fiscal year 2010 budget, in conjunction with Recovery Act funds, were carefully considered so as to make the biggest impact, given the status of the science and technology in each area.

The fiscal year 2010 budget was formulated in light of the significant funding provided in the Recovery Act. Recovery funding enabled the Department to accelerate a number of important commitments in the areas of renewable energy, environmental management, grid modernization, carbon capture and sequestration (CCS) and basic science research.

In building the fiscal year 2010 request, the administration adopted a thoughtful approach that considered not only whether a program had received Recovery Act funding, but also how those funds fit within our overall policy goals and priorities.

In some cases, the Recovery Act investments are so significant that they amount to several years of base funding. This allowed the Department to make prudent use of our resources to address other high priorities. In other instances, like Environmental Management, the Recovery funding is being used on projects that meet the objectives of economic stimulus, but which may not ordinarily compete well against projects aimed at addressing the clean up of higher-risk sites. Our fiscal year 2010 request for EM continues to focus on high risk sites.

QUESTIONS SUBMITTED BY SENATOR THAD COCHRAN

Question. Mr. Secretary, in your budget for the Strategic Petroleum Reserve, you propose roughly $50 million for the purchase of a new cavern to replace an existing storage cavern that was said to pose "an extreme environmental risk." My staff was informed that the Department purchased this cavern instead of taking advantage of salt domes already owned by the Department of Energy for Strategic Petroleum Reserve Expansion. Why?

Answer. The Department has not purchased any new caverns for the Strategic Petroleum Reserve. The cavern that has been identified for decommissioning, Cavern 20, is located at the Bayou Choctaw site and is in very close proximity to the edge of the salt dome. After use during Hurricane Katrina in 2005, Cavern 20 experienced preferential leaching towards the edge of the salt dome. Continued use of the cavern presents a risk of major environmental danger. The fiscal year 2010 request proposes funding for the purchase of an existing commercial storage cavern that is located adjacent to the Bayou Choctaw site to replace the unsound cavern. It is vital for the Department to maintain its current inventory level and drawdown response capabilities at the Bayou Choctaw site because this site is the only Strategic Petroleum Reserve site that directly serves the refiners on the lower Mississippi River and refiners in the Midwest served by the Capline Distribution System. Crude oil releases from this site were instrumental in keeping the Capline system refiners supplied after the hurricanes in 2005 and 2008.

Question. Your acting assistant Secretary for the Strategic Petroleum Reserve testified before the Environment and Public Works Committee recently about legislation sponsored by Senator Bingaman to create new storage for refined oil in the

Strategic Petroleum Reserve. As you know, salt domes in my State of Mississippi were identified by the last administration as a possible location for the expansion of the Strategic Petroleum Reserve. Although funds were not included for expansion activities in your budget, your staff expressed interest in the idea of new refined oil storage capacity. The Department of Energy owns salt caverns in Mississippi, which could hold both refined and crude oil. Will Mississippi be considered as the site for this plan, likely to be included in the Energy package Senator Bingaman is planning to move through the Senate this summer?

Answer. Although the Department has identified land for site development for 1 billion barrel expansion of the SPR at Richton, Mississippi, the Department has not acquired the land. Rather, DOE has completed prerequisite activities to include salt dome seismic analyses, site environmental surveys, and title work in preparation for the site acquisition. DOE has recently concluded studies for preparation of a Supplemental Environmental Impact Statement (SEIS) to find more environmentally suitable locations for the water intake system, the offshore brine disposal and the marine terminal in Pascagoula.

The Department is currently evaluating the situation involving the land acquisition and the additional $31.5 million appropriated in fiscal year 2009 for new site expansion activities, beyond land acquisition.

Question. Funding for fiscal year 2009 for the Strategic Petroleum Reserve included $35 million for the Richton, Mississippi site, contingent on a report issued by the Department within 45 days. My staff has contacted yours about the report. What is the status of this report?

Answer. Pursuant to the fiscal year 2009 Omnibus Appropriations Act (Public Law 111–8), a draft report assessing the effects of expansion of the Reserve on the domestic petroleum market is undergoing internal review. We will publish and submit the final report to Congress as soon as the review process has been completed.

QUESTIONS SUBMITTED BY SENATOR GEORGE V. VOINOVICH

Question. Over the last several years, the Department of Energy has greatly increased its oversight of the contractors responsible for managing and operating (M&O) the national laboratories under M&O contracts through prescriptive directives and requirements administered by overlapping and often redundant oversight organizations. Currently, the DOE's oversight organizations employ thousands of Federal staff with annual budgets of $500 million. Given that no other agency expends this amount of resources to oversee contractors who were supposedly engaged to apply best private-sector practices to operations, do you think the level of regulatory oversight at the Department's national laboratories has gotten out of control and hampers their ability to provide solutions to our Nation's pressing energy needs?

Answer. As Secretary of Energy, I am firmly committed to improving efficiency at our Laboratories. There is much that the Department can and will do to enhance our laboratories' ability to deliver on the DOE missions. Significant improvement can be made with a concerted effort. Further, we will also review the use of independent certifications (ISO 9000 and 14000, DOE Voluntary Protection Programs, etc.) as part of our expectations and our strategy for overseeing our contractors' business and operations systems and processes. Finally, we will consider the circumstances under which external regulation may be appropriate.

Question. The Government-owned, contractor-operated (GOCO) model for laboratory management was originally designed to bring the best possible scientific and management talent to the laboratories and to allow them to apply the best private-sector business practices, thus maximizing their flexibility and efficiency. However, as laboratory resources are increasingly being redirected from performing R&D to demonstrating compliance with extremely prescriptive DOE work requirements, the argument for rethinking DOE's GOCO model is strengthened. What is your vision of the GOCO management relationship between DOE and its contractors?

Answer. In my view, the proper relationship between the Department and its M&O contractors is one that focuses on clear definitions of performance expectations and outcomes and on holding our contractors accountable for achieving those outcomes.

The success of the relationship between DOE and its M&O contractors depends on a clear and consistently-applied understanding of the roles and responsibilities of each party. The Department should specify what goals and requirements the contractors must meet and then hold the contractors accountable for meeting these goals. The contractors should determine how to meet those contract goals and requirements and apply best business practices.

Question. How do you explain the current role of the local DOE site/field offices, and do you see this role changing over time?

Answer. The current role of the local DOE site/field offices is to provide contractual support and oversight of the Department's national laboratories and other facilities that are Government-owned and contractor operated (GOCO). As you know, I am committed to improving the overall management of the Department, to make it more efficient, responsive, and economic in meeting our missions and better serving the American people. Toward this end I have already begun the process of reviewing the Department's current management structures, processes, and procedures, and would expect this to continue for some time.

Question. In terms of execution of civilian R&D programs, how would you categorize the differences between the DOE Office of Science, National Science Foundation, and National Institute of Health?

Answer. DOE is a mission agency with responsibilities in energy, environment, national security, and discovery science. The DOE Office of Science supports scientific research within this mission at over 300 universities and the national laboratories. The Office of Science also plans, builds, and operates scientific user facilities for the scientific community. These facilities are a significant pillar of the U.S. scientific enterprise. The DOE Office of Science is the steward for 10 national laboratories, and it is the primary Federal supporter of basic research in service of the energy mission. The programs of the Office of Science are carefully planned and focused in areas of importance to advance the DOE mission.

NIH is the primary Federal agency for conducting and supporting medical research. It is part of the Department of Health and Human Services, the principal agency for protecting the health of all Americans and providing essential human services. NIH employs intramural researchers and also funds extramural researchers. The DOE Office of Science generally does not directly fund medical science and does not have Federal intramural researchers.

The National Science Foundation (NSF) aims "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense. . . ." The NSF supports all fields of fundamental science and engineering, except for medical sciences, and also supports the social sciences.

NSF is proposal-driven and funds science independent of the field or application of that science; in contrast the DOE Office of Science is mission-driven, supporting science serving the DOE missions of energy, environment, and national security.

A cornerstone of Office of Science funding is a rigorous peer review process, much like NIH and NSF.

Question. Although our national laboratory system includes what may be the largest and most impressive collection of scientific facilities and talent in the world, the American tax payer does not receive the maximum benefit from these investments because current DOE policy prevents labs from partnering with private companies on research proposals from Federal agencies. Would you support a change in current DOE policy to authorize national laboratories, on a non-exclusive basis, to partner with private industry on research request for proposals (RFPs)?

Answer. Senator Voinovich, you raise an interesting issue as to how to best utilize our national laboratories, which for the most part are Government-owned contractor-operated and are Federally Funded Research and Development Centers (FFRDCs). Our national laboratories partner extensively with private industry through, for example, the Work for Others program, Cooperative Research and Development Agreements, licensing arrangements and user agreements. With respect to responding to RFPs, however, the Federal Acquisition Regulation, which applies on a Government-wide basis, requires that agencies sponsoring FFRDCs include in the sponsoring agreement a prohibition against the FFRDC's competing with any non-FFRDC concern in response to a Federal agency RFP. DOE's implementation of that requirement is set out in DOE Order 481.1C stating that FFRDCs may not respond to RFPs that involve head-to-head competition. This preclusion is based partly on the sanctioned special access to Government information that FFRDCs have that could put commercial competitors at a disadvantage. The Order goes on to permit, under certain circumstances, FFRDCs to respond to Broad Agency Announcements, financial assistance solicitations, Program Research and Development Announcements, and similar solicitations which do not result in head-to-head competition. I believe that the DOE should look carefully at improving opportunities for private industry to partner with DOE national laboratories.

Question. Has the Department of Energy determined which energy sources will provide the most electricity with the lowest carbon-emissions and smallest lifecycle footprint on the environment as a whole, including raw materials and land usage? Has the DOE done a comprehensive study to determine the effectiveness of U.S. energy subsidies, and if not, has the DOE determined which energy subsidies, if any,

would result in the best return on investment for tax payers while meeting the President's GHG emissions targets?

Answer. No, but the Department of Energy is continuing to develop and evaluate a portfolio of technologies with the lowest life-cycle costs and carbon footprint to meet the Nation's growing electricity demand.

Numerous Federal programs operate today to help accelerate the deployment of greenhouse gas intensity-reducing technologies by providing various financial incentives, including direct subsidies. While these financial incentives are expected to reduce GHG emissions, they also incur costs to the U.S. Government. DOE is evaluating the economic and environmental effectiveness of energy subsidies. The Energy Information Administration did recently complete a study, "Federal Financial Interventions and Subsidies in Energy Markets," but this study does not calculate the return on investment in terms of GHG emissions reduction. The executive summary is available at: http://www.eia.doe.gov/oiaf/servicerpt/subsidy2/pdf/execsum.pdf.

Question. What is the Department of Energy doing to help expand the number of nuclear power plants we have in the United States and reduce our dependence on foreign energy sources? Will additional loan guarantee authority be given to allow industry to move forward?

Answer. The Nuclear Power 2010 (NP2010) program was established to address the issues limiting deployment of new nuclear plants in the United States. The primary goal of the NP2010 program was to demonstrate the streamlined Federal regulatory processes governing the siting and construction of new, standardized nuclear plant designs. The NP2010 program has successfully met its objectives, and we await industry decisions to build the first new nuclear plants in more than 30 years. The NP2010 program is requesting $20.0 million in fiscal year 2010 to complete support of the NuStart New Nuclear Plant Licensing Demonstration project. This industry cost-shared project includes interactions with the Nuclear Regulatory Commission (NRC) to obtain the NuStart Construction and Operating License for the AP1000 advanced light water reactor design including meetings with the Advisory Committee on Reactor Safety, issuance of Final Safety Evaluation Reports and Final Environmental Impact Statements and initiation of hearings by the Advisory Committee on Reactor Safeguards.

Taken together, the NP2010 program and loan guarantees for nuclear power projects are designed to address the technical, regulatory and financial risks associated with deploying new nuclear plants. DOE is not seeking additional loan guarantee authority or additional appropriations for credit subsidy costs in fiscal year 2010.

Question. What initiatives and programs is the Department of Energy planning to ensure we have the technical workforce required to maintain, build and service our Nation's nuclear power plants in a safe and efficient manner?

Answer. The Office of Nuclear Energy will provide $2.9 million in undergraduate scholarships and graduate fellowships to high-quality undergraduate and graduate students going into nuclear science and engineering disciplines at universities and colleges located in the United States. The Office of Nuclear Energy also has recommended that 29 universities and colleges receive a total of $6 million in grants for new equipment and instrumentation for their existing research reactors, for other specialized nuclear science and engineering facilities, and to establish classrooms and laboratories. These grants are designed to enhance the universities' and colleges' nuclear energy research and development capabilities to educate the next generation of nuclear engineers and scientists.

Working with industry, the Office of Nuclear Energy will soon begin activities to more thoroughly analyze total workforce needs to support continued safe and reliable operation of the existing nuclear fleet and construction and operation of the next generation of nuclear power plants in the United States. Finally, the Department will continue to look for partnership opportunities with industry groups, academia, and other Government agencies to ensure an adequate, highly skilled workforce is available to ensure continued safe and reliable nuclear power operations.

SUBCOMMITTEE RECESS

Senator DORGAN. Thank you for being with us this morning. Our subcommittee will want to work closely with you and with your staff in the Department of Energy as we work through the markup of an appropriations bill going forward in the coming fiscal year. This hearing is recessed.

[Whereupon, at 11:54 a.m., Tuesday, May 19, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 2010

TUESDAY, JUNE 2, 2009

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:18 a.m., in room SD–124, Dirksen Senate Office Building, Hon. Byron L. Dorgan (chairman) presiding.

Present: Senator Dorgan, Feinstein, and Bennett.

DEPARTMENT OF ENERGY

NATIONAL NUCLEAR SECURITY ADMINISTRATION

STATEMENT OF HON. THOMAS P. D'AGOSTINO, UNDER SECRETARY FOR NUCLEAR SECURITY AND ADMINISTRATOR

ACCOMPANIED BY:

BRIGADIER GENERAL GARRETT HARENCAK, PRINCIPAL ASSISTANT DEPUTY ADMINISTRATOR FOR MILITARY APPLICATION, OFFICE OF DEFENSE PROGRAMS

KEN BAKER, PRINCIPAL ASSISTANT DEPUTY ADMINISTRATOR FOR DEFENSE NUCLEAR NONPROLIFERATION

OPENING STATEMENT OF SENATOR BYRON L. DORGAN

Senator DORGAN. We will call the hearing to order. This is the Senate Appropriations Committee Subcommittee on Energy and Water Development.

We appreciate all of you being here. I apologize for being just a bit tardy this morning.

We are here to take testimony from Administrator Thomas D'Agostino of the Department of Energy's National Nuclear Security Administration on the fiscal year 2010 budget request.

Joining Mr. D'Agostino at the witness table to help field questions will be the two NNSA Principal Assistant Deputy Administrators, Brigadier General Harencak—I hope I have that correct, Brigadier General. Welcome to you. And Mr. Ken Baker, Mr. Baker, welcome.

This year's budget request of $9.9 billion for the NNSA is up $815 million, or almost 9 percent, when compared to the fiscal year 2009 appropriation. But almost $600 million of that increase is simply a transfer of the MOX fabrication facility construction project to NNSA. Excluding that shift, NNSA's budget is flat in fiscal year 2010, with only a tangible increase in the Naval Reactors Program.

As we have seen in other parts of the Department of Energy's budget request, there are very few positive changes in the NNSA budget from fiscal year 2009 to fiscal year 2010. In fact, there are numerous program areas where the exact same number is requested in fiscal year 2010 as was requested the previous fiscal year. Whether it is a weapons program budget or the fossil energy program budget, it is hard to imagine that so little is truly in need of change over the coming year, and I assume we will talk about that this morning.

I understand that the Nuclear Posture Review is currently underway and that this will have an impact on our stockpile and perhaps on the complex that supports the stockpile. However, I am not sure this is justification enough for decisions to halt some of the projects or for the lack of actual positive changes in the budget request. The fact is NNSA is going to have a very active future. That is clear when looking at the wide number of areas that we will discuss today.

Through renegotiation of the START Treaty and completion of the NPR, we are likely to be on a path to fewer nuclear weapons in our stockpile. This will require more dismantlement. That requires more funding. However, we will continue to have nuclear weapons for the near future, and that, too, requires funding for stewardship and life extension programs.

Also, the President announced in April his goal of securing vulnerable nuclear material around the world within 4 years. That is a very critical issue that we must address aggressively, and that, too, will cost some funding.

Further, whether because of new treaties or actions by North Korea and others, proliferation and nuclear detection are becoming much more prominent as issues and are also critical issues and, once again, require funding. All of these areas require resources. A flat fiscal year 2010 budget means additional pressures, it seems to me, in the out-years, and that is something we will discuss this morning.

I want to make one final point. The weapons program is primarily focused on issues directly related to the stockpile. But the fact is, a significant infrastructure funded by the weapons programs also benefits other programs, such as science and non-proliferation, both of which are important. The NNSA's computing program has led this Nation to the forefront of computing worldwide.

I know that the announcement about that, that we have computing capabilities now that are not exceeded anywhere in the world, was made with great pride and that was done at our weapons lab. The program not only serves stockpile modeling, but also climate change, non-proliferation modeling, and more.

NNSA computer modeling has contributed significantly to the Intergovernmental Panel on Climate Change. Their non-proliferation program uses computer modeling to better analyze seismic events related to detonation. This fact, I think, seems forgotten in the budget request.

The NNSA's investment in supercomputing has dropped 7 percent since 2006. By comparison, the Department of Energy's Office of Science computing budget has increased 79 percent over the same period.

So we are in a political transition year. The stockpile still requires attention. Proliferation is an ever-increasing concern, and base capabilities still need to be maintained or increased. A flat budget is going to make that a very significant struggle.

I understand, Mr. D'Agostino that you are not ultimately responsible for this budget request, but you have, nonetheless, come here to answer questions about it. We have seen the Office of Management and Budget passbacks that make it clear that OMB has significant control in this area. Although this may not reflect all of your views on all accounts, we will rely on you to explain it today.

I have always appreciated your candor and appreciated working with you, Mr. D'Agostino. I am going to call on Senator Bennett for an opening comment. I do want to mention that we apparently will have either one or two votes, starting at 11 o'clock today, and we will recess for that purpose.

Senator Bennett.

OPENING STATEMENT OF SENATOR ROBERT F. BENNETT

Senator BENNETT. Thank you very much, Mr. Chairman.

And most of the items that I intended to cover in my opening statement you have already covered. The budget is flat, and it is flat in a number of areas that, as you have outlined, need to be looked at and improved. It is reduced—this budget has reduced science funding and non-proliferation R&D by several hundred million dollars. And future funding will continue to erode the capability over time. I find that a very disturbing trend.

I have always been willing to fund R&D, particularly the kind of pure science that we see in the national labs, and your description of the computing power and other things is an accurate portrayal of the challenge that we face.

I support sustaining the test ban moratorium. But if we are going to do that, we have to have a significant investment in our scientific capabilities and the people and the infrastructure that go along to ensure those capabilities so that we can accurately predict the status of our nuclear deterrent. And I don't believe the budget provides adequate funding for the scientific capabilities and falls short in the areas you have described.

So I look forward to working with you, Mr. Chairman, to try to repair this damage that has come. And Mr. D'Agostino, I have been sitting at the same table where you are in previous administrations, and I know the frustrations of making a submission to OMB and being told no less how much you are going to defend when you get to Congress. And we don't ask you to violate your instructions from OMB, but any degree of candor you can share with us would be very much appreciated.

Senator DORGAN. Senator Bennett, thank you.

We will try to get the sound system fixed here, get it turned up just a bit so the audience can hear.

Senator Feinstein, would you like to make a brief opening comment, and then we will go to Mr. D'Agostino?

STATEMENT OF SENATOR DIANNE FEINSTEIN

Senator FEINSTEIN. Well, just one quick thing. I had the great pleasure—I guess it was Friday——

Mr. D'AGOSTINO. Yes, ma'am.

Senator FEINSTEIN [continuing]. Friday, of being at Lawrence Livermore to see the beginning—and Mr. D'Agostino was one of the speakers. And to see the beginning of the National Ignition Facility, which you have been helpful with, both of you, over the years. It has been somewhat controversial, but the conversation was so exciting, and that is that it may be possible—"may" is the operative word—to combine fission and fusion to really be able to present a brand-new source of energy, which not only would be cost effective, but would be carbon free.

And it would appear, and I hope—the reason I wanted to come was to ask you more about this—that this might well be the new mission of that lab. And I will just end it. I have watched the labs and really come to wonder if the right thing was done in the privatization of these labs because we have lost a lot of valued employees. And the labs are only good if they have a mission, and the mission has changed. So I want to talk about that a little bit later on.

But thank you very much.

Senator DORGAN. Senator Feinstein, thank you very much.

Mr. D'Agostino, I just alluded to the announcement about the Roadrunner, I believe, at Los Alamos, the most powerful computer in the world. We have great accomplishment at our weapons labs, not dealing just exclusively with weapons. One of my concerns is given the changing of the nature of the Bell Labs over the years and so on, our national laboratories are critically important to this country continuing its edge in science and research and technology.

I am very worried about losing the strength of our scientists at these laboratories. We need to continue funding, and there are many things that can be done in the weapons labs and the science labs that can advance this country's interests. I worry very much about diminished funding and losing some of our best and most capable people.

STATEMENT OF HON. THOMAS P. D'AGOSTINO

So let me call on you for an opening statement, and then we will begin with questions.

Mr. D'AGOSTINO. Well, thanks very much, Chairman Dorgan, and Senator Bennett, Senator Feinstein.

As you know, I am Tom D'Agostino. I am the Administrator here at the National Nuclear Security Administration. I am accompanied by Ken Baker, who runs our non-proliferation program, and Brigadier General Gary Harencak, who runs our defense programs activities and is responsible for maintaining the base capability on nuclear security for our program. And we do appreciate the opportunity to be here today and to talk to you about our programs and to answer your questions.

Also, in the audience, we have some members of our summer student intern program. These are the folks, ultimately, I wanted them to come and see the process at work, the way Government works. These are the folks that will be leading these types of security programs out in the future. We are really proud, fortunate to have them here, and it is exciting to have young folks in the organization to see what we do and to capture, get a little bit of that vision that we saw at the National Ignition Facility, get excited

about the programs, and take us forward. So I'm excited about that.

As you know, we believe NNSA is critical to the security of the United States and our allies. The President's fiscal year 2010 budget request is $9.9 billion. It is an increase, as you said, sir, of about 8.9 percent over the fiscal year 2009 appropriated level. The budget request provides funding to enable the NNSA to leverage science, to promote U.S. national security objectives.

NNSA programs are on the front of the lines of the following national security endeavors: maintaining a safe, secure, and reliable stockpile and capabilities to support that stockpile; accelerating and expanding our efforts here and around the world to reduce the global threat posed by nuclear terrorism, nuclear proliferation, and unsecured materials; providing the United States Navy with safe, militarily effective propulsion systems; and supporting U.S. leadership in science and technology.

As the President has initiated bold steps to put an end to cold war thinking to lead to a new international effort to enhance global security, the 2010 budget request for NNSA is the first step. There are other steps, but this is the first step towards implementation of this new strategy.

For our non-proliferation programs, funding increases are requested to expand and respond quickly to opportunities to reduce global nuclear threats. Increases are also requested, as you said, sir, in the Naval Reactors Program to begin development of reactor and propulsion systems for the next-generation submarine, among other activities.

For the programs in our weapons activities appropriation, the budget strategy is to maintain capabilities and activities at the current level until the strategic direction is established in the upcoming Nuclear Posture Review.

In President Obama's speech in Prague, he indicated his commitment to maintaining a safe, secure, and reliable stockpile while pursuing a vision of a world free from the threat of nuclear weapons. The NNSA maintains the unique knowledge and technical capabilities that are critical to achieving both of these objectives.

Our non-proliferation programs are focused on securing the key ingredient of nuclear weapons, in effect, the weapons usable materials and the related equipment and technologies. Supporting NNSA efforts include the Elimination of Weapons-Grade Plutonium Production Program, which has been working with Russia to shut down Russia's plutonium production reactors, and the Fissile Material Disposition Program, which will provide a disposition path of 34 metric tons each of U.S. and Russian excess plutonium.

The NNSA is a recognized leader on these and other non-proliferation initiatives to prevent proliferators or terrorists from acquiring a nuclear weapon. This includes our activities to secure and reduce weapons-grade nuclear materials at sites worldwide, but also our efforts to detect and intercept WMD-related materials in transit.

In addition, we will also work in 2010 to support the President's call to strengthen the Non-Proliferation Treaty, support the International Atomic Energy Agency, and strengthen international safeguards inspections. To implement this comprehensive strategy, we

will need to expand our cooperation with Russia, pursue new partnerships, and work to secure vulnerable nuclear material around the world in 4 years.

Our Global Threat Reduction Initiative and the International Material Protection and Cooperation Programs will have a major role in this 4-year plan.

NNSA is actively participating in a national debate over our Nation's nuclear security and non-proliferation strategic framework. This debate is not just about the size of the stockpile and warheads. It includes the inescapable obligation to transform our current cold war era nuclear weapons complex into a 21st century nuclear security enterprise that retains the capabilities necessary to meet emerging national security threats.

In a future with fewer warheads, no nuclear tests, tighter controls on materials worldwide, and effective counteraction of nuclear terrorist threats, the science and technology capabilities will play an increased role, not decreased role, in addressing these challenges. We must ensure that our evolving strategic posture and our stockpile, non-proliferation programs, arms control, and counterterrorism programs are melded together in an integrated, comprehensive strategy to protect our country and our allies.

The Department of Defense, as you know, has initiated this Nuclear Posture Review, which is scheduled to culminate in a report later this year. I want to assure the subcommittee that we are active members of that review and we are making sure that science and technology that underpins essential policy decisions is part of that review.

As you know, we have made tremendous progress in reducing the size of our stockpile in recent years. The stockpile will now be less than one quarter of what it was at the end of the cold war, the smallest stockpile in 50 years. These reductions send the right message to the rest of the world that the United States is committed to Article 6 of the Non-Proliferation Treaty, which will help create a positive momentum heading into the 2010 NPT review conference.

Each year since the Stockpile Stewardship Program was developed, we have been able to certify the safety, security, and reliability of the stockpile with no need to conduct underground tests. Since 1993, we have acquired a suite of capabilities determined necessary to maintain an effective stockpile.

Most recently, as Senator Feinstein has mentioned, the National Ignition Facility has come online, and ultimately, we are going to be—our goal in the next few years is to actually apply these tools to address not only the national security problems but maintain the science that we need and to look for other opportunities to address our energy issues out into the future.

But the challenge for stockpile stewardship in the future ultimately is to really make full use of this suite of tools. Following completion of the Nuclear Posture Review, we will prepare a 5-year plan, which recapitalizes our infrastructure, retains our scientific, technical, and engineering expertise, and makes full use of our experiments and supercomputing facilities.

As the subcommittee knows, numerous external reviews have identified the fragile state of our technical expertise and capabili-

ties, and it ultimately resides in our people. It is clear that our people are our most important resource. We need to retain those skills and capabilities and develop the next generation of scientists, engineers, and technicians needed to perform work in non-proliferation, in counterterrorism, and in forensics.

Of course, we need to maintain—these are the same people that are responsible for maintaining our stockpile.

Mr. Chairman and members of the subcommittee, that concludes my statement, and I will be pleased and look forward to taking your questions.

[The statement follows:]

PREPARED STATEMENT OF HON. THOMAS P. D'AGOSTINO

Thank you for the opportunity to discuss our vision for the National Nuclear Security Administration. My remarks today focus on the fiscal year 2010 President's budget request. The budget requested today will allow the National Nuclear Security Administration to continue to achieve the mission expected of it by the President, the Congress, and the American people.

In a recent trip to Prague, President Obama outlined his vision of a world without nuclear weapons. To this end, the United States will take concrete steps towards achieving such a world by reducing the role of nuclear weapons in our national security strategy and urging others to do the same. Until that ultimate goal is achieved, however, the United States will maintain nuclear forces sufficient to deter any adversary, and guarantee that defense to our allies. To support this vision, the National Nuclear Security Administration (NNSA) will continue to:

—Ensure a safe, secure, reliable and effective nuclear weapons stockpile, even if that stockpile is reduced under a START Follow-On Treaty.

—Reduce the threat to the United States posed by the proliferation of nuclear weapons, and related nuclear materials and expertise.

—Provide safe, reliable, militarily-effective propulsion systems to the U.S. Navy.

By pursuing its mission to achieve these ends, and by providing our unique knowledge and support to our partners in national security, the NNSA will continue to meet its current statutory responsibilities while supporting the long-term goal of a world free from the threat of nuclear weapons.

While the President's long-term objectives are clear, the role of the nuclear weapons stockpile and America's deterrence policy are being reviewed as part of the ongoing Nuclear Posture Review. Efforts are underway in the NPR to establish the size and composition of the future stockpile and the means for managing geopolitical or technical risk—NNSA is fully engaged in these activities. Its role is to provide the technical and scientific input to inform policy decisions, and then to enable the implementation of the decisions.

NNSA is advancing our knowledge of the physical; chemical, and materials processes that govern nuclear weapons operation and is applying that knowledge in extending the life of existing weapons systems. We have recently completed construction of the National Ignition Facility at the Lawrence Livermore National Laboratory (LLNL) to explore weapons-critical regimes of high temperature and pressure and will begin our first ignition campaign to improve our scientific understanding of phenomena that could previously only be explored theoretically or in full-scale nuclear testing. The NNSA is also conducting warhead Life Extension Programs to ensure that our country remains secure without the production of new fissile materials, and without conducting underground nuclear tests. On the basis of the most recent assessment by the Directors of our national nuclear weapon laboratories, today's nuclear stockpile remains safe, reliable, and secure. At the same time, we are concerned about increasing challenges in maintaining, for the long term, the safety and reliability of the aging, finely-tuned warheads that were produced in the 1970's and 1980's and are well past their original planned service life.

I am committed to continuing to transform our national laboratories and production plants into a smaller and more cost-effective Nuclear Security Enterprise. However, I am mindful that our design laboratories and production facilities are national assets that support a large number of defense, security, and intelligence activities. As the role of nuclear weapons in our Nation's defense evolves and the threats to national security continue to grow, the focus of this enterprise must also change and place its tremendous intellectual capacity and unique facilities in the service of addressing other challenges related to national defense. We are taking steps to move

in this direction, including functioning as a national science, technology, and systems engineering resource to other agencies with national security responsibilities.

The NNSA fiscal year 2010 congressional budget request will allow continued progress in obtaining the essential goals I have outlined. It will allow us to:

—Continue transforming into a Nuclear Security Enterprise by:
  —Involving the next generation of our Nation's scientific, engineering, and technical professionals in the broad sweep of technical challenges;
  —Operating the National Ignition Facility, allowing the use of innovative technology to provide answers to important scientific questions;
  —Shrinking the cold war complex by preparing buildings for decommissioning and decontamination, and replacing these antiquated facilities with modern and efficient facilities; as well as disposing of excess real property through demolition, transfer and the preparation of process-contaminated facilities for transfer to the Department of Energy (DOE) Office of Environmental Management (EM) for final disposition;
  —Initiating a Site Stewardship program to ensure that NNSA increases the use of renewable and efficient energy, and reduces the number of locations with security Category I/II Special Nuclear Materials, including the removal of these materials from the Lawrence Livermore National Laboratory by the end of 2012; and
  —Reducing security, safety and environmental risks by consolidating and disposing of excess nuclear materials wherever possible.
—Support the development and implementation of arms control, nonproliferation, and civil nuclear energy agreements by:
  —Providing technical and policy support to U.S. delegations negotiating arms control, nonproliferation, and peaceful nuclear energy cooperation agreements;
  —Developing the technologies and approaches needed to verify compliance with negotiated treaties and agreements; and
  —Providing training and technical support to the International Atomic Energy Agency.
—Support U.S. commitments through construction of the Mixed Oxide Fuel Fabrication Facility and Waste Solidification Building to provide a disposition pathway for excess U.S. fissile materials, and to help Russia implement its reciprocal commitments.
—Continue our successful programs to secure and/or eliminate vulnerable nuclear and radioactive material in other countries, enhance nuclear/radiological material detection capabilities at borders, airports, and seaports, and strengthen nonproliferation practices and standards worldwide.
—Embark on the design and development of an advanced reactor core and propulsion plant supporting the timely replacement of the OHIO Class Submarine.
—Overhaul of the land-based prototype reactor plant used to test advanced materials and techniques in a realistic operating environment prior to their inclusion in propulsion plants.
—Honor the commitments made to those who won the cold war by ensuring their pensions are secure in times of financial uncertainty.

Today, I'd like to testify on our efforts in Weapons Activities, Defense Nuclear Nonproliferation, and Naval Reactors.

WEAPONS ACTIVITIES OVERVIEW

The NNSA will ensure that our nuclear stockpile remains safe, secure and effective to deter any adversary, and provide a defense umbrella to our allies. At the same time, NNSA will continue to pursue a modern more flexible Nuclear Security Enterprise that is significantly smaller than the Cold War complex, but is able to address a variety of stockpile scenarios.

As I have committed to you previously, NNSA continues to retire and dismantle nuclear weapons. By 2012 our stockpile will be one-quarter of the size it was at the end of the cold war. As the United States prepares for the 2010 Review Conference of the Nuclear Non-Proliferation Treaty, this fact alone should emphasize the commitment we make to both our Nation and to the world.

As a full partner in the Nuclear Posture Review, the NNSA is working with the Departments of Defense and State to establish the plans, policies, and programs that will govern the future posture of our nuclear forces and supporting infrastructure. The recently issued report of the Bipartisan Congressional Commission on the Strategic Posture of the United States will help guide these efforts. These reviews will assist the U.S. Congress and the administration in clearly defining our future direction.

As the NPR proceeds, NNSA continues to carry out a number of activities in support of the stockpile including warhead surveillance, assessment, replacement of limited life components in existing weapon systems, and dismantlements. We are also continuing the W76 Life Extension Program and a feasibility study with the Air Force for a Life Extension Program for some models of the B61 gravity bomb. There are also activities planned in the six campaigns and the studies needed for Annual Assessment of the stockpile.

The NNSA will also continue transforming the Nuclear Security Enterprise into a modern, smaller, and more flexible complex. The NNSA inherited a system of laboratories and production plants designed to produce large volumes of weapons and designs needed to counter Soviet aggression. We have initiated a major effort to right-size the enterprise to meet the new, anticipated requirements. The NNSA is consolidating Category I and II Special Nuclear Materials; removing these items from selected sites and providing safe, secure storage for this material.

In fiscal year 2010, we will be reducing our infrastructure footprint through the deactivation and decommissioning of buildings such as Buildings 9206 and 9201 at Y–12. We will also plan for the future infrastructure through continuing design of the Uranium Processing Facility at Y–12, the Pit Disassembly and Conversion Facility at the Savannah River Site, and the Chemistry and Metallurgy Research Replacement Facility at the Los Alamos National Laboratory, and begin the process of planning for an orderly migration of missions to a smaller and more flexible facility at the Kansas City Plant.

The NNSA has received assistance in our ability to alter our infrastructure in the form of an increase in the General Plant Projects limit. We are pleased with the decision to increase the ceiling on General Plant Projects from $5 million to $10 million. We believe that this aids in the maintenance and repair of the enduring enterprise. Following on this increase, the NNSA is submitting a legislative proposal to similarly increase the design cost limit for these construction projects from $600,000 to $1,500,000. We seek your support for the proposal.

But while NNSA is reducing its footprint, and while the total number of warheads in the stockpile continues to decline, there are capabilities that must be preserved. Not only are these capabilities needed to support the maintenance of any stockpile, but they are also needed to support the Nuclear Security Enterprise's initiatives in nonproliferation, nuclear counterterrorism, nuclear forensics, and nuclear incident response. It's important to note that the enterprise does not scale linearly with the size of the stockpile; and the need for baseline functional capabilities is not eliminated with cessation of research into new designs and the cessation of any production of new weapons systems. These capabilities are needed whether we have a few warheads, or a few thousand.

Although NNSA did not receive any funds directly from the American Recovery and Reinvestment Act, we are assisting other parts of the Department in implementing their plans for stimulus work at the NNSA sites and stand ready to do more.

As NNSA prepares for the future, we must focus on the retention of our scientific, technical, and engineering personnel throughout the complex. Without experienced scientific, technical, and engineering personnel, NNSA cannot succeed at its mission. Throughout the cold war we were able to attract the Nation's brightest scientists, engineers, and technical professionals by providing challenges, facilities, and opportunities that were unique, were on the forefront of science, and that allowed them to put their talents to work to serve their country. Today we are transitioning our emphasis to a broader nuclear security mission, but our need to attract the best scientists, engineers and technical professionals remains. By developing new scientific tools such as the National Ignition Facility, new challenges such as the detection of smuggled uranium and plutonium, and the modernization of facilities such as the Chemistry and Metallurgy Research Replacement Facility, we can continue to attract bright technical minds who wish to serve their country. We believe that our response to the spectrum of threats to national security is not only the right steps for us to take to make the Nation more secure, but also will provide a significant set of technical areas that will motivate young scientists to join us in our mission.

The challenges are huge and meeting them calls upon both basic science and applied technology. Approximately 70 years ago, Hans Bethe advanced the state of science with his critical work explaining the physical processes governing the life cycles of stars. Today the National Ignition Facility (NIF) stands on the threshold of producing stellar conditions in the laboratory. By moving the enterprise forward in advancing the boundaries of science, we will continue to attract our Nation's brightest minds to our scientific endeavors. In fiscal year 2009, two significant technological milestones were achieved; crossing the one mega joule threshold with NIF

and the one petaflop threshold in the Advanced Simulation and Computing Campaign.

DEFENSE NUCLEAR NONPROLIFERATION OVERVIEW

As part of the President's comprehensive strategy to address the international nuclear threat, the President also called for strengthening the Nuclear Nonproliferation Treaty, accelerating our efforts to secure vulnerable nuclear materials around the world, and increasing our work to detect, deter, and eliminate illicit trafficking of nuclear materials. The NNSA Nuclear Security Enterprise is actively engaged in these and other nonproliferation missions and will provide the technical expertise to ensure they are successful.

The movement of funding for the Mixed Oxide Fuel Fabrication Facility and the Waste Solidification Building into the Fissile Materials Disposition budget is the largest change in the fiscal year 2010 Congressional Budget for Defense Nuclear Nonproliferation program. These critical facilities provide the nonproliferation programs a disposition pathway for at least 34 metric tons of surplus U.S. weapons grade plutonium. I'm pleased to report that the United States and Russia have agreed on a revised Russian program to dispose of Russia's 34 metric tons of their surplus weapons plutonium. These changes will be codified in a Protocol that will amend the 2000 U.S.-Russian Plutonium Management and Disposition Agreement, and we expect to sign the Protocol this summer. In light of President Obama's recent statements in Prague and London, I am particularly pleased that the U.S. and Russian plutonium disposition programs are coming together at this time. As a result of these efforts, the United States and Russia will ultimately dispose of enough weapons plutonium for at least 17,000 nuclear weapons.

I should note also that with this budget request, we are submitting our last request for funding to eliminate the production of weapons-grade plutonium production in Russia by December 2010, through the shutdown of Russia's last weapons-grade plutonium production reactor in Zheleznogorsk.

The NNSA directly supports President Obama's goal to accelerate efforts to secure all vulnerable nuclear material from around the world within 4 years, including the expansion and acceleration of our existing efforts. The NNSA is the key agency supporting the administration's goal of minimizing the use of highly-enriched uranium (HEU) in the civil nuclear sector through our program to shutdown entirely or convert HEU fueled research reactors to the use of low-enriched uranium (LEU) fuel. In fiscal year 2010, we will direct significant funding to the Global Threat Reduction Initiative (GTRI) mission to eliminate and protect vulnerable nuclear and radiological materials located at civilian sites worldwide.

In fiscal year 2010, we will also improve the physical security of nuclear material, as well as facilitate the development and implementation of material control and accountability procedures, and train personnel, to protect a total of 73 nuclear sites throughout Russia and the former Soviet republics. The NNSA will fulfill the administration's goal of securing nuclear weapons-usable material by ensuring that the material possessed by the Russian Navy, the Russian Ministry of Defense, Rosatom and Russian civilian sites is secured.

But improving the security of weapons-usable material at its source is only the start. We must also develop a Second Line of Defense in order to anticipate the possibility that nuclear weapons-usable material could be smuggled out and transported across international borders. And in fact, we know that illicit trafficking in nuclear and other radioactive materials continues, especially in Eastern Europe, the Caucasus, and Central Asia. In response to the President's charge to do more to combat nuclear trafficking, we will install additional radiation detection equipment at 42 foreign sites across Europe, Asia, and North America, and provide detection equipment in 15 additional ports where cargo is loaded for shipment to the United States.

This work started several years ago. Technology advances and foreign personnel turnover have occurred since NNSA first began securing sites and borders in foreign countries. Funds will be used not only to perform new installations and train personnel at new sites, but will also be used to upgrade older equipment at existing sites, and to provide refresher training to foreign security professionals.

Additionally, in fiscal year 2010, NNSA will expand and accelerate its Next Generation Safeguards Initiative (NGSI), adding $15 million to revitalize the U.S. technical and human capital base necessary to strengthen the international safeguards system and the International Atomic Energy Agency, in line with President Obama's charge in Prague. The NGSI complements related NNSA priorities to reduce proliferation risks associated with growing international interest in the use of nuclear power; to expand export control training and outreach; to develop and im-

plement reliable fuel services as an alternative to the further spread of enrichment and reprocessing capabilities; and—consistent with the President's call for progress towards a world without nuclear weapons—to provide technical support for negotiations of the START follow-on agreement, Comprehensive Nuclear Test-Ban Treaty, and a verifiable Fissile Material Cutoff Treaty.

NAVAL REACTORS OVERVIEW

The NNSA also contributes to national security through the Naval Reactors Program. This program ensures that the nuclear propulsion plants aboard our Navy's warships remain safe and reliable for their complete service lives. Over 40 percent of the Navy's major combatants are nuclear-powered. All of the Nation's aircraft carriers, attack submarines, guided missile submarines, and ballistic missile submarines enjoy the significant operational advantage afforded by nuclear power, including speed, endurance, and enhanced combat payload. Through NNSAs efforts, nuclear-powered warships are on station where American interests are threatened, and ready to conduct sustained combat operations.

For over 60 years, the Naval Reactors program has had complete responsibility for all aspects of Naval Nuclear Propulsion. The Naval Nuclear Propulsion Program currently supports 82 active nuclear-powered warships and 103 operating reactors. This represents 8 propulsion plant designs, in seven classes of ships, as well as a training platform.

Naval Reactors funding supports safe and reliable operation of the Nation's Nuclear Fleet. This includes providing rigorous oversight, analysis of plant performance and conditions, as well as addressing emergent operational issues and technology obsolescence for 71 submarines, 11 aircraft carriers and four research and development and training platforms. This funding also supports new plant design projects (i.e., reactor plant for the GERALD R. FORD-class aircraft carrier and alternative lower-cost core for VIRGINIA-class submarines), as well as ensuring proper storage of naval spent nuclear fuel, prudent recapitalization of aging facilities, and remediation of environmental liabilities.

The OHIO-class SSBNs, which are the most survivable leg of the U.S. Strategic Forces, are approaching the end of their service lives. The Navy recently completed studies for a follow-on replacement to the OHIO-class and is funding the commencement of design work in fiscal year 2010. NNSA funding in fiscal year 2010 supports reactor core and propulsion plant design and development efforts to support this replacement.

Since 1978, the land-based prototype reactor plant (S8G) has provided an essential capability to test required changes or improvements to components and systems prior to installation in operational ships. The prototype has also provided required, high-quality training for new sailors preparing to operate the Nation's nuclear-powered vessels. This land-based prototype will run out of fuel and require a refueling overhaul starting in 2018. This overhaul and the resultant opportunity to test advanced materials and manufacturing techniques in a caustic operating environment will significantly mitigate risk in the OHIO Replacement reactor plant design. To support the refueling overhaul schedule, concept studies and systems design and development efforts will begin in 2010.

The Expended Core Facility, located at the Naval Reactors Facility on the Idaho National Laboratory, is the central location for Naval spent nuclear fuel receipt, inspection, dissection, packaging for dry storage, and temporary storage, as well as detailed examination of spent cores and irradiation specimens. Continuous, efficient operation of this facility is vital to ensure the United States can support fuel handling operations in our shipyards conducting construction, repair, and restoration of nuclear ships. The existing facility and related infrastructure is over 50 years old and requires recapitalization. The mission need for recapitalizing this capability has been approved and conceptual design efforts begin in 2010.

The Program continues to explore and develop potentially advanced technologies that could deliver a compellingly better energy source for nuclear ships. For example, using a supercritical carbon dioxide energy conversion as a replacement for the traditional steam cycle is envisioned to be significantly smaller for the same power output, simpler, more automated, and more affordable. Leveraging existing university, industry, and Nuclear Security Enterprise scientific and engineering work in this technology, conceptual development and small-scale testing is underway to support eventual megawatt-scale testing and prototyping.

Acquisition of a new surface combatant (i.e., cruiser) in support of new ballistic missile defense and anti-air warfare mission requirements are currently under evaluation by the Navy. Based on these mission requirements, this new ship will potentially require higher energy capacity and output than is currently available from

traditional fossil fueled power plants. Further, the National Defense Authorization Act (NDAA) for 2008 authorizes the Navy to construct all future major combatant vessels with integrated nuclear power systems unless this requirement is waived by the Secretary of Defense. The Navy is currently analyzing alternative shipboard systems that will determine final power plant requirements. Should the Navy decide to pursue a nuclear-powered cruiser in its current long-range shipbuilding plan, DOE-cognizant reactor core and propulsion plant design and development will be required.

The value of nuclear power for naval propulsion is well recognized and the demand for its inherent capabilities remains strong. By taking every opportunity for economies in our work and business practices, we have made a concerted effort to meet the Navy's demand for new propulsion plant designs while assuring the safe and reliable operation and maintenance of the existing fleet. However, the need to deal with a formidable collection of new challenges coupled with the Program's aging infrastructure and environmental legacies requires a fortified level of resource commitment.

NNSA Future-Years Nuclear Security Program

The NNSA fiscal year 2010 congressional budget request is $9.9 billion, a total of $815.4 million above the fiscal year 2009 appropriations. Of the 8.9 percent increase, about 7 percent is attributable to the re-location of funding for the Mixed Oxide Fuel Fabrication facility project back to NNSA in the Defense nuclear Nonproliferation appropriation.

The NNSA budget justification contains information for 5 years as required by section 3253 of Public Law 106–065, entitled Future-Years Nuclear Security Program (FYNSP). The fiscal year 2010–2014 FYNSP projects $50.4 billion for NNSA programs through 2014. The principal increases from the fiscal year 2009–2013 FYNSP are: the transfer of funding for the Mixed Oxide (MOX) Fuel Fabrication Facility project back from the Office of Nuclear Energy to NNSA; the multi-year initiative to further enhance global nuclear nonproliferation efforts; and some of the increase required to support the development of the new generation submarine reactor replacement. For Weapons Activities, the outyear projections reflect only a continuation of current capabilities, pending upcoming strategic nuclear policy decisions. The fiscal year 2011–2015 budget process is expected to present a fully integrated Future Years Nuclear Security Program budget aligned with the new strategic direction and program requirements for all of the NNSA programs.

NNSA Budget Summary by Appropriation and Program

Weapons Activities Appropriation

The Weapons Activities appropriation funds five NNSA program organizations. (There are six subheadings below. Combining "Site Stewardship" and "Infrastructure and Environment" would reduce the count to five and mirror the NNSA structure.) The fiscal year 2010 congressional budget request is $6.4 billion for Weapons Activities, essentially level with fiscal year 2009 appropriation.

Defense Programs

The fiscal year 2010 congressional budget request for Defense Programs is $5.0 billion, a decrease of 1.1 percent from the fiscal year 2009 appropriation that is primarily attributable to transitioning the Pit Disassembly and Conversion Facility and the Waste Solidification Building to other programs. The outyear projections for Defense Programs reflect a continuation of current programs and services pending further national nuclear policy direction expected during 2009.

Within the President's Budget request level, the NNSA will continue all programs to meet the immediate needs of the stockpile, stockpile surveillance, annual assessment, and Life Extension Programs (LEP). As directed by the Nuclear Weapons Council, a feasibility and cost study was initiated in September, 2008, to investigate the replacement of aging non-nuclear components in the family of B61 bombs, and to study the potential incorporation of modern safety and security features in these systems. Included in the program are efforts to complete the B61 Phase 6.2/6.2A refurbishment study evaluating end-of-life components, aging, reliability, and surety improvement options. The decrease within the Directed Stockpile Work (DSW) request is attributable mainly to the relocation of the funding for the Pit Disassembly and Conversion Facility (PDCF) to Readiness in Technical Base and Facilities (RTBF) and the Waste Solidification Building (WSB) to Defense Nuclear Nonproliferation.

The Campaign activities for Science, Engineering, Inertial Confinement Fusion and Advanced Simulation and Computing maintain the fiscal year 2009 funding level throughout the FYNSP. The Science Campaign consolidates a new subprogram

called "Academic Alliances" that encompasses the funding for university grants, alliances, and the joint program with Science. The Engineering campaign increases emphasis on Enhanced Surveillance and Systems Engineering Technology in the fiscal year 2010 congressional budget request. The Inertial Confinement Fusion Ignition and High Yield Campaign is requested at $437 million, and in fiscal year 2010, the emphasis shifts away from NIF assembly and toward Facility Operations as the program continues to refine requirements and prepare for the first ignition experiments in 2010. The fiscal year 2010 congressional budget request for the Advanced Simulation and Computing Campaign provides growth in physics and engineering models as support shifts away from hardware procurements and system software.

The Readiness Campaign funds the development and deployment of modern manufacturing capabilities to produce materials and components in compliance with weapon design and performance requirements and in accordance with Life Extension Program and refurbishment schedules. In fiscal year 2010, the Readiness Campaign will focus on supporting the Tritium Readiness activities and high priority projects to deliver new or enhanced processes, technologies, and capabilities to meet the current needs of the stockpile. The reduction in Tritium Readiness was planned, and is due to the cyclical nature of production.

The Readiness in Technical Base and Facilities request is $62 million above the fiscal year 2009 appropriations. The increase is attributable to additional funding provided to mitigate increased pension costs at the M&O contractor sites. Within the request for operating expenses, an increase is included for the Kansas City Plant supporting the work for the move to a new, smaller facility. Funding for construction projects is requested at $203 million to sustain ongoing construction and design efforts. The location of funding for the PDCF project has been changed from DSW to RTBF. One new construction project is requested: the Nuclear Facilities Risk Reduction Project at Y–12 will provide maintenance to sustain uranium related capabilities at Building 9212.

The Secure Transportation Asset program is requested at $234.9 million, an increase of 9.6 percent over the fiscal year 2009 appropriation. The STA program plans to acquire a total of three transport category aircraft. One 737-type aircraft will be purchased each year—starting in fiscal year 2010, fiscal year 2011, and fiscal year 2012 to replace the aging aircraft. In addition to the aircraft purchases, the remaining increase will be used for training and equipment.

Nuclear Counterterrorism Incident Response (NCTIR)/Emergency Operations

The NCTIR program responds to and mitigates nuclear and radiological incidents worldwide as the U.S. Government's primary capability for radiological and nuclear emergency response. The fiscal year 2010 congressional budget request for these activities is $221.9 million, an increase of 3 percent over fiscal year 2009 appropriations. The increase reflects funding growth in three specific areas of the program—International Emergency Management and Cooperation, Emergency Response, and Render Safe Stabilization Operations. These initiatives support increased efforts to address serious emergency management programs in priority countries, while continuing and completing ongoing programs with the International Atomic Energy Agency (IAEA) and other international partners and countries; scientific breakthroughs for Render Safe Stabilization Operations and the Technical Integration programs and continued implementation of National Technical Nuclear Forensics for pre- and post-detonation phases and the Stabilization aspect of nuclear emergencies through development of first generation stabilization equipment including training and maintenance programs to selected teams nationwide in support of better emergency response capability.

Infrastructure and Environment

This organization is responsible for the Facilities and Infrastructure Recapitalization Program, (FIRP) and the new Site Stewardship Program which encompasses Environmental Projects and Operations (EPO) that provides for Long-Term Stewardship (LTS) at NNSA sites after remediation is completed by the DOE Office of Environmental Management, Nuclear Materials Integration, Stewardship Planning which contains a renewable energy efficiency project; and may ultimately include deactivation and demolition activities.

The fiscal year 2010 congressional budget request for FIRP is $154.9 million, an increase of 5 percent above fiscal year 2009. This provides funding for recapitalization, infrastructure planning and construction. The increase supports continued progress in restoring the condition of mission critical facilities and infrastructure across the Nuclear Security Enterprise to an acceptable condition. The program's original goals established in fiscal year 2003 include: elimination of $1.2 billion of deferred maintenance, achieving a Facility Condition Index (FCI) of 5 percent, and

elimination of 3 million gsf of excess facilities. The original $1.2 billion deferred maintenance buydown goal is based on the requirement to meet the FIRP commitment of 5 percent FCI for all facilities. The program's deferred maintenance goal was adjusted in fiscal year 2007 to eliminate $900 million of deferred maintenance by fiscal year 2013 as a result of transformation decisions that reduced facility deferred maintenance requirements. The principle assumption governing FIRP is that the program will be funded only through fiscal year 2013.

The fiscal year 2010 congressional budget request for Facilities and Infrastructure Recapitalization is $154.9 million, an increase of 5 percent above fiscal year 2009. This provides funding for recapitalization, infrastructure planning and construction. The increase supports continued progress in restoring the condition of mission essential facilities and infrastructure across the Nuclear Security Enterprise to an acceptable condition.

The fiscal year 2010 congressional budget request for the new GPRA Unit, Site Stewardship, is $90.4 million. The goal of the Site Stewardship Program is to ensure environmental compliance and energy and operational efficiency throughout the Nuclear Security Enterprise, while modernizing, streamlining, consolidating, and sustaining the stewardship and vitality of the sites as they transition within NNSA's plans for transformation. The Site Stewardship program will institute and maintain a robust operational framework at the NNSA Government-owned, contractor-operated sites that encompass responsibility for achieving the NNSA mission. This new GPRA Unit will encompass activities currently under Environmental Projects and Operations (EPO) and will include new subprogram elements Nuclear Materials Integration (NMI) and Stewardship Planning. In the I&E organization only EPO was funded (as a separate GPRA unit) in fiscal year 2008 and fiscal year 2009 and is reflected as such for those 2 years since this is a non-comparable budget submission. The Environmental Programs and Operations increases 7 percent over the fiscal year 2009 appropriation to address ongoing and new regulatory-driven Long Term Stewardship activities at NNSA sites where Environmental Management activities have been completed. Nuclear Materials Integration provides focused attention on the consolidation and disposition of specific NNSA special nuclear materials. Current activities include the de-inventory of security Category I and II Special Nuclear Material (SNM) from LLNL and also the consolidation and disposal of inactive actinides at other sites. Funds for these material consolidation and disposal activities are being transferred from Defense Programs to Infrastructure and Environment in fiscal year 2010.

The majority of the requested fiscal year 2010 funding increase of $28 million is in Stewardship Planning for an operating expense-funded project, the Pantex Renewable Energy Project (PREP) at the Pantex Plant, that will create a more flexible, more reliable, and environmentally friendly source of renewable energy that supports DOE/NNSA operating goals and missions. The PREP will generate surplus electrical energy, reduce greenhouse gas emissions at local power plants, enhance energy security, and create jobs. This modular, operating expense-funded project will play a key role in satisfying NNSA's renewable energy objectives consistent with DOE Order 430.2B, Departmental Energy, Renewable Energy and Transportation Management.

Defense Nuclear Security

The fiscal year 2010 congressional budget request for Defense Nuclear Security is $749.0 million to support the base program and on sustaining the NNSA sites 2003 Design Basis Threat baseline operations, and begin initial steps to implement the Department's new Graded Security Protection (GSP) policy. During fiscal year 2010, the program will focus on eliminating or mitigating identified vulnerabilities across the Nuclear Security Enterprise. Funding for one new construction start is requested for the Security Improvements Project (SIP). The SIP will install a new security system to manage and integrate personnel security and access control systems at the Y–12 National Security Complex.

Starting in fiscal year 2009, there is no longer an "offset" in this account or the Departmental Administration Appropriation for the security charges associated with reimbursable work. In the fiscal year 2010 congressional budget request, mission-driven activities will continue to be fully funded with direct appropriations, but security required for Work for Others will be covered as part of full cost recovery for these projects. Institutional security activities will continue to be funded by indirect or general and administrative costs at each site.

Cyber Security

The Cyber Security program will sustain the NNSA infrastructure and upgrade elements that will counter cyber threats from external and internal attacks using the latest available technologies.

The fiscal year 2010 congressional budget request for Cyber Security is $122.5 million, an increase of 1 percent over the fiscal year 2009 appropriations. The Cyber Security program is in the process of a major 5-year effort focused on revitalization, certification, accreditation and training across the NNSA enterprise. Revitalization enables NNSA to respond to its highest priorities and to address current and future risks; certification and accreditation assure proper documentation of risks and justification of associated operations for systems at all sites; and, education and awareness provides training for Federal and contractor personnel to meet expanding skill requirements of NNSA cyber security and information environments.

Defense Nuclear Nonproliferation (DNN) Appropriation

The DNN program goal is to detect, prevent, and reverse the proliferation of Weapons of Mass Destruction (WMD). Our programs address the threat that hostile nations or terrorist groups may acquire weapons of mass destruction or weapons-usable material, dual-use production or technology, or WMD capabilities, by securing or eliminating vulnerable stockpiles of weapon-usable materials, technology, and expertise in Russia and other countries of concern.

The fiscal year 2010 congressional budget request for the DNN appropriation totals $2.1 billion. The most significant fiscal year 2010 and out-year increases relate to the request to move the funding for the MOX Fuel Fabrication Facility project and the WSB back to NNSA's DNN Programs. The NNSA has funded the MOX Fuel Fabrication Facility project and the WSB baseline increases within the requested funding for fiscal year 2010 and the outyears. Other increases include International Materials Protection and Cooperation (INMP&C) and Nonproliferation and International Security (NIS), both of which increase 38 percent over the fiscal year 2009 levels.

Funding in the INMP&C fiscal year 2010 congressional budget request of $552.3 million is an increase of 38 percent over the fiscal year 2009 appropriated level. This increase is the first step in fulfilling President Obama's promise during his Prague address that the United States will expand its partnership with Russia and pursue new partnerships to eliminate or secure vulnerable nuclear materials. This budget provides for sustainability support to Russian warhead and material sites with completed INMP&C upgrades, INMP&C upgrades to areas/buildings agreed to after the Bratislava Summit and the projects to assist the Russian Federation and other partner countries in establishing the necessary infrastructure to sustain effective MPC&A operations. In addition, the budget provides for the Second Line of Defense program and the installation of radiation detection equipment at 43 foreign sites and 15 Megaports.

The fiscal year 2010 congressional budget request for the NIS program is $207.2 million, an increase of 38 percent over the fiscal year 2009 appropriations. This supports the Next Generation Safeguards Initiative (NGSI), which aims to strengthen the international safeguards system and revitalize the U.S. technical base and the human capital that supports it; as well as nuclear disablement, dismantlement, and verification activities in North Korea; policy and technical support for U.S. efforts to address proliferation by Iran, North Korea and proliferation networks; and the implementation of nuclear arms reduction and associated agreements.

The fiscal year 2010 congressional budget request for the Global Threat Reduction Initiative (GTRI) is $353.5 million, a 10.5 percent reduction from the fiscal year 2009 appropriations. Most of this decrease results from the completion of the Kazakhstan Spent Fuel work in CY 2010. The fiscal year 2010 congressional budget request of $24.5 million for the Elimination of Weapons Grade Plutonium Production (EWGPP) is the final increment of U.S. funding needed for this program. The significant reduction in the budget reflects close-out and completion of the construction activities for the Zheleznogorsk Project.

The Nonproliferation and Verification R&D program is requested at $297.3 million, a decrease from the fiscal year 2009 level. This decrease reflects both an unrequested congressional addition in 2009 and NNSA's funding in 2009 of the total required in 2009 and 2010 for the Physical Sciences building in Washington State. The $297.3 million is sufficient to support long-term R&D leading to detection systems for strengthening U.S. capabilities to respond to current and projected threats to national and homeland security posed by the proliferation of nuclear weapons and diversion of special nuclear material. Almost a third of this funding is for production of operational nuclear detonation detection sensors to support the Nation's oper-

ational nuclear detonation detection and reporting infrastructure through joint programs with DOD.

The President's Request for Fissile Materials Disposition is $701.9 million, reflecting the transfer of funding for the MOX Fuel Fabrication Facility project and WSB projects back to this program. In addition to these U.S. plutonium disposition activities, the program supports three other principal elements: efforts to dispose of U.S. HEU declared surplus to defense needs primarily by down-blending it into low enriched uranium; technical analyses and support to negotiations among the United States, Russia, and the International Atomic Energy Agency on monitoring and inspection regimes required by a 2000 U.S.-Russia plutonium disposition agreement; and limited support for the early disposition of Russia's plutonium in that country's BN–600 reactor including U.S. technical support to oversee work in Russia for early disposition of Russian weapon-grade plutonium in fast reactors. The United States and Russia began negotiations on amendments to the 2000 Agreement in 2008, and expect to complete the negotiations this summer.

Naval Reactors Appropriation

The NNSA's Naval Reactors program continues to provide the U.S. Navy with safe, military effective nuclear propulsion plants and ensure their continued safe and reliable operation. The fiscal year 2010 congressional budget request for Naval Reactors is $1,003.1 million, an increase of 21 percent over the fiscal year 2009 appropriations.

This increase provides additional funding to initiate the new mission work for the design and delivery of a new reactor core and propulsion plant to support the next-generation submarine design, and refueling of the S8G Prototype, one of two land-based reactor plant prototypes that serve as a testing platform for nuclear technology. Significant outyear funding is required for both of these activities. A portion of the fiscal year 2010 increase will also support Naval Reactors pension responsibilities.

Office of the Administrator Appropriation

This appropriation provides corporate direction, Federal personnel, and resources necessary to plan, manage, and oversee the operation of the NNSA. It provides funding for all Federal NNSA staff in Headquarters and field locations except those supporting Naval Reactors and the Secure Transportation Asset agents and transportation staff.

The fiscal year 2010 congressional budget request of $420.8 million reflects a decrease of $18.4 million that is attributable to Congressionally-directed projects funded in fiscal year 2009. Staffing increases in fiscal year 2010 by 28 full time equivalents (FTEs) from 1,942 to 1,970 reflecting functional transfers and growth to accommodate mission program increases. The projected staffing level for fiscal year 2010 is 1,970 and is maintained throughout the outyear period. The Historically Black Colleges/Hispanic Serving Institutions programs will continue through fiscal year 2010 on grants made by appropriations provided in fiscal year 2009 and through program funding. The fiscal year 2010 congressional budget request includes $4.1 million for the Massie Chairs and related activities only.

Senator DORGAN. Mr. D'Agostino, thank you very much. I appreciate very much your appearance and the appearance of Brigadier General Harencak and Ken Baker as well.

Let me just make a quick comment first. I noted that an OMB document earlier this year called for a study of moving the NNSA out of the Department of Energy and into the Department of Defense. It reminds me that bad ideas have unlimited shelf life here in the Nation's capital, and also that bad ideas are bipartisan.

This is a bad idea that has been debated and long ago discarded. So if you get a chance to talk to OMB, would you suggest that they close the cover of that book and move on?

Mr. D'AGOSTINO. Yes, sir. I will be glad to.

FUTURE OF THE LOS ALAMOS NEUTRON SCIENCE CENTER

Senator DORGAN. Thank you very much.

I understand that the budget proposal that you are here to discuss proposes eliminating funding for the refurbishing of what is

called the Los Alamos Neutron Science Center, or the LANSCE facility. We have an OMB passback calling for canceling this project. So perhaps it was not your decision, but there is no funding for LANSCE refurbishment in the 2010 request, though it was provided $19 million in last year's request.

I am told that there is no other classified facility capable of the scientific research being conducted at LANSCE. I am told to replace the LANSCE facility or to make another facility, such as SNS, at Oak Ridge classified would be more expensive than refurbishment.

So, a couple of questions, do you believe that LANSCE is important to the Stockpile Stewardship Program?

Mr. D'AGOSTINO. Yes, I do, sir.

Senator DORGAN. Considering the age of the stockpile and nonproliferation treaties, do you think keeping the LANSCE facility operating in the future will be important for the country?

Mr. D'AGOSTINO. Absolutely. I think it will be useful to help us in neutron cross-section measurement, which is what it is doing right now, and to exploring what we call proton radiography, which is a different way of examining what is actually going on inside very dense materials, and to do the nuclear science and material science work. We think the country needs that in the future.

Senator DORGAN. Without refurbishment, how long is the LANSCE expected to be an effective facility?

Mr. D'AGOSTINO. That is a tough question to answer. Most of what we are doing right now is accepting risk if we don't refurbish the facility, risk that the accelerator pieces are going to get to a point where they will age out. Already some of the components are hard to replace.

So what we are in right now is a maintenance mode, keeping it working. In fact, that is our plan out into the future—keeping the facility working out into the future. My goal is to revisit this discussion or revisit the question because I do think, in the long run, what we do with LANSCE ultimately has to be integrated with the bigger picture on science and the technology that we need to maintain out in the future.

And so, my goal would be to essentially make sure it keeps operating, one; keep doing the experiments that we need, two; and three, figure out, make sure that we have an integrated picture post NPR, once the NPR is done, that figures out how science and technology fits in.

SCIENCE FUNDING TRENDS

Senator DORGAN. Well, at this point, we are not talking about the Reliable Replacement Weapon, or the RRW program, but we are talking about stockpile stewardship, which I understand is increasingly reliant on science. So the question is, given the heavy reliance on science for stockpile stewardship and reliability, how do we reconcile flat funding in the area of science?

Mr. D'AGOSTINO. What we did, as a result of a number of changes that have happened over the last 3 months, frankly, I have decided that it was much more important to make sure that we stem and stop the decrease in our science programs that was happening, as you noted in your remarks earlier. And so, what we did

is some reallocation, quite frankly, in the last few months, about $130 million worth to stop the decrease where science was going, and then—what I would call stop the bleeding, and then start getting in on the repair side.

So where are we right now, it is my plan, at least, this is the low point on science is stopping the decrease, and then we are going to need to be reinvesting out into the future, fiscal year 2011 budgets and the like.

You will notice, sir, and as you have said, the numbers are exactly the same. And you said, was that coincidence or what? It is not—what are the chances of having an exact same out-year number? And its chances are zero. And the reality is I have submitted to you or to Congress—the President has submitted to you essentially a program that says this is a 1-year look. The administration has just come in, established some very aggressive and some broad goals that it wants to implement in the nuclear security arena.

And because of that, some of these programs, the idea of securing materials worldwide in 4 years; as you mentioned, this Comprehensive Test Ban Treaty piece; fissile material cutoff piece; the new START Treaty; the dismantlements; those require a fair amount of detailed program planning that we are doing right now. And we didn't have time to reflect that appropriately in the out-year budget request. So you will see these strange-looking numbers, and that is why.

NUCLEAR NON-PROLIFERATION

Senator DORGAN. Given what has happened in the world in recent days, weeks, months, it seems to me that the issue of nuclear non-proliferation is unbelievably important. It is something people don't talk about in coffee shops. I understand that. It is not part of the contemporary debate on talk shows. But it is unbelievably important.

It appears that that account is flat-funded, and the President announced his goal to secure all nuclear material around the world by 2012. As I understand it, a team of officials was sent to Moscow some weeks ago to begin negotiations for replacing the START Treaty. Last week, North Korea, we think, set off their second nuclear weapon in 3 years.

With such increased emphasis on the need for nuclear test monitoring, verification research and those kinds of activities in the nuclear non-proliferation budget, how is it that the research and verification is reduced significantly? I mean does that square with anything that I just described or with anything that you believe?

Mr. D'AGOSTINO. I will explain how it squares. I do believe out into the future, you will be seeing a fairly different program from us. But let me start off with the following, if I could. You mentioned North Korea. And I would like, Mr. Baker, if you could, to talk to some of the details on the research and development program.

The intelligence analysts that this country has used over the last—well, certainly very aggressively over the last 10 days or so, but obviously, in the previous years, that analyze what is happening in the world, both nuclear smuggling, proliferation of not just materials, but components, missile technology, and the like.

Most of those experts ultimately come, as you are probably aware, from this program, and they start off at the base. They start off in the General's program, and they end up being supportive to the intelligence agencies and the like.

So we know what we know because of those folks. Ken Baker can talk about the research and development program and why the budget changes the way it does.

Mr. BAKER. I agree with you, Senator. It is a very dangerous world out there, probably more so than ever, even when we were back in the cold war, in my opinion.

The research and development program has been reduced. The reason why it has been reduced this year, we had an $85 million plus-up last year over the President's budget, and we have finished the work at the Pacific Northwest laboratory, which was something like $40 million. That program is down. It is critical to us. It will be critical in the CTBT. It will be critical in START.

It is a very important program, and again, I think you will see in the next years, as we work this 4-year plan, that budgets will increase in the future.

Senator DORGAN. Senator Bennett?

Senator BENNETT. Thank you, Mr. Chairman.

And I would like to follow up on the line of questioning you have already begun.

IMPACT OF FLAT-FUNDING ON WEAPONS AND NON-PROLIFERATION PROGRAMS

Mr. D'Agostino, you say funding is level, but, in fact, there are internal demands that make the amount of money that actually—to use an analogy that we have out in the West, the amount of water that actually gets to the end of the ditch is smaller than the overall numbers would indicate. I am talking about the pension shortfalls.

It is my understanding that you have to make up some of the pension shortfalls of your contractors. Is that correct?

Mr. D'AGOSTINO. That is correct, Senator.

Senator BENNETT. All right. The numbers I have say that the contributions paid to DOE contractors in their pension plans from 2008—2003 to 2008 was $330 million, and you expect to pay $1.5 billion per year over the next 5 years, with the peak contribution years estimated to come in 2012 and 2013 at just under $2 billion per year.

Now if you are going to deduct most of the savings out of the operating budget and delay facility closures and preventive maintenance and consolidation of special nuclear materials, obviously the top-line number is deceiving. So I think the trend is simply unsustainable. It will have a devastating impact on the weapons and non-proliferation program, and I want to know what the Department has considered, actions being taken to mitigate this problem over the next 5 years.

Mr. D'AGOSTINO. Yes, sir. You are absolutely right. With those kinds of numbers with no changes, that is an unsustainable path. It is an unsustainable program. But I will tell you what the Department has done at this point. And what the Department, I say the administration has done, quite frankly.

One is when we first started this year, we were faced with this immediate problem. So we looked in just fiscal year 2009 at areas where programs weren't spending, we didn't see the expenditure rate, things had gotten slow to start, and we figured out what could shift back a little bit. And we also made some adjustments to our overhead rates to get through fiscal year 2009. Otherwise, we would have been in the process of sending out literally tens of thousands of letters to all of our employees saying that their pension fund is underfunded.

So that took care of fiscal year 2009. And for fiscal year 2010, which is the current budget, we have received an increase. The total liability is on the order of close to $300 million that we were potentially expecting in 2010. So what we received is an increase of about $122 million in order to address specifically the pension shortfall in our fiscal year 2010 budget. That leaves, of course, $160 million of uncertainty.

The way the pension process works, and I apologize for giving the long answer, is every January we go off and take a look at where we are, kind of a snapshot look. And that sets the trend for the upcoming year. This past January, we thought next year would be worse, and that is why we have come up with $122 million.

We don't know what January is going to look like. So what we have taken is a big step in the right direction toward addressing our 2010 shortfall with the understanding that the financial situation will be different in January. It might be worse. It might be better. But we wanted to at least approach the solution with the backup plan to make some adjustments to our indirect rates. That kind of will spread the problem a little bit more broadly.

So it is a dynamic problem, we look at it on a monthly basis. And this is, unfortunately, we are in a situation where we are going to be looking at it on this regular basis out into the future. But in the end, it is going to require, I believe, increases to top lines if we continue to see the past performance.

Senator BENNETT. That is the point I wanted to make and want to have clear on the record, that, at some point, the top line has to go up, or everything else suffers from it. We are in a fool's paradise if we say, "Oh, we are keeping the funding level," when, effectively, we are not for these reasons.

Mr. D'AGOSTINO. Yes, sir.

RESEARCH INTEGRATION BETWEEN THE DEPARTMENT OF ENERGY AND NATIONAL NUCLEAR SECURITY ADMINISTRATION

Senator BENNETT. Now let us talk about the need for scientific leadership within NNSA. I think we need to consider a new position within NNSA to steward and cultivate scientific research.

Such an individual could help raise awareness of both weapon science and non-weapon science that goes on at the labs and work to integrate research among the DOE and NNSA labs. And the grand challenge of energy security and climate change science are of such complexity that this work, I think, should be shared with all the labs. I had reference made to that when I was out in the labs, when you were kind enough to give that tour.

So I am considering a modification to the NNSA Act to create a new position within NNSA that would report directly to you, and

it would—this position would lead the NNSA science program and work with the rest of the Department to integrate the national security capabilities with those in basic applied programs within DOE. Can you give me your reaction to that idea?

Mr. D'AGOSTINO. Yes, sir. Though not part of the NNSA Act, I think consistent—particularly after our trip that we took about a year and a half ago sir, we talked about the importance of science. Dr. Dave Crandall, who used to run the Research, Development, and Simulation Program in the weapons program, I brought him up to advise me. He doesn't have an official role, if you will, as you have described, from an authority standpoint. But in effect, he is doing some of that work as a chief scientist.

I think the idea of having a named position is a good idea. It is very consistent with our drive to not so much focus just on nuclear weapons science, but to focus on nuclear security science, which will address non-proliferation, counterterrorism, forensics, and then, more broadly, work with the rest of the Department, the Office of Science, to draw those links together and show how these computers and these people can address global problems.

So I am very favorably disposed to your suggestion, sir.

Senator BENNETT. All right. Well, I am glad you are using Dr. Crandall. But he has no budget authority and no mission responsibility.

Mr. D'AGOSTINO. Right.

Senator BENNETT. And so, I will be talking to you about how we might proceed on that.

Mr. D'AGOSTINO. Yes, sir.

Senator BENNETT. Thank you, Mr. Chairman.

Senator DORGAN. Senator Feinstein?

Senator FEINSTEIN. Thank you very much, Mr. Chairman. I trust this mike is not working.

Senator DORGAN. Turn it on and speak directly into it, if you would?

Senator FEINSTEIN. Hello? It is working.

NUCLEAR POSTURE REVIEW, WEAPONS TREATY NEGOTIATION, AND STOCKPILE REDUCTION

Mr. D'Agostino, it is my understanding, and the chairman touched on this, that you are involved in two efforts. One is the negotiation for a new nuclear weapons treaty with Russia, and the other is the Nuclear Posture Review that is due out the early part of 2010.

It has been reported that this new treaty could set a new ceiling of 1,500 operationally deployed nuclear warheads for each nation, down from 1,700 to 2,200 under the Moscow treaty. Is that, in effect, true?

Mr. D'AGOSTINO. There are a lot of numbers. The short answer is we haven't closed on the details. There are a lot of numbers being bantered around. The President has made it very clear that he wants a number lower than the 1,700 to 2,200 number.

Where we are right now in the Nuclear Posture Review, which is the kind of committee of people that will be briefing the National Security Council and, ultimately, the President, quite frankly, in the next relatively short period of time, we are in the discussion

phase of examining the policy. What is the policy that the Nation wants to carry forward into the future? And what size of stockpile is needed to maintain that policy strongly?

There is a 1,500 number floating around out there. There are some lower numbers. There are some higher numbers, and I would rather not try to make a commitment right now.

Senator FEINSTEIN. Yes, all right. Well, that is fine. I am for the lowest possible number, as you know.

Mr. D'AGOSTINO. Yes, ma'am.

Senator FEINSTEIN. I think the buildup of huge nuclear weapons, 90 percent of which are owned by Russia and the United States, really endangers the world and really opens us up to all kinds of problems. So you know my views on this subject well.

Mr. D'AGOSTINO. Yes, ma'am.

COSTS AND RESULTS OF NUCLEAR LABORATORY PRIVATIZATION

Senator FEINSTEIN. What is the total loss of employees at our nuclear labs since the privatization?

Mr. D'AGOSTINO. We have lost—as I have looked at the numbers going back in time for the last 3 or 4 years or so, the NNSA overall has changed, if you will, about 1,500—I will get to your answer. But overall, about 1,500 folks a year or so out of the 32,000, which we started off with, have been coming out.

Senator FEINSTEIN. Well, what is the total? I know it is over 2,000 at Los Alamos alone.

Mr. D'AGOSTINO. Yes, it is. The total is probably between 3,000 and 3,500, give or take. It depends if we are counting not full-time lab employees, but temporary lab employees. But, in essence, it is in the thousands. It is a fairly significant number. It is a number that was about 2,500 or so last year when we talked to you, talked to the subcommittee here last year.

It is a number that, for the most part, the lab directors have focused on driving these changes not with their scientists or engineers, though they have had to get into that some. But most of these reductions have happened as a result of administrative personnel being more efficient, quite frankly. And George Miller has got some good examples.

Senator FEINSTEIN. I am not talking necessarily about any one particular lab. I can tell you this. When I visited Los Alamos, the most significant thing I took away from it was the lack of people in that facility.

Mr. D'AGOSTINO. Right.

Senator FEINSTEIN. And I am concerned by it. And I remember the budget last year and the year before when you have these enormous fees to run these labs and those fees have been paid by cutting employees. And I think that is just a fact.

Now the question comes, what does this do to the mission? And I am very concerned about it because I think the mission is subtly changing, the mission of the labs. I think the privatization is toward pushing things into the private sector, and the purpose of these labs is really to do some of the most advanced work that keeps this Nation ahead of others. And I am very worried about it and not at all sure that it is the right thing to have done.

So let me ask you this question. Since the privatization, what would you name as the three big achievements produced by privatization?

Mr. D'AGOSTINO. What I would say the first achievement is on security. We have seen some huge improvements in security at both of the laboratories since privatization.

Senator FEINSTEIN. Okay, granted. And that is where the university was weak, and that has been picked up, and the security has improved. What else?

Mr. D'AGOSTINO. The other area is in management systems. Frankly, Los Alamos, for example, spread out over 43 square miles, was, in essence, a balkanized set of smaller laboratories, each operating slightly different procedures and procurement processes. It was very inefficient and caused problems.

So the new management has drawn the lab together much more tightly and has driven——

Senator FEINSTEIN. Okay, and a third?

Mr. D'AGOSTINO. And has driven——

Senator FEINSTEIN. My time is going to—it is up, so a third?

Mr. D'AGOSTINO. Oh, okay. The third area I would see is focus. We have seen the kind of responsiveness to driving change and just as you described it very clearly, mission change. I would look at mission change to shifting from a cold war mission focus to a future world mission focus. I have seen movement on both of those laboratories and, in fact, working together, the two laboratories working together on establishing a new mission that I haven't seen in previous years.

And I have worked in this program for a number of years and, quite frankly, am very impressed with the focus that Norm Pattiz has driven, as the Board of Governors, into making sure that there is responsiveness to the Government there. I recognize that there are downsides, too, ma'am, as well, as we talked about.

Senator FEINSTEIN. Well, I just—in one sentence. I would agree that there have been administrative changes, security changes, and that is good—at a tremendous price.

And I am still—and maybe there is focus, but what I want to see is, what is the increased productivity in terms of benefit to the Nation? Candidly, I haven't seen it. So if it is there, I would hope you would advise me of it as time goes on.

Mr. D'AGOSTINO. I would like to do that, and I would actually like to take that for the record, if I could, and then provide that in writing?

Senator FEINSTEIN. I would be happy if you would do that.

Senator DORGAN. Well, before the Senator from California leaves, we have had testimony from some laboratory directors about the substantial increased cost of the contracts to supervise these laboratories. We have also had some testimony about how these costs have ratcheted up, up, way up in a very dramatic fashion, and that eats into the ability to retain the scientists.

I would like to understand this. I understand your answer that there have been some benefits, and I accept that security and other things. But it is also the case, isn't it, that the substantial increase in costs of these contracts to manage these laboratories by the private sector have increased? Could you send us some analysis of the

weapons labs so that we can understand what those increases have been?

Mr. D'AGOSTINO. I would like to do that, Senator. I think that would be great. Or I could answer it now? It depends on how much time you have, sir.

LASER-POWERED FUSION ENERGY

Senator DORGAN. Well, I want to ask Senator Feinstein to ask a few questions about the fission/fusion observation she saw because I am also interested in that. If you have time and you want to ask those questions, let me yield to you so that we can hear that discussion.

Senator FEINSTEIN. All right. The place is amazing. I have never seen anything like it. It truly looks like Star Wars. And the fact that you can get all of these lasers concentrating on this little tiny target of hydrogen encased in this gold pellet that goes "boom" and pushes out all of this energy. Now this just in my layperson's first blush is truly amazing.

I think a purpose of the lab—or of this program, obviously, is to see that our nuclear weapons are safe without testing, and the assumption is that it will be able to do it. But the promise for the future is so great in terms of nuclear science and what nuclear science might produce as we develop the green economy. I mean, that is kind of the way I see it, but you may differ with that, Mr. D'Agostino?

Mr. D'AGOSTINO. No, ma'am. You have actually characterized it quite well. The three main purposes, first of all, the primary purpose is to support the deterrent. And frankly, I call it building that core group of varsity science team people that we need to address the non-proliferation problems that the country faces, the forensics and intelligence analysis that the country needs. That is number one.

Number two, obviously, is advance the basic science. And number three, you have hit on it, is this idea that there is the opportunity to bring fusion into the picture to address a carbon-free kind of energy environment.

So what I would say on the third element, which, of course, is kind of nirvana in some respects, and we will describe it that way, is the first step is to get to ignition. And we can't get to fusion without ignition. So our focus, our eyes will be focused in 2010 on getting a first credible ignition experiment and then seeing where that goes.

The laboratory clearly has some proposals in that area on what the next step might be. I love the enthusiasm of the scientists and engineers there. It is captivating. It is energizing. I also want them to be pragmatic and realistic because I need to come and tell you what we believe we need in order to have an effective program.

I believe it is time to start thinking about the next step, but it is not time to start figuring out, start pouring concrete because we are not quite there yet. So the first step is to do the ignition experiments, get success on fusion here on Earth. It has never been done before. It is a real tough problem.

As Ed Moses said, Mother Nature is a tough person to deal with, and that reality is there. But it is quite exciting about what the future may hold.

Senator FEINSTEIN. Tom Friedman visited the lab last month and wrote a column, and he said if this thing works, it is a "holy cow" game changer. And that is the fusion, and I guess eventually fission then, that is to keep the waste down, right?

Mr. D'AGOSTINO. The idea is fusion will release a tremendous—yes, ma'am. The fusion will release a tremendous amount of X-rays and neutrons that can ultimately be used to burn up, in effect, waste to these actinides and deal with what they call a fusion/fission hybrid. It is this idea of taking——

Senator DORGAN. But pure fusion consumes its waste, doesn't it?

Mr. D'AGOSTINO. Pure fusion only generates helium, which is the helium gas. So it is not a problem. So, in effect, it doesn't really generate the kind of waste we see from fission, which generates these highly radioactive wastes. But what it does do, sir, is generate these neutrons and X-rays that can go help us burn up these materials that we would like to get rid of, ultimately.

Senator DORGAN. As you can tell, we have a very strong scientific background here.

Mr. D'AGOSTINO. You did very well, sir.

Senator DORGAN. The cloture vote just started, just an observation. I toured a lab the other day. It reminded me when you talked about lasers. Lasers are used for so many things. I toured a lab the other day in which they are using sophisticated computer technology and lasers to target female mosquitoes. Those are the ones that bite.

Senator FEINSTEIN. As all species.

Senator DORGAN. I couldn't have said that. But at any rate, they can target over a 100-yard area all the mosquitoes and target the female mosquitoes, destroy the mosquitoes with lasers. It is pretty extraordinary, part of what they are trying to do is deal with malaria and other issues.

At any rate, again, Mr. D'Agostino, we have a cloture vote that has started. What I would like to do is I have other questions, and I want to send you a list of questions and ask that you would respond for the record as we begin to get down the road here and evaluate what we might want to do on the appropriations side.

I do want to say to you that I think this subcommittee has an advantage in working with you, and we appreciate you and your colleagues who have joined you today, the work that you are doing. These are challenging times, and I think a lot of the discussion has been about Earth-penetrating, bunker-buster weapons, or RRW, or a whole ranging of things over recent years.

Life extension programs and stockpile stewardship are critically important, but now, especially now, the issue of non-proliferation and nuclear intelligence and those things, we are going to rely on your agency in a very significant way. And we need to have the best people there. We need to have adequate funding. In many ways, our future depends on that.

ADDITIONAL COMMITTEE QUESTIONS

So let me thank you and your colleagues for being here, and we will be submitting additional questions for the record.

Mr. D'AGOSTINO. Thank you, sir. And thank you, Senator Feinstein. I appreciate it.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DIANNE FEINSTEIN

NUCLEAR WEAPONS

Question. As you know, Congress, on a clear bi-partisan basis, eliminated all funding for the Reliable Replacement Warhead program in fiscal year 2008 and fiscal year 2009. I am pleased that the administration has requested no funding for this program in its fiscal year 2010 budget request. This is good news.

What factors led the administration to request no funding?

Answer. The decision to terminate the RRW program was a Presidential decision and is fully supported by NNSA. NNSA will continue to assess the requirements to maintain our aging nuclear deterrent. While doing so, NNSA will ensure that all weapon activities designed to ensure the longevity of that deterrent are properly integrated with the overall nuclear security strategy being formulated in the Nuclear Posture Review.

Question. In your testimony, you state: ". . . we are concerned about increasing challenges in maintaining, for the long term, the safety and reliability of the aging, finely tuned warheads that were produced in the 1970s and 1980s and are well past their original planned service life".

Are you leaving the door open for reviving RRW at a later date? Can we say that the program is dead?

Answer. The RRW program has been terminated and will not be revived. We will by necessity have to address critical stockpile challenges through the Life Extension Program (LEP), such as the need to enhance weapon safety and security, address aging systems that have a low performance margin to failure, or use exotic and hazardous materials.

Question. The administration has begun to negotiate a new nuclear weapons treaty with Russia with the goal of concluding an agreement by the end of the year. A new Nuclear Posture review is also due by the end of the year and I am pleased that the National Nuclear Security Administration is actively engaged in both efforts.

How will the Nuclear Posture Review influence the size of the reductions in each nation's stockpile?

Answer. The NPR made it an early priority to accomplish the analysis necessary to support the START Follow-on treaty negotiations, which President Obama and President Medvedev directed should be completed before START expires in December 2009. This analysis has concluded that maintaining a nuclear triad with a bilaterally verifiable reduced number of operationally deployed strategic nuclear weapons and accountable strategic delivery vehicles would enhance our national security objectives and continue to provide extended deterrence to allies and friends. As a result, President Obama reached a Joint Understanding with President Medvedev in July, stating that ". . . each party will reduce and limit strategic offensive arms so that 7 years after entry into force of the treaty and thereafter, the limits will be in the range of 500–1,100 for strategic delivery vehicles, and in the range of 1,500–1,675 for their associated warheads. The specific numbers to be recorded in the treaty for these limits will be agreed through further negotiations." Strategies for augmentation forces and non-strategic weapons are still under review by the NPR team. For more information on pre-decisional Nuclear Posture Review topics, please contact:

NOTE.—Source: Dr. Bradley Roberts, Deputy Assistant to the Secretary of Defense for Nuclear and Missile Defense Policy Co-Director, 2009 Nuclear Posture Review.

Question. It has been reported that the new treaty could set a new ceiling of 1,500 operationally deployed nuclear warheads for each nation, down from 1,700 to 2,200 set by the Moscow Treaty.

Is that your understanding? Can we go lower?

Answer. NNSA will maintain the stockpile the President deems necessary to support our national security. In July, President Obama reached a Joint Understanding

with President Medvedev, stating that ". . . each party will reduce and limit strategic offensive arms so that 7 years after entry into force of the treaty and thereafter, the limits will be in the range of 500–1,100 for strategic delivery vehicles, and in the range of 1,500–1,675 for their associated warheads. The specific numbers to be recorded in the treaty for these limits will be agreed through further negotiations." The NPR is continuing analysis of alternative strategic approaches beyond the immediate confines of the START Follow-on negotiations to frame options for strategic nuclear decisions for the next 5–10 years. This analysis includes investigating possible future security environments in which relations with Russia dramatically improve, as well as implications if the START Follow-on treaty does not enter into force or if reset of the U.S.-Russian relationship does not continue.

NUCLEAR NONPROLIFERATION EFFORTS

Question. I firmly believe that ratification of the Comprehensive Test Ban Treaty is critical to reclaiming U.S. leadership in the nuclear nonproliferation field and bringing us closer to a world free of nuclear weapons. Does the National Nuclear Security Administration support ratification of the Comprehensive Test Ban Treaty?

Answer. NNSA certainly supports the administration's decision to seek ratification of the CTBT. We are confident that the science-based Stockpile Stewardship program, when linked with weapon system surveillance and life extension programs, will assure weapon safety, security, and effectiveness. The same high level of technical expertise and relevant experience that NNSA applies to stockpile management without underground testing also allows NNSA to play a leading role in: (1) preventing other states from evading the Treaty; (2) supporting the establishment, sustainment, and operation of the International Monitoring System, the CTBT On-Site Inspection regime, and other elements of the CTBT verification system; and (3) sustaining and improving U.S. National Technical Means to ensure viable independent treaty verification.

Question. I applaud your commitment to supporting President Obama's goal of securing all vulnerable nuclear materials from around the world within 4 years. What do you need from Congress to meet this goal? What programs will be involved? What are the key challenges?

Answer. The President's April 5, 2009, Prague speech outlined an ambitious strategy to address the international nuclear threat, including measures to reduce and eventually eliminate existing nuclear arsenals, halt proliferation of nuclear weapons to additional states, and prevent terrorists from acquiring nuclear weapons or materials. As part of this strategy, the President announced a new American effort, working with our international partners, to secure vulnerable nuclear materials around the world within 4 years. NNSA will play a key role in these efforts, together with our colleagues at the Departments of State, Defense, and other key U.S. interagency and international partners.

NNSA's Defense Nuclear Nonproliferation office already partners with over 120 countries to address global nuclear proliferation and nuclear terrorism threats. However, contributing fully to the President's goal to secure all vulnerable nuclear material worldwide within 4 years will require expanding our cooperation with Russia and other key countries, pursuing new partnerships to secure materials, and strengthening nuclear security standards, practices, and international safeguards. The administration is working to identify priorities for expanding and accelerating U.S. nonproliferation and nuclear security efforts overseas with available resources. Key challenges in contributing NNSA workscope to help achieve the administration's nuclear security vision relate to obtaining the necessary agreements from sovereign countries for this cooperation, as well as the need for related legal agreements and, in a few cases, new technological tools.

WEAPONS LABS

Question. A few years ago, the U.S. Government privatized the DOE weapons labs, including Lawrence Livermore National Lab in California. Soon after, it became clear that the decision had changed the economy situation at the lab. With a need to pay both taxes and produce a profit, the lab made significant cutbacks in employment, from 5,872 to 5,715 employees.

Now a few years into this process, what do you see as the benefits of privatizing this lab? Please be as specific as possible. Do you believe these benefits still outweigh the costs?

Answer. Lawrence Livermore National Security, LLC (LLNS) took over management of the Lawrence Livermore National Laboratory (LLNL) from the University of California (UC) in October, 2007. It is true that moving from a contractor that is a non-profit educational institution to a for-profit entity costs the Government

more in taxes and management fee. At the same time, since LLNS took over the management of LLNL, the Laboratory's operating budget has declined. The combination of these factors has presented the LLNS management team with many challenges. Despite these challenges, LLNS has maintained UC's record of outstanding performance in the mission and scientific areas of work performed for the Government and non-Government sponsors.

At this point in the 7-year base contract term, it is still too early to have realized significant benefits from the contract change. However, from NNSA's first annual performance evaluation report completed on LLNS in fiscal year 2008, we have seen some marked improvements and accomplishments in the following areas of activity:

Mission:

—Developed 1st generation 3D energy balance model for weapons physics
—Executed National Ignition Facility project within scope, schedule, and budget
—Accomplished significant computing advancements
—Executed the TriPod strategy to provide a future common tri-lab software system
—Exceeded goals for removal of special nuclear material
—Sustained world leading science despite staff reductions
—Advancements in nonproliferation and threat reduction technical capabilities

Operations:

—Accelerated safety compliance requirement submissions for all nuclear facilities
—Improved security protection without mission impact

Business and Institutional Management:

—Simplified the cost model and upgraded financial systems
—Successfully executed a challenging workforce restructuring plan
—Made significant progress in standing up a new contractor assurance system
—Implemented numerous cost reduction initiatives
—Contributions of Parent organizations assessments to improvements

Again, this was LLNS's first year accomplishments. We are currently evaluating their second year performance results (fiscal year 2009) and have observed further improvements. Based on our overall observations, we fully expect that there will be widespread improved results throughout the Laboratory in all areas of mission, operations and business/institutional management as the LLNS management team fully implements the changes it needs in order to become a more effective and efficient organization. As this occurs, the Government should begin to see the more significant benefits it hoped to realize from the contract change.

Question. On May 23, 130 former employees of Lawrence Livermore National Laboratory filed suit against the lab alleging age discrimination during layoffs last May.

I understand you may not be able to comment about this case, but what steps have you taken to ensure that labs are getting and retaining the best people, regardless of gender, age, or ethnicity?

Answer. To entice university students to join NNSA, numerous intern-like programs that offer extensive training and on-the-job experiences are underway to recruit contractor employees including the Sandia Nuclear Weapons Intern Program that provides graduate level training in nuclear security enterprise operations and Department of Defense interfaces, the Nonproliferation Graduate Program for practical application in nuclear technologies and nonproliferation, and numerous postdoctoral fellowship, grants and intern opportunities. These intern programs educate university students about the mission of NNSA and offer training and hands-on educational opportunities that aren't often found in the private sector.

To retain the best employees, the NNSA National Laboratories offer employees opportunities to participate in cutting edge science through the Laboratory Directed Research and Development program and via the Work for Others programs. There are also many prospects for employees to undertake detail assignments, job swaps, perform in acting management capacities, and education reimbursement and training opportunities. The goal is to provide challenging, career enhancing opportunities to entice experienced and expert employees to stay within the NNSA to retain skill sets that take years and years to develop.

QUESTIONS SUBMITTED BY SENATOR JON TESTER

Question. In addition to strengthening the administration's ability to secure vulnerable nuclear stockpiles in Russia, will budget increases for programs like the Nuclear Materials Protection and Cooperation help secure weapons in other nations? If so, which ones and how are the resources allocated within the agency?

Answer. Yes, the budget increases will allow our MPC&A program to partner with countries beyond Russia to help secure vulnerable nuclear materials. As with our

work with Russia, this cooperation is tailored to an individual country's needs and can consist of security best practices sharing, provision of equipment, and related training. We would be able to offer a detailed briefing, as appropriate, regarding these other priorities.

Question. In your opinion, Administrator D'Agostino, how far do the budget increases for securing vulnerable nuclear weapons and civilian stockpile go to do the job? What are the long-term budget needs going to be for the United States to help secure all of the most vulnerable stockpiles globally?

Answer. Vulnerable nuclear fissile materials include highly enriched uranium (HEU) and plutonium whose physical protection is not on par with international standards (e.g., the IAEA guidelines published in INFCIRC/225/rev.4) or is otherwise judged to be at risk due to the particular threat environment in the country. Consistent with the President's April 5, 2009, speech in Prague, the administration is working to identify priorities for expanding and accelerating U.S. nonproliferation and nuclear security efforts to address these vulnerable nuclear materials overseas. NNSA fully supports the President's fiscal year 2010 budget request for nonproliferation and nuclear security work overseas as it allows us to address the highest priorities in achieving the President's unprecedented global nuclear security vision. In terms of the long-term budget needs for addressing vulnerable nuclear materials worldwide in 4 years, the administration will continue efforts to identify remaining priorities and requirements.

QUESTIONS SUBMITTED BY SENATOR ROBERT F. BENNETT

NOT ALL SCIENCE FUNDING IS EQUAL—ESPECIALLY AT THE WEAPONS LABS

Question. Mr. D'Agostino, I am troubled by the disparity in funding for applied and fundamental scientific research provided by DOE Office of Science labs versus the NNSA labs. Clearly, the cancellation of the Los Alamos Neutron Science Center (LANSCE) Refurbishment is the most glaring example of the selectiveness of the research funding in the budget. The LANSCE facility is the scientific cornerstone of Los Alamos, serving both classified and unclassified work and supporting over 500 users annually.

How do you explain the failure in the budget to link the DOE and NNSA science?

Answer. The DOE Office of Science budget is devoted to supporting basic science facilities, personnel, and grants that will impact broad missions. The NNSA budget has a technically broad but specific mission and must balance the fundamental and applied science required for stockpile stewardship with the equally important work required for directly maintaining the stockpile, and all of the associated infrastructure, security, and environmental compliance for the nuclear weapons complex. With increasing costs and flat or decreasing budgets, we have consequently had to balance investments in research needed to address future concerns in order to address immediate stockpile issues and aging infrastructure.

Question. What do you see as the scientific future for Los Alamos LANSCE?

Answer. The principal Stockpile Stewardship (SSP) experiments at LANSCE involve conducting measurements of nuclear data for use in improving the accuracy of the simulation of nuclear weapon detonations and proton radiography of high explosive driven materials. While some of these capabilities exist, in part, at other facilities it would be necessary to make significant investments at several facilities in order to conduct the SSP relevant experiments currently performed at LANSCE. The ability to perform classified experiments, experiments that utilize high explosives, and stockpile relevant materials all in one place is a unique aspect of LANSCE. The Office of Science continues to use LANSCE for isotope production, neutron scattering, and materials science and we expect this work to continue for the foreseeable future.

Question. What are your plans for conducting this work after the accelerator is gone?

Answer. We do not plan to close the accelerator. While we plan to continue to operate the accelerator for the foreseeable future, it isn't really possible to know how long the accelerator will be able to operate without refurbishment. The decision on whether to re-invest in the infrastructure at LANSCE will be deferred until after fiscal year 2010. All of the individual components are in principle repairable indefinitely, assuming parts are available, but in practice we expect that the reliability of the facility will decay without further investment. Without aspects of the refurbishment in some form yet to be determined, we are accepting increased risk of major component failures affecting continued operations.

STRATEGIC POSTURE COMMISSION—INVESTMENT IN INFRASTRUCTURE

Question. Mr. D'Agostino, the bipartisan consensus of the Perry/Schlesinger Strategic Posture Commission Report was that total disarmament is unlikely in the foreseeable future. As such, the Commission recommends the NNSA undertake a focused investment strategy to ensure a capability is in place to respond to unforeseen military challenges and maintain the extended deterrent for our allies.

The foundation of that capability is the completion of the CMR-Replacement facility (Los Alamos) and the UPF Facility at Y–12 (Oak Ridge, TN). These facilities replace 1950's era facilities that are not protective of worker health and safety, and the Defense Nuclear Facilities Safety Board recommends they should be closed as soon as possible.

Given the unique responsibility of each facility and likelihood that the United States and Russia won't agree to eliminate their respective stockpiles when do you anticipate making a decision on the fate of these facilities and what are the decision drivers for this decision?

Answer. Our recently submitted fiscal year 2010 budget reflects a transition year for Weapons Account Activities while we complete the administration's Nuclear Posture Review (NPR). We are presently continuing design work for CMR-Replacement and UPF but have not included future construction funding pending recommendations from the NPR. I anticipate the fiscal year 2011 budget to be submitted to Congress in February 2010 will reflect our decision approach relative to these two major nuclear facilities.

We recognize the need to replace the existing 1950's era facilities as rapidly as practical. The drivers for our decision will include the specific recommendations in the NPR and our judgment on how to best balance the competing needs of our enterprise given the available resources. We must achieve the correct balance between sustaining our science and technology base, refurbishing or modernizing our stockpile, and recapitalizing major facilities that would include constructing the CMR-Replacement and UPF.

Question. Recent press articles reported that the budget request is not adequate to sustain the existing design teams and would force layoffs. Do you believe this budget request would result in layoffs and contribute to further project delays at either of these facilities?

Answer. Yes. The proposed fiscal year 2010 funding plan will result in lower staffing levels for the design teams for CMRR and UPF than previously planned. The delay in funding pending the strategic decisions of the Nuclear Posture Review (NPR) and related considerations will make completion of both projects later than originally planned. The administration plans to make decisions about these two projects in the broader context of the NPR.

Question. Your budget will delay the completion of the RLUOB by 1 year based on this budget estimate. How much more funding is needed to complete this facility including acquisition of equipment and installation to maintain the current schedule of 2010?

Answer. The RLUOB will complete construction in September 2009 and be equipped and made ready during 2010–2012, with the schedule controlled by equipment delivery. The costs of acquisition and installation of the RLUOB equipment and related scope to bring the facility up to operations are currently estimated at about $199 million, of which approximately $36 million has been appropriated already. The President's budget request plus previously appropriated funds adequately support RLUOB and its equipment.

Question. How much is needed to fund a new start on UPF and CMR–R?

Answer. NNSA does not contemplate a "new start" for either project in fiscal year 2010 because the designs are not yet complete. The fiscal year 2010 funding request will allow both projects to make some design progress and avoid the need for a restart. The funding levels in fiscal year 2010 balance sustaining continuity of the projects with minimizing commitment of resources until after completion of the Nuclear Posture Review.

Question. The Defense Nuclear Facilities Safety Board also stated unequivocally that NNSA needs to get out of both the CMR and Y–12 facilities. As a result of the delays created by the budget request, what will you tell the Defense Board, the scientists, and staff working in the old facilities that fall below the required structural and health and safety standards?

Answer. The CMR facility at Los Alamos and the uranium processing facilities (9212/9215) at Y–12 are old, past-end-of-life facilities. Although these facilities are about 60 years old, we are maintaining and operating these facilities in a safe and secure manner. Over the past decade, we initiated actions and took proactive steps to reduce the hazards at these facilities. For example, improvement of facility safety

systems, reduction of nuclear material inventories, implementation of new safety controls, etc., were some of the actions taken to enhance both the public and worker safety. This approach, however, does not fix the root problem of end-of-life infrastructure and is a temporary approach. Additional infrastructure investments will be needed to continue to safely operate these facilities until replacement facilities become available.

Until replacement facilities are available for both CMR and Y–12 facilities, we will continue to safely operate and maintain the existing facilities but at increasing costs, and manage increasing program vulnerability and safety risk. At CMR, risk reduction steps are being implemented through the CMR Facility Consolidation and Risk Mitigation Program. At Y–12, risk mitigation activities will be implemented through investment in the Facility Risk Reduction Program. In the absence of a decision on replacement facilities, dedicated commitment for increased operations funding would be required to continue to safely operate these facilities.

TRANSFERRING THE TRITIUM MISSION IS A WASTE OF TAXPAYER DOLLARS

Question. Mr. D'Agostino, last year, an independent study of the proposed transfer of the tritium R&D and design missions found that there was "no programmatic or economic justification for closing down the LANL tritium R&D facility and reestablishing the capabilities at the Savannah River tritium site."

It is my understanding that the NNSA's Navy and Air Force customers are not convinced this transfer makes sense and find no justification for the move.

Also, General Smolen, who was your deputy at the NNSA, recently stated in the press that "There's really not any huge cost savings one way or another." He went on to say that the reason behind the decision was related to work-load leveling.

As you are undoubtedly aware, the Senate included language in the supplemental stopping the transfer until an independent analysis can be performed of this decision and we can better understand the NNSA's rationale for this costly and unjustified decision.

What was the rationale for the NNSA ignoring the TechSource study recommendation which advised against moving the tritium missions?

Answer. We do not believe the TechSource study advised against moving the tritium missions as much as it stated that such a move should have a programmatic or economic justification, considering the importance of the GTS mission. The TechSource study provided useful recommendations for mitigating risks during the transition, and these have been incorporated into our implementation planning.

Question. Do you support General Smolen's argument that work-load leveling was the rationale for this decision?

Answer. Work-load leveling may be a benefit of this transition, however there are two other significant benefits. The first has to do with the potential for Sandia to provide a more integrated system architecture, incorporating GTS into the other non-nuclear subsystems. The second is that, as time goes on, it may no longer be possible to maintain a critical mass of technology staffs at multiple locations. While it may be possible to support two design agencies today, and to support two R&D centers that load and handle bulk quantities of tritium, we anticipate that future downsizing of the enterprise will force us to choose to have only one DA and one tritium R&D center of excellence. It seems prudent to plan ahead for this eventuality rather than to cope with it after the opportune time for transition has past. With the Savannah River Site having been established as the Tritium Center of Excellence, closer coordination of the R&D enterprise with the production facility is expected to be an advantageous initiative.

Question. Will the tritium GTS mission be impacted by the Nuclear Posture Review?

Answer. The likely outcome of the NPR is expected to lend further support to the GTS transition decision. Projected future workloads do not support keeping highly specialized technical expertise at multiple sites, and more leveraging of talent will be required to support system needs. The mechanical and materials knowledge will need to be applied across multiple component sets. As the NPR relates to stockpile size, our expectation is that the GTS DA and tritium R&D missions and workloads will not be significantly affected. Considering the range of probable recommendations, we will still need to support GTS technologies that are currently deployed, and to make further improvements to the reliability, safety, and surety of GTS units in the future. Reductions in the quantities of systems deployed or developed will not result in proportional reductions in the need for GTS field support or development but may constrain the resource base available to support these missions.

Question. Dr. Seymour Sack sent a letter to Mr. D'Agostino on Feb 8, 2008 to which a response was sent. Can you please forward a copy of Dr. Sack's letter re-

garding transfer of the tritium gas transfer system to my office or the Senate Security Office if it is classified?

Answer. Yes. We did receive Dr. Sack's letter addressing his concerns with our decision process. We will provide a copy of Dr. Sack's letter as well as our response.

DOES THIS ADMINISTRATION SUPPORT IMPROVED WEAPONS USE-DENIAL STRATEGIES?

Question. Given the importance of the B61 to sustaining a safe, secure and reliable nuclear deterrent for the United States and its allies, the NNSA has made a decision to proceed with the B61 Life Extension Program. I have two concerns with your budget request. The first, it fails to provide sufficient funding to support a full feasibility study of both nuclear and non-nuclear parts as requested by the Air Force. Second, it fails to evaluate the option to integrate state-of-the-art use control devices. I believe it is important that the weapons we do retain have the best safety and security features built into them.

Does the administration support adding more state-of-the-art safety and security features to our nuclear weapons systems like the B61?

Answer. NNSA is committed to improving the surety (safety, security and use control) of the nuclear weapons stockpile at each insertion opportunity. This commitment meets the national imperative to ensure an adversary, either a nation or terrorist, never obtains a functional U.S. nuclear weapon. U.S. Presidents have consistently articulated this imperative through directive or policy such the National Security Presidential Directive 28 and more recently articulated by our President in the speech he delivered in Prague, April 2009.

As directed by the Nuclear Weapons Council, the Phase 6.2 life extension study for the B61 Mods 3, 4, 7, and 10 bombs began in September 2008, and we are evaluating, within existing funding constraints, the inclusion of state-of-the-art surety features in both the non-nuclear and nuclear systems during the study.

Question. How much more would it cost to expand the feasibility study to include adding safety and surety features to the physics package?

Answer. The NWC has directed a study including improving surety of the nuclear explosive package (NEP). NNSA estimates that an additional $30 million in fiscal year 2010 would be needed to fully support the addition of the nuclear scope to the study. This includes the study of options to add improved safety, security and use control to the NEP. This additional scope and resources are needed to complete the feasibility study in fiscal year 2010 and align the program to achieve a first production unit by 2017. Alignment between the NNSA and DOD is essential to providing the needed capability.

Question. Since this is an Air Force weapon, can you tell me what their preference would be regarding the expansion of this study to include the physics package?

Answer. During an April 2009 senior-level review, the Air Force and other DOD representatives made it clear that it is a priority for NNSA to include the NEP in the B61 life extension study. In addition, senior Air Force officials have communicated with the Secretary of Energy, the NNSA Administrator, and congressional staff their strong endorsement of adding enhanced safety and security features within the nuclear explosive package.

ADVANCED COMPUTING

Question. Supercomputing is another success of Stockpile Stewardship. You have the fastest computer in the world, and NNSA has achieved modeling and simulation capabilities that many thought impossible.

The Defense Science Board conducted a study of the Advanced Computing program and was very complimentary of the achievements in this program to develop a predictive and simulation capability and drive innovation in the advanced computing architecture.

The Defense Science Board study concluded that the existing budgets are inadequate to achieve the milestones established by the NNSA.

Can you please provide the subcommittee with a list of the current milestones and the status of each and what impact the budget request will have on each milestone?

Answer. Computer simulation underpins our ability to certify weapons in the absence of testing, as well as meet our broad national security responsibilities. ASC planning is based in part on the urgency of developing predictive tools while experts still reside in the complex. The "milestones" in the ASC Roadmap (2006) to which the Defense Science Board (DSB) report refers are actually stretch goals along the pathway set forth in four focus areas necessary to meet national security simulation needs. These target goals include, for example, developing science-based replacements for (ad hoc models) Knobs #1–4 in the 2009–2016 timeframe, attaining a 100x petascale computing capability in 2016, an exascale computing capability in 2018,

and a 50 percent improvement in setup-to-solution time for significant finding investigation (SFI) simulations. The knob-removal goals are key stockpile stewardship objectives and have been incorporated into the Predictive Capability Framework (PCF) that integrates activities of the NNSA simulation, science and engineering campaigns. The target date for achieving these stretch goals may change depending on funding or as more insight is gained about the problems.

The NNSA has decided to keep the 2010 budget for science level with 2009 pending outcome from the Quadrennial Defense Review (QDR) and the Nuclear Posture Review (NPR). To some degree, the declining funding that the DSB reviewed has been stemmed. However, their question about how the ASC program intends to meet roadmap stretch goals in a timely fashion, such as achieving exascale computing by 2018 to support stockpile stewardship, remains a legitimate concern.

Question. What is your plan for developing the next generation of computers and how is this effort specifically being coordinated with the Office of Science?

Answer. There has been an ongoing R&D partnership between ASC and DOE Office of Science's Argonne National Laboratory (ANL) to develop advanced supercomputers based on the BlueGene P/Q architecture. However, this level of collaboration and associated funding will not achieve exascale computing. Developing the next generation of (exascale) computers will be a significant challenge, more difficult than the first effort under ASCI to develop a 100 teraFlop computational capability. Machines at the exascale will require radically new ways of thinking about computer architectures and ways to program applications.

We recognize that this is a challenge beyond the scope of ASC alone within current funding projections, and that it will require a Government-wide solution. To this end we have taken the first steps to establish a collaboration with the Office of Science to make exascale computing a reality. This joint collaboration was announced at the June 2009 Scientific Discovery through Advanced Computing (SciDAC) Conference in San Diego, CA, and a steering group has been formed. The first task for the steering group is to report to the ASCR and ASC programs the scope of what needs to be done to achieve exascale computing. Once identified, the scope could require focused investments for a period of time to be successful. The programs' intent is to work together through shared investments towards a common goal of achieving exascale computing by the end of the next decade.

Question. And, what is your plan for ensuring that the sophisticated computer codes and models that you have in place now will be able to be run on these new generations of supercomputers?

Answer. Generally, our modern-multiphysics codes are continuously updated. Portions of the codes that can best take advantage of the new architectures are modified to do so. Writing code can take years to achieve, and must be well planned and synchronized with evolving technologies. Consequently, ASC must be intimately involved with the technology frontier. Our approach ensures that the power of the supercomputers is available to users of the existing code base; it provides a reliable but very modest improvement in code and model performance. By adopting this incremental approach, risk that our codes and models will not be available is minimized.

This approach will likely not be sufficient as we approach exascale computing. But, at this time it is premature to project what will be needed to move our codes to an, as yet, unknown architecture. Our planning will be synchronized with architectural designs as they mature. At that time we will make the traditional tradeoffs between advancing the current codes, freezing development until transitioning is complete, or accelerating the transition by expanding the work scope. While we generally have not had to rely on expanding work scope in the recent past, this scenario is more likely as we approach exascale, which will dictate the need for additional funding for a limited term initiative in future years.

Question. Can you please provide the subcommittee with a project data sheet on for the Zia and Sequoia machines, including cost, schedule, and mission justification?

PART 1—ZIA

Answer. The DOE NNSA ASC Program requires a production capability computing system in 2010 to run extensive, high-fidelity integral calculations of high-priority applications within the Complex to support the national Stockpile Stewardship Program. The Zia capability system will replace the ASC Purple system for existing simulation codes as the next national user facility for computing across the tri-labs. This system will provide a capability class resource to the ASC simulation community for the 2010–2015 timeframe.

Zia has a 3-year schedule, with delivery of the platform scheduled for Q3 fiscal year 2010 and assume the national user facility workload by the beginning of fiscal year 2011. The funding profile for Zia is as follows: fiscal year 2008—$0; fiscal year 2009—$15 million in budget, $0 spent with project at CD–1; fiscal year 2010—$42.36 million; fiscal year 2011—$14.6 million.

PART 2—SEQUOIA

The Sequoia mission need is to run both high-fidelity science calculations and three-dimensional uncertainty quantification (UQ) calculations. In addition, Sequoia is an advanced architecture system that will push the state of the art on the road to exascale computing. It will provide the processing power necessary to run the most resolved calculations required by the weapons codes as they will exist between 2011 and 2016.

The scope of this project covers acquisition of Sequoia computational resources and related I/O infrastructure, platform vendor build contract, platform vendor development and engineering (D&E) contract, and an I/O infrastructure D&E contract. In addition to the 2011 system delivery, the Sequoia contract will provide a smaller, but significant, initial delivery (ID) environment beginning in 2008 to permit the necessary scaling and code development to ensure effective use of the final platform.

Sequoia has an extended 5-year schedule, with delivery of the final system scheduled for Q1 fiscal year 2012. The Future Years Nuclear Security Plan (FYNSP) funding profile for Sequoia is as follows: fiscal year 2008—$15 million; fiscal year 2009—$54 million in budget, $42 million spent; fiscal year 2010—$14.5 million; fiscal year 2011—$38.7 million; fiscal year 2012—$51.8 million; fiscal year 2013—$43.0 million.

CUT TO NONPROLIFERATION AND DETECTION RESEARCH AND DEVELOPMENT

Question. Mr. D'Agostino, the budget request cuts the nuclear detection R&D budget by $66 million. This funding is critical to maintaining the technological advances to detect and monitor clandestine nuclear program or to catch smuggling of nuclear materials. In light of the activities in North Korea and Iran, it seems this funding reduction should be reconsidered.

What is the rationale for this reduction?

The apparent "reduction" of $66 million comes from comparing the fiscal year 2010 budget request with a fiscal year 2009 appropriation that was significantly higher than the fiscal year 2009 budget request. The administration's fiscal year 2010 budget request is greater than the fiscal year 2009 request.

Question. Recent reports, including the Strategic Posture Review and the Council of Foreign Policy, recommended increased funding for forensic research and attribution. Can you please describe how this program is investing in our forensic and attribution capabilities and what long term investments in NNSA facilities aside from the 300 Area at PNNL where this program is building our capabilities?

Answer. NNSA investments include purchase of specific scientific instrumentation for the NNSA laboratories to advance research in post-detonation forensics analytical methods (some examples include: laser fluorination isotope ratio mass spectrometer (LLNL); Cameca secondary ion mass spectrometer (SIMS–LANL); Los Alamos Sferic array (measures ground EMP)). In addition to these activities funded by the NN R&D program, NNSA funds national technical nuclear forensics work through the Nuclear Counterterrorism and Incident Response program at about $10 million annually.

Question. NNSA facilities provide significant and varied research and discovery capabilities for different users and mission need. Each of these facilities is costly to maintain and staff. Can you please tell the subcommittee how much of the annual Nonproliferation and Detection R&D budget contributes to operations funding at our national labs in both real dollar amount and as a percentage of facility operations.

Answer. NNSA's Defense Nuclear Nonproliferation (DNN), Office of Nonproliferation and Verification R&D funding is presented as a percentage of estimated overall NNSA fiscal year 2009 funding to the listed DOE/NNSA labs. The following table is provided.

FISCAL YEAR 2009 APPROPRIATIONS—ALLOCATED BY SITE

[Estimates in whole dollars]

Reporting Entity	Nonproliferation and Verification R&D	Percent of NNSA Site Funding
Ames National Laboratory	$236,000	100.0
Argonne National Laboratory	3,275,000	6.8
Brookhaven Science Association (BNL)	2,171,000	5.1
BWXT Pantex	35,000	<0.01
BWXT Y–12	2,226,000	0.3
NNSA–HQ (including SBIR)	11,043,129	13.2
Idaho National Lab	4,595,000	2.3
Kansas City Plant	35,000	<0.01
Lawrence Berkley National Lab	5,376,000	94.9
Lawrence Livermore National Lab	43,184,671	4.2
Los Alamos National Lab	88,231,445	6.0
NNSA-Service Center (incl. University grants)	16,622,605	1.9
NSTech	10,538,000	3.9
Oak Ridge National Lab	25,306,746	18.6
Pacific North West Lab	42,257,800	19.5
PNSO/PNNL Construction	18,460,000	98.8
Sandia National Lab	73,144,604	6.7
Savannah River Nuclear Solutions	17,054,000	6.2
TOTALS	363,792,000	4.9

Question. What are the long term technology challenges this program is working to solve and what are the top research priorities in this budget?

Answer. The top research priorities in this budget are divided into two areas. Roughly 60 percent of the budget will focus on developing technologies and methods to detect foreign uranium-235 production activities, plutonium production activities, special nuclear material movement and on developing Global Nuclear Safeguards technologies. The other 40 percent of the budget will focus on improving the Nation's ability to detect nuclear detonations by building the Nation's operational treaty monitoring space sensors, developing the regional geophysical capabilities to enable the Nation's ground-based treaty monitoring networks, and advancing technology in post-detonation nuclear forensics.

HIGHLY ENRICHED URANIUM IN RUSSIA

Question. Mr. D'Agostino, your testimony and pronouncements of the administration have clearly made nonproliferation a top priority including the goal of minimizing the use of highly-enriched uranium in the civilian nuclear sector. I am supportive of those goals, although I am concerned about the vast amount of undeclared reserves of Highly Enriched Uranium (HEU) held by Russia, which is outside of the scope of the existing program.

Reports vary, but it is quite possible that Russian HEU stockpiles make up the largest inventory of weapon-usable material held in the world today.

When President Obama travels to Russia this July to sign the Plutonium Material and Disposition Agreement, will he press Russian President Medvedev to declare the size and makeup of the Russian HEU reserves and press for additional down blending of that material, whether it is used in Russia or sold internationally?

Answer. Nonproliferation, and specifically, eliminating stocks of excess fissile material are key priorities of this administration. Coming to agreement on the terms of the Plutonium Management and Disposition Agreement is one important step in this effort. The President also has committed to seek further weapons reductions under a START Follow-On Treaty and to open negotiations for a Fissile Material Cut-off Treaty. Given the critical success of the DOE/NNSA HEU Transparency Program over the past 15 years to verify the disposition of over 368 metric tons of the planned 500 metric tons of Russian HEU, we would welcome the possibility of down blending additional excess Russian HEU. This HEU Transparency effort has been one of our most successful bilateral nonproliferation efforts with Russia yet in the area of tangibly eliminating weapons-derived material. However, to date the Russians have been unwilling to consider an extension beyond the 2013 end date of this program. DOE/NNSA would certainly welcome the continuation of this important effort if Russia declares additional amounts of excess HEU beyond the initial 500 metric tons in the HEU Agreement.

Question. Your budget proposes additional investment to secure weapons-grade material in Russia. Wouldn't you prefer that this material be down blended to eliminate any further threats?

Answer. We would prefer that excess material be downblended; we are already working with the Russians to downblend HEU under the Material Consolidation and Conversion project that is not of weapons origin and that has been declared excess by the Russians. We think this activity would be a way to help Russia eliminate the risks associated with this and all nuclear material, as well as avoid the associated long-term security costs. However, some Russian sites require weapons-useable HEU for their operations. In those cases, our joint intent is to protect the material as well as possible. Central storage facilities with modern security systems are a good way to improve material security.

CYBER SECURITY

Question. Mr. D'Agostino, I find it curious that the DOE Office of Electricity Transmission Delivery and Reliability received $50 million in additional funding for cyber security research and development, yet the NNSA, which has seen a tremendous increase in cyber attacks of the past years, and recently in the last several months, received no additional funding increases.

How do you explain this funding disparity?

Answer. Funding for all programs within DOE, to include NNSA is determined by the Secretary of Energy through a very prescriptive process. NNSA's cyber security requirements are first presented by the NNSA CIO to the NNSA Administrator. The Administrator, after determining the highest priority needs for NNSA, makes the final recommendation to the Secretary who makes the final corporate decision.

Question. Are you confident that the NNSA has adequate cyber protections in place to protect our national security secrets?

Answer. The threats to the national security information and classified system within the NNSA computing environment are constantly changing and represent risks to our operations. However with the technology enhancement (i.e. EnCase Enterprise) and process improvements (NNSA Policy (NAP)) NNSA have invested in over past 2 years, I believe that we have minimized the threats to the NNSA computing environment and national security information and are operating at an acceptable level of risk. NNSA's cyber security systems have benefited by external independent oversight programs, such as HSS, with activities such as network penetration testing and reviews of security plans and strategies. The Department and NNSA senior leadership will continue to monitor the threats to our computing assets along with the accompanying risks in order to make necessary changes and provide an appropriate level of protection.

SECURITY

Question. Mr. D'Agostino, several NNSA sites have suggested that funding of safeguards and security is inadequate to support the mission. Do you have any security concerns with any NNSA site or do you believe any of the NNSA sites lack sufficient funding?

Answer. The fiscal year 2010 budget request is adequate to support the core security mission and maintain the program within acceptable risk levels. At the request level, NNSA sites will be able to sustain the security baseline program and support NNSA Enterprise-wide efforts to consolidate high-security assets and reduce the overall security footprint. In fiscal year 2010, the NNSA security program will focus on improving the effectiveness and efficiency of security operations through standardization and consistency of security program implementation, and upgrades to the security systems infrastructure so as to enable the sites to maintain performance of the security mission at the same or reduced funding levels in the out-years. To this end, we are investing in improved performance assurance programs at each site, with emphasis on Federal manager oversight, and have undertaken a new initiative (Zero-Based Security Review) with the objectives of establishing clear performance expectations, and issuing consistent policy implementing guidance. NNSA sites are, and must remain, among the most well-protected facilities in the world.

NAVAL REACTORS

Question. Mr. D'Agostino, your budget proposes to move forward on an Ohio Class submarine replacement. At the same time, you have frozen progress on CMR–R and UPF and other facilities pending the outcome of the NPR.

Why not wait on the new submarine platform until the NPR is complete?

Answer. The President has reaffirmed the need to maintain a strong deterrent for the foreseeable future. To ensure there is no gap in strategic coverage when the

OHIO Class SSBNs begin to retire in 2027, we need to start concept design studies for the OHIO Class Replacement in fiscal year 2010. There are key technical and schedule drivers that require the fiscal year 2010 start so design and technology can mature to support a fiscal year 2019 ship construction schedule. Early design studies answer questions that will arise from the NPR deliberations. The design parameters under consideration are aimed at accommodating any conceivable conclusion of the NPR. The NPR will not determine the design of the submarine, but rather the number of weapons and targets. A reduction in weapons may result in fewer missile tubes per submarine; however, the total number of submarines is primarily derived from the number required at sea at any given time to provide a survivable deterrent in the regions we need to cover.

Question. How is this investment different than that of a one-of-a-kind facility such as CMR–R and UPF, both of which are necessary in order to maintain the deterrent?

Answer. There are more investment similarities than differences between the Ohio Class Replacement project and the CMR–R and UPF projects required to modernize the NNSA nuclear infrastructure. All are needed to sustain essential capabilities for the long-term and the details of NPR conclusions will not have significant impact on early design activities. Early design work is needed for all three in order to most efficiently plan for sustaining capabilities. The investment in the OHIO Class Replacement project differs from that in the CMR–R and UPF projects only in the maturity of its design. While the OHIO Class Replacement project will be starting its conceptual design in fiscal year 2010, the CMR–R and UPF projects are both currently in latter stages of preliminary design. The previous answer pointed out how OHIO Class Replacement design at its current maturity is independent of the NPR's conclusions. Although more mature, the designs of both the CMR–R and UPF projects are primarily driven by the need to maintain essential capabilities that are expected to provide an adequate capacity merely by the existence of the capability. Thus, CMR–R and UPF sizes and capacities are independent of the NPR's conclusions at expected future stockpile size ranges.

PENSION SHORTFALLS

Question. Mr. D'Agostino, The stock market down turn over the past year has significantly reduced the DOE contractor pension value. In order to make up the shortfall, contractors are required to adjust their program charges (known as the indirect rate). According to figures prepared by the Department, the average total contributions paid to DOE contractor pension plans from 2003 to 2008 was $330 million. In the future, DOE expects to pay on average $1.5 billion per year over the next 5 years. The peak contribution years are estimated to come in 2012 and 2013 at just under $2 billion per year. The lion share of the contributions coming from NNSA and Environmental Cleanup sites.

Based on this 2010 budget request, it appears that the NNSA is facing a pension shortfall of $411 million, of which $200 million was not budgeted for and will further reduce mission funding. It is my understanding that NNSA plans to deduct most of the savings out of the operating budget and delay facility closures and preventative maintenance and the consolidation of special nuclear materials.

This trend is simply unsustainable and will have a devastating impact on the weapons and nonproliferation program. Has the Department considered the program impacts on to scientific research, operations and employment levels? What actions are being taken to mitigate this problem over the next 5 years?

Answer. Because the pension payments for the Defined Benefit plans are a function of economic conditions, the number of retirees to receive benefits, and largely address legacy promises of benefits, we are very limited in what we can do now to mitigate the problem indicated by the analysis. Except for a few collective bargaining unit Plans, the NNSA M&O contractors have closed their defined benefit programs to new entrants in favor of defined contributions (401K) type of retirement plans. As a result, there is little to be done to reduce costs in the DB arena, instead NNSA and its M&O contractors are seeking ways to better address future payments.

The pension plans of DOE's M&O contractors have suffered losses in asset value similar to those in the private sector as a result of the business downtown in the past 12 months. Overall, their plans are in relatively good shape compared to the rest of industry, however, the recession coupled with new Pension Protection Act requirements has resulted in funding shortfalls for some of plans.

Additionally, our M&O contractors continue to experience fluctuations in pension liabilities, and the increased liabilities coupled with the decrease in Plan assets has resulted in a significant increase in the required contributions to pension plans at

some of our sites. NNSA is monitoring the situation to understand the projected shortfalls, and to mitigate the resulting impact on all of our mission program activities, operations and employment levels. NNSA will exercise all flexibility available during budget execution to manage site and program impacts by incentivizing operating efficiencies at the M&O contractors, by reallocating available funding to affected contractors through reprogramming of remainder funding from completed projects and programs; and by deferring or canceling lower priority activities. However, the current projections for 2011 through 2013 of about $1 billion shortfall annually in budgeted dollars, which are likely to be required to reimburse our laboratory and plant contractors for their payments to defined benefit pension plans, are beyond the ability of the NNSA to handle through increased efficiencies and limited reprogramming from remainders in project funding. If economic improvements do not materialize to mitigate these cost increases, NNSA may well be required to drastically cut back, and in some cases abandon, planned activities at our Sites resulting in the potential for significant workforce restructurings.

QUESTIONS SUBMITTED BY SENATOR LAMAR ALEXANDER

Question. The President's budget request shows no construction funding for the Uranium Processing Facility (UPF) until 2013 which puts the project 3–4 years behind schedule.

If UPF is delayed beyond its currently planned operational date of 2018, is it reasonable to assume that the Y–12 enriched uranium facilities can remain safe and reliable beyond 2018?

Answer. The President's budget request included $54,478,000 for Project Engineering and Design of UPF in order to advance the project's design, in accordance with the requirements of DOE Order 413.3A. NNSA will take the steps necessary to maintain the Y–12 enriched uranium facilities safe and reliable until UPF becomes operational. Concrete measures are being taken to reduce risk at Y–12. For instance, the Nuclear Facility Risk Reduction Project, a multi-year effort funding maintenance and limited improvements, will address the safety and reliability of uranium facilities until UPF can be built to replace those facilities. While sufficient capacity exists today, the risk of extended shutdown is unacceptably high and safety of operations remains a major concern. The Uranium Processing Facility (UPF) must be built to alleviate the risk of shutdown, reduce costs, and provide a safe working environment for our nuclear security workers. Construction of this facility is mission critical and will take at least 7 years to complete. Each year NNSA is required to take measures to mitigate the growing risks is another year longer the Nation runs the risk of losing its uranium processing capability, with a commensurate impact on its nuclear deterrent and its ability to supply the Navy with fuel.

Question. How long would it take for the UPF to pay for itself in reduced annual costs?

Answer. Based on the current preliminary project estimates, UPF's payback period is approximately 10 to 15 years. The UPF project's contribution to safety of the Y–12 site and of the public is, however, the overriding justification of the project—even if the actual payback period is found to be longer, it would not have been acceptable to continue operations in the current facilities.

Question. What is the condition of Building 9212, where the uranium enrichment work currently takes place? Is this facility viable for long-term enriched uranium mission capability?

Answer. Building 9212 is not suitable for performing long-term enriched uranium services. The enriched uranium services need to be transferred to a facility that can support long-term sustainability and meet modern industrial and nuclear safety standards. The enriched uranium services are being conducted in Building 9212, pending availability of UPF. NNSA will take the steps necessary to maintain the Y–12 enriched uranium facilities safe and reliable until UPF becomes operational. Our current uranium infrastructure is obsolete, costly, and decrepit. The risk of extended shutdown is unacceptably high, and worker safety continues to be a major concern.

Question. If there were no new nuclear weapons production or life extension, would UPF still be needed?

Answer. Yes, UPF sustains capabilities that are needed as long as the Nation has an inventory of HEU. UPF is essential to dismantling weapons to support arms controls initiatives, supporting the Naval Nuclear Reactors Program, for down-blending excess enriched uranium for non-proliferation purposes, and ultimately for power and research reactors (i.e., Accelerator Test Facility and High Flux Isotope Reactor). UPF is needed to support all stockpile activities involving the processing of Highly

Enriched Uranium (HEU), including the surveillance and dismantlement programs. Many studies conducted on the UPF design, including the recently issued Dr. Everet Beckner/TechSource Study, concluded that approximately 75 percent of the UPF is required even if no new weapon is ever built and noted that continued operations of the current facilities at Y–12 past 2020, in particular the 9212 building, would require accepting an appreciably increased safety risk.

Question. Who has reviewed the capabilities and size of the UPF facility?

Answer. The capabilities and size of UPF have been assessed both internal and external to NNSA over the past few years. First, the Y–12 project team and NNSA Headquarters led a review of UPF that included subject matter experts from across the nuclear security enterprise, including the national laboratories. Second, NNSA conducted a joint review of UPF with technical assistance provided by the United Kingdom's Aldermaston Weapons Establishment. Third and most recently, NNSA chartered an independent external review committee headed up by former Deputy Administrator for Defense Programs, Dr. Everet Beckner. As stated by Dr. Beckner in his team's final report: "Based upon our review, as will be demonstrated in the following report, I am now convinced that given the requirements as defined, a substantial change of size of the facility is not warranted at this time and the project should move forward without further delay."

Question. Can the enriched uranium mission be performed anywhere other than Y–12?

Answer. No, the uranium enrichment mission can not be accomplished at other sites without additional funding. UPF (and the facilities it replaces) are part of an integrated manufacturing operation that includes the soon-to-be-completed Highly Enriched Uranium Manufacturing Facility (HEUMF) and the non-nuclear operations of the Y–12 site. It is possible for portions of the enriched uranium mission to be met in new facilities at two alternative sites, the Savannah River Site (downblending, sweetening, reuse of material) and the Pantex Plant (surveillance, disassembly), but with differing schedules, costs, and risk levels, and with the replication at some level of the capabilities of other parts of Y–12's integrated operation. An Integrated Project Team (IPT) conducted an analysis evaluating these alternative sites and produced a report on Uranium Mission Transformation in July 2008. As part of this effort, NNSA asked the Office of the Secretary of Defense (OSD) Cost Analysis Investment Group (CAIG) to act as an independent advisor to the IPT for this comparative business case analysis. The total operations and transportation costs were lower for Y–12 than the other alternatives. A new, fully trained, and qualified workforce would also have to be established if the mission were to be performed elsewhere. Overall, the comparative risk and costs are lower for Y–12 than the alternative sites considered. The IPT concluded that the uranium mission should be retained at Y–12.

Question. Your office has been studying how best to compete the NNSA production contracts (Y-12, Pantex, and Kansas City Plant) that are expiring next year. Recently your spokesman indicated the NNSA leadership would review the work of the team, who provided analysis for this decision, over the coming months. Given you are in the window where a decision needs to be made soon if new contracts are to be put in place, can you be more specific on schedule for this action.

Answer. The acquisition strategy is in the final review process and we expect a decision in the near future. The extend/compete decisions will require Secretarial approval.

SUBCOMMITTEE RECESS

Senator DORGAN. This hearing is recessed.

[Whereupon, at 11:08 a.m., Tuesday, June 2, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 2010

THURSDAY, JUNE 18, 2009

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:59 a.m., in room SD–192, Dirksen Senate Office Building, Hon. Byron L. Dorgan (chairman) presiding.

Present: Senators Dorgan, Tester, Bennett, Cochran, Bond, and Alexander.

DEPARTMENT OF DEFENSE—CIVIL

DEPARTMENT OF THE ARMY

CORPS OF ENGINEERS—CIVIL

STATEMENT OF TERRENCE C. SALT, ACTING ASSISTANT SECRETARY OF THE ARMY

OPENING STATEMENT OF SENATOR BYRON L. DORGAN

Senator DORGAN. I'm going to call the meeting to order. This is the subcommittee of the Appropriations Committee of the United States Senate, Subcommittee on Energy and Water. Today we're going to take testimony on the fiscal year 2010 budget request for the U.S. Army Corps of Engineers and the Department of the Interior.

Testifying for the Corps will be Terrence Salt, Acting Assistant Secretary of the Army for Civil Works. Mr. Salt, congratulations on your appointment as Principal Deputy and your current assignment as Acting Assistant Secretary. I look forward to working with you and Ms. Darcy once she is confirmed on the many water resource problems that we face.

I know that you will familiarize yourself especially with North Dakota water issues and know something about some of them already, perhaps Mississippi issues as well. But those of us who serve on this subcommittee have an abiding interest in these matters.

Lieutenant General Van Antwerp, Chief of the Engineers for the U.S. Army Corps of Engineers, it's always good to see you and welcome. We appreciate your being here.

Testifying for the Department of the Interior will be Deanna Archuleta, the Acting Assistant Secretary for Water and Science at the Department. Welcome to you. Congratulations, too, on your ap-

pointment as the Deputy Assistant Secretary for Water and Science and on your current assignment as the Acting Assistant Secretary for Water and Science. I look forward to working with you and Ms. Castle once she is confirmed on many of the western water issues.

Michael Connor, Commissioner of the Bureau of Reclamation. Commissioner Connor, congratulations on your recent confirmation. We appreciate your being here and I know that you're aware I'm passionate about the issues concerning rural water supply, especially on the unmet promises for now nearly five decades in North Dakota when they built the Garrison Dam, and I know you'll be more familiar with those projects as well and perhaps already are.

The task of talking about the Corps budget is difficult because we've only had the details available for about a week. I'm talking about the detailed budget justifications. Justifications were released 5 weeks after the President released the budget to Congress, which has made it very difficult for us. Every other Federal agency got their budget justifications to Congress with the submission of the budget.

I understand that some of that delay was beyond the control of the Corps, General. For instance, I understand the budget justifications were not cleared by OMB until May 29. That was 3 weeks after the budget was released. So perhaps my real beef here is with the Office of Management and Budget. That would not be a new irritation for me.

The Corps of Engineers did not get the budget justifications on the Internet until June 11, and printed copies were not furnished until June 12, to the extent that they were printed. So we've had staff working on these issues now, but it's been difficult.

Mr. Salt, we postponed this hearing in May because those details weren't available, and I thought we might have to postpone a second time. But we're here finally at long last to talk about these various issues.

This is the second time in 4 years that this has happened, so it's not about the administration. It's about particularly OMB and the tortured mechanics that these things go through.

The President's fiscal year 2010 budget for the Corps of Engineers proposes $5.125 billion, which is $277 million below the fiscal year 2009 enacted of $5.402 billion. This is the narrowest gap that we've seen for a number of years between current enacted amount for fiscal year 2009 and the President's fiscal year 2010 budget.

When you look at the budget details on an account by account basis, the difference really is considerably larger than that. General investigations is down $68 million from the current year. General construction is down $424 million from the current year, and this certainly doesn't help us reduce the more than $67 billion backlog in unconstructed projects.

The Missouri River and tributaries is down $136 million from the current year.

O&M is one of the bright spots in the Corps budget with an increase of about $300 million. O&M has been essentially flat for a number of years, even though personnel costs have continued to rise and the inventory of Corps projects has continued to age, increasing maintenance needs.

In this case, the administration has not resorted to budget tricks, which we've seen in many previous years. I appreciate that. The O&M budget that I just described is in fact a true increase, not some mirage, and that will be helpful.

To provide even this modest O&M increase and get the other major accounts to current levels would require an additional $600 million. Now, the two major projects for the Department of the Interior under this subcommittee are the Central Utah Project Completion Act and the Water and Related Resources for the Bureau of Reclamation. Your budgets, I would say to Ms. Archuleta and Mr. Connor, are relatively flat compared to fiscal year 2009.

The Central Utah Project Completion account is proposed at the same amount as the current year, and the Bureau of Reclamation is down $55 million from the current year. A flat budget, of course, is a declining budget for your agencies. Personnel and contract costs continue to increase each year by some amount. So you're accomplishing less work when you propose a flat budget. Unfortunately, the needs for water and power in the West continue to rise.

I'm very cognizant of the very serious deficit problems we face in our Government. I'm also aware, though, that some spending is just spending, while other spending is a really important investment which provides dividends for the future. Much of the investment we make in water projects and reclamation projects produce significant deficits and great assets for this country.

So it's not escaped my notice that we really need to evaluate on a line by line basis what our needs are, what our responsibilities are, and what kinds of funding we will have available for them.

I know that you come to us today as members of the administration, destined to support and required to support the budget that has been sent to us. In fact, only in recent years on one occasion have we had someone in a complete fit of candor and unbelievable truthfulness say: No, I'm sitting here at the table and the amount of money that's been requested is far short of what is really needed. We were staggered to hear that kind of testimony, and the next morning that person was fired.

So my expectation is that you will pay fealty to the budget you're here to support today but you will hear from members of our subcommittee that in these areas of water projects and the Corps of Engineers' needs and responsibilities as well as the Bureau's responsibilities, that many of us have very significant and strong feelings about how to meet those obligations.

I want to be able to get to you so that you can give us your statements, but I want to talk just for a moment about the American Recovery and Reinvestment Act. I was surprised that the request from the administration on an economic recovery act to try to lift the country's economy, which as you know was controversial—some voted for it, some didn't—included not one penny from the administration for either of your agencies. I was pretty surprised by that.

It seems to me that if you're going to do something to substantially address infrastructure problems and put people back to work and have an asset when it's completed, one of the things you would look at would be water issues, water projects, and reclamation projects. But there wasn't any funding in the initial request.

Senator Cochran and I and others included funding in this economic recovery package for water projects, then left it to your agencies to decide how the funding that we finally put together would be distributed. We believe we gave pretty clear guidance, without earmarking, how funding should be distributed, both in the legislation as well as in report language.

But we have some concerns about how the distribution of that funding was developed behind closed doors. So we'll talk some about that today.

Let me thank you for being here. I have other things I will put in the record that describe some of our interests and some of our concerns.

Let me now call on my colleague from Mississippi, Senator Cochran, for any comments he wishes to make.

STATEMENT OF SENATOR THAD COCHRAN

Senator COCHRAN. Mr. Chairman, thank you. Thank you for convening this important hearing to review the administration's fiscal year 2010 budget request. I'm pleased to join you in welcoming this panel and to thank them for appearing here before the subcommittee today.

The Corps of Engineers has a very large presence in my State. Flood control activities on the Mississippi and Yazoo Rivers, dredging of ports on the Mississippi River and in the gulf coast region, and environmental infrastructure projects are all very important activities that affect the economic future of our State and the physical survival of our citizens.

I'm concerned that the budget we are reviewing today might not adequately address some of these most important needs. But I would like to take the opportunity to compliment the efforts of the Corps of Engineers, the Mississippi Coastal Improvements Program team, specifically in Mobile, Alabama, for completing the plan to implement hurricane mitigation projects and to restore Mississippi's barrier islands.

The plan the team has provided is a much needed project that is essential to protect the vast natural resources as well as property of the State of Mississippi and its citizens and to help protect infrastructure and commerce along the Gulf of Mexico.

General Van Antwerp, as the Chief of Engineers I know you understand it is your charge to verify the final version of this plan. It's my hope that you will be able to certify the proposal expeditiously after a careful review of its merits.

I would also like to compliment the Engineer Research and Design Center of the Army Corps of Engineers. The research undertaken at this facility is of the highest importance to our Nation and our armed forces. Once again, the center was named the Army's top research laboratory, an honor that is often bestowed on the researchers and staff in Vicksburg, Mississippi. We are very proud of all of them.

The Civil Works Division of the Army Corps of Engineers has a unique history. It's vital to our Nation's infrastructure protection and it's very important that we in Congress recognize both the importance of the work done by the Corps of Engineers and carefully review the costs and other challenges that these projects may face.

We thank you again for your cooperation with this subcommittee and I look forward to your testimony.

Senator DORGAN. Senator Cochran, thank you very much.

I wanted to make one additional point before I recognize the witnesses, and that is the question of earmarks. I'm speaking explicitly about the President's request coming through the agencies of what it is you wish to have funded—your earmarks—and the metrics that you use to determine that, and the concern that many of us have how these things change year to year. The criteria for budgetable projects switch from one year to the next, depending on the administration, and even changes inside the same administration. For example, shifting views on shore protection projects, the way major rehabilitation projects and environmental compliance activities have bounced among various accounts, rural water projects are funded one year, next they are not funded, even the way the benefit-to-cost ratio is chosen to determine budgetable projects moves up and down on the list.

Again, these are all earmarks chosen by someone, and ultimately the President. But someone in your agencies, through OMB, decides to earmark all this money and then send the earmarks to Congress and say: We've made these decisions about what our priorities are; that's how we've earmarked it; but we have our own metrics with which to make the decisions. We up here look at them and think: Well, why do those metrics change so much from one year to the next with shore protection or water projects and so on?

We don't quite understand that, and we hope that we can begin a discussion with you about how you decide on what earmarks you request, what those metrics are, and whether those metrics can perhaps see the light of day so that we understand them a bit better.

Well, let me thank all of you for being here and let me begin, Mr. Secretary, with your testimony. Terrence Salt, Acting Assistant Secretary of the Army for Civil Works, thank you for being with us.

STATEMENT OF TERRENCE C. SALT

Mr. SALT. Sir, thank you, Chairman Dorgan, Senator Cochran. Thank you for the opportunity to present the President's budget for the Civil Works Program of the Army Corps of Engineers for fiscal year 2010. I will also briefly touch on the activities related to the stimulus bill.

In developing this budget, we have sought to achieve four principal objectives: the first, to focus construction funds on those investments that provide the best return from a national perspective in achieving economic, environmental, and public safety objectives;

Second, to support the safe and reliable operations and maintenance of key existing water resources infrastructure;

Third, to improve Corps project planning and program performance;

Finally, to advance aquatic ecosystem restoration efforts, including the restoration of Louisiana's coastal wetlands and Florida's Everglades.

The budget provides funding for the development and restoration of the Nation's water and related resources within the three main

Civil Works program areas. Sir, you mentioned the commercial navigation, flood and coastal storm damage reduction, and aquatic ecosystem restoration.

Additionally, the budget supports hydropower, recreation, environmental stewardship, water supply services at existing water resource projects owned or operated by the Corps, protection of the Nation's regulated waters and wetlands, the cleanup of sites contaminated as a result of the Nation's early efforts to develop atomic weapons, and emergency preparedness and training.

As you pointed out, the total discretionary funding of $5.125 billion in the fiscal year 2010 budget is our budget and, although it is less than was previously appropriated last year, it is the highest amount ever requested by the President for the Civil Works Program.

The budget proposes enactment of legislation to authorize a lock usage fee which would, over time, replace the diesel fuel tax now paid by most commercial users of the inland and intra-coastal waterways. This proposed legislation will address the declining balance in the Inland Waterways Trust Fund. This affects the Government's ability to finance the non-Federal portion of Federal capital investment in these waterways and will do so in a way that improves economic efficiency compared to the existing fuel tax by more closely aligning the costs of those who use the Corps locks for commerce with the capital costs that the Corps incurs on their behalf.

The administration stands ready to work with the Congress and stakeholders with interests in these capital investments to help pass and implement this proposal.

The fiscal year 2010 budget continues the Civil Works Program's commitment to a performance-based approach to budgeting. The Army applied objective performance guidelines to focus construction funds on these investments within the three main mission areas of the Corps that provides the best return from a national perspective in achieving economic, environmental, and public safety objectives.

Similarly, the Army used objective performance criteria to allocate O&M funds in the fiscal year 2010 budget. The O&M criteria consider both the condition of the project and the potential consequences for project performance if the O&M activity were not undertaken in fiscal year 2010.

In fiscal year 2010, the court will focus efforts on developing new strategies along with other Federal agencies and non-Federal project partners, to better manage, protect, and restore the Nation's water and related land resources, including flood plains, flood-prone areas and related ecosystems.

I'd like to speak for a minute about the recently enacted American Recovery and Reinvestment Act, which provided $4.6 billion for the Corps' Civil Works Program. The Corps is managing these funds and successfully achieving the Recovery Act's stated purposes. Obligations and expenditures commenced in early May. Upon clearance of the Corps' project plans and lists, projects were selected based on the fundamental tenet of prudent management and investment in infrastructure and the ecosystem restoration projects that will provide long-term benefits for the Nation.

The Civil Works allocations are fully consistent with the President's direction provided in his executive memorandum of March 20, 2009, ensuring responsible spending of Recovery Act funds. Moreover, the Civil Works allocations are consistent with additional project selection criteria provided in the conference committee report accompanying the act that projects, programs, or activities that are accomplished with Recovery Act dollars will be obligated and executed quickly, will result in high immediate employment, have little schedule risk, will be executed by contract or direct hire of temporary labor, and will complete a project phase, a project, an element, or will provide a useful service that does not require additional funding.

Also, as stipulated in the Recovery Act, no funds will be used for any project that at the time of the obligation has not received appropriations provided for energy and water development—essentially no new starts.

The wide geographic distribution of projects spreads the employment and other economic benefits across the United States. Funding is also distributed across Civil Works programs to provide the Nation with project benefits related to inland and coastal navigation, the environment, flood risk management, hydropower, recreation, and more.

I'm pleased to report that as of the close of business June 12, 2009, the Corps has obligated more than $320 million, work on the ground has begun, and real progress is being made.

In conclusion, this administration has made rebuilding America's infrastructure a priority. Through resources provided for the Army Civil Works program in the President's budget for fiscal year 2010, as well as the resources provided through the stimulus bill, the Corps can help achieve this objective.

PREPARED STATEMENT

Mr. Chairman, I am proud to support this budget for the Army's Civil Works program. I look forward to working with this subcommittee and to your support of the President's budget proposals, and I welcome any questions you may have.

Thank you, sir.

[The statement follows:]

PREPARED STATEMENT OF TERRENCE C. SALT

Chairman Dorgan, Senator Bennett, distinguished members of the subcommittee, thank you for the opportunity to present the President's budget for the Civil Works Program of the Army Corps of Engineers for fiscal year 2010.

OVERVIEW

In developing this budget, we sought to achieve four principal objectives:

—Focus construction funds on those investments that provide the best return from a national perspective in achieving economic, environmental and public safety objectives;
—Support the safe and reliable operation and maintenance of key existing water resources infrastructure;
—Improve Corps project planning and program performance; and
—Advance aquatic ecosystem restoration efforts, including restoration of Louisiana's coastal wetlands and Florida's Everglades.

The budget provides funding for development and restoration of the Nation's water and related resources within the three main Civil Works program areas: commercial navigation, flood and coastal storm damage reduction, and aquatic eco-

system restoration. Additionally, the budget supports hydropower, recreation, environmental stewardship, and water supply services at existing water resources projects owned or operated by the Corps. Finally, the Budget provides for protection of the Nation's regulated waters and wetlands; cleanup of sites contaminated as a result of the Nation's early efforts to develop atomic weapons; and emergency preparedness and training. The budget does not fund work that should be the responsibility of non-Federal interests or other Federal agencies, such as wastewater treatment and municipal and industrial water treatment and distribution.

FISCAL YEAR 2010 DISCRETIONARY FUNDING PROGRAM

The total discretionary funding of $5.125 billion in the fiscal year 2010 budget is the highest amount ever requested by the President for the Civil Works program.

Within this total, $1.718 billion is budgeted for projects in the Construction account. The budget provides $2.504 billion for activities funded in the Operation and Maintenance (O&M) account.

The fiscal year 2010 budget also includes $100 million for Investigations; $248 million for Flood Control, Mississippi River and Tributaries; $41 million for Flood Control and Coastal Emergency; $190 million for the Regulatory Program; $134 million for the Formerly Utilized Sites Remedial Action Program; $184 million for the Expenses account and $6 million for the Office of the Assistant Secretary for Civil Works.

Enclosure 1 displays the current estimate for the distribution of fiscal year 2010 discretionary funding among eight appropriation accounts, eight program areas plus executive direction and management, and five funding sources including the general fund of the Treasury and trust funds. Enclosure 2 is a crosscut between appropriation accounts and program areas.

The fiscal year 2010 budget for the Civil Works program supports high performing new studies and construction starts.

The budget funds three new watershed studies: Green River Watershed, Kentucky; Ocmulgee River Watershed, Georgia; St. Louis Watershed, Missouri; and a study addressing Access to Water Data. The budget also includes $2 million for a high-priority, interagency evaluation of the Nation's vulnerability to damage from flooding, the Water Resources Priorities study, as authorized in section 2032 of the Water Resources Development Act of 2007 (WRDA 2007).

The budget also includes funding for five construction starts, namely Napa River Salt Marsh Restoration, California; Kansas City's, Missouri and Kansas flood damage reduction project; Washington, DC and Vicinity flood damage reduction project; Norfolk Harbor, Craney Island, VA; and the Bridges at Deep Creek, Virginia project on the Atlantic-Intracoastal Waterway.

Restoring Louisiana Gulf Coast Wetlands

For fiscal year 2010, the allocation for the Louisiana coastal area (LCA) has been increased by $5 million, from $20 million to $25 million in the Investigations account. Over 1 million acres of Louisiana's coastal wetlands have been lost since the 1930's; another one-third of a million acres could be lost over the next 50 years unless large-scale corrective actions are taken. A 10-year plan of studies, projects and science support was developed through a public involvement process, and working closely with other Federal agencies and the State of Louisiana. All construction activities under the plan will be subject to approval of feasibility level of detail documents by the Secretary of the Army. The increased funding level for fiscal year 2010 includes $20 million for the LCA ecosystem restoration program and reflects an accelerated schedule arising from section 7006(e)(3) of WRDA 2007. The fiscal year 2010 amount also includes $5 million for the science needed to support the ongoing effort to restore the complex coastal wetland and barrier island ecosystem of coastal Louisiana.

Storm Damage Reduction for the Louisiana Coast

The Investigations account includes $3 million for completion and review of the ongoing Louisiana Coastal Protection and Restoration (LACPR) study. The final LACPR Technical Report is scheduled to be completed at the Corps District level in late fiscal year 2009. Funding included in the fiscal year 2010 budget will be used to refine and integrate LACPR findings and outputs regarding alternative trade-offs, and coastal landscape contributions to risk management, with ongoing Hurricane Storm Damage Reduction projects and Coastal Protection and Restoration projects and to delineate comprehensive plans for higher levels of storm surge risk reduction.

Everglades

In partnership with the South Florida Water Management District and the National Park Service, the Corps is working to restore much of the unique natural ecosystem value to the Everglades. The objective of the South Florida Ecosystem Restoration Program is to restore, protect and preserve the south Florida ecosystem, including the Everglades, while providing for other water related needs of the region. In order to move the program forward, the budget for the Corps provides $214 million for fiscal year 2010, an increase of $91 million above the amount appropriated in fiscal year 2009. Within this amount, the budget would initiate or advance construction of the three authorized projects in the Comprehensive Everglades Restoration Plan: Picayune Strand, Site One Impoundment, and Indian River Lagoon—South.

INLAND WATERWAYS LEGISLATION

The budget proposes enactment of legislation to authorize a lock usage fee, which would over time replace the diesel fuel tax now paid by most commercial users of the inland and intracoastal waterways. This proposed legislation will improve the way that the Nation raises the revenue needed to cover the non-Federal share of the capital costs of inland and intracoastal waterways projects. The balance in the Inland Waterways Trust Fund (IWTF), which affects the Government's ability to finance the non-Federal portion of Federal capital investment in these waterways, has been declining since fiscal year 2002. The legislation will raise more revenue from the users and will do so in a way that improves economic efficiency compared to the existing fuel tax, by more closely aligning the costs of those who use the Corps locks for commerce with the capital costs that the Corps incurs on their behalf. The administration stands ready to work with the Congress and stakeholders with interest in these capital investments to help pass and implement this proposal. The amount provided in the fiscal year 2010 budget for construction and rehabilitation of projects on the inland waterway system, $85 million, has been constrained to ensure that necessary funding will be available in the IWTF under current law, in the event that the proposed legislation is not in place prior to the beginning of fiscal year 2010.

OTHER INITIATIVES

Response to Climate Change at Corps Facilities

The Corps is working, along with other Federal agencies, to address the implications of climate change, which has the potential to affect the way in which the Corps manages its projects. The fiscal year 2010 budget includes $5 million in the O&M account to initiate a program to develop and begin implementing practical, nationally consistent, and cost-effective approaches and policies to reduce potential vulnerabilities to water infrastructure resulting from climate change.

Nationwide Evaluation of Hydropower Rehabilitation

The budget includes $2 million in the O&M account to conduct a nationwide assessment of the Corps hydropower program. This initiative will help to develop a long-term programmatic investment strategy based on a national approach to prioritizing hydropower replacement studies and projects.

Low Commercial Use Navigation Pilot Project

The budget emphasizes the safe and reliable operation of key infrastructure assets that are of central importance to the Nation, including federally maintained channels and harbors that support high volumes of commercial commerce. From a national perspective, projects that no longer carry significant commercial traffic nor serve to meet subsistence or safety needs have a lower priority. However, many of these low commercial use projects remain important locally to the people that they serve.

The fiscal year 2010 budget includes a $1.5 million pilot project in the O&M account to develop and encourage alternate non-traditional ways to fund maintenance of low commercial use harbors and waterways. The pilot project would focus on the Atlantic Coast and Chesapeake Bay in the North Atlantic and South Atlantic Divisions of the Corps. It will identify the universe of Federal harbors and inland waterway segments that support lower levels of commercial use and their respective non-Federal sponsors. The project will also formulate a range of possible long-term options for the funding and management of such facilities, evaluate the pros and cons of these options, and examine their applicability to the various types of low use navigation projects. This initiative also envisions that more regional general permits

will be developed through the Corps' Regulatory Program to streamline efforts by non-Federal entities to accomplish the maintenance of these channels harbors.

PLANNING IMPROVEMENTS AND PERFORMANCE-BASED BUDGETING

The Army continues working through the Chief of Engineers to strengthen and improve the planning expertise of the Corps, including greater support for planning Centers of Expertise, better integration of project purposes, and greater reliability of cost estimates and schedules in both planning and programming processes. These efforts have already begun and will ultimately improve all of our project reports.

The fiscal year 2010 budget continues the Civil Works program's commitment to a performance-based approach to budgeting. Competing investment opportunities for studies, design, construction, and operation and maintenance were evaluated using multiple metrics. The Army used and will continue to use objective, performance criteria to guide its recommendations on the allocation of funds.

The Army applied objective performance guidelines to its many competing construction projects in order to establish priorities among them and to guide the allocation of funds to high-performing ongoing projects and high-performing new construction starts. These guidelines focus construction funds on those investments within the three main mission areas of the Corps that provide the best return from a national perspective in achieving economic, environmental, and public safety objectives. Similarly, the Army used objective performance criteria to allocate O&M funds in the fiscal year 2010 budget. The O&M criteria consider both the condition of the project and the potential consequences for project performance if the O&M activity were not undertaken in fiscal year 2010.

In fiscal year 2010 the Corps will focus efforts on developing new strategies, along with other Federal agencies and non-Federal project partners, to better manage, protect, and restore the Nation's water and related land resources, including floodplains, flood-prone areas, and related ecosystems. The Corps also will continue to pursue management reforms that improve project cost and schedule performance to ensure the greatest value from invested resources, while strengthening the accountability and transparency of the way in which taxpayer dollars are being spent.

AMERICAN RECOVERY AND REINVESTMENT ACT

The American Recovery and Reinvestment Act provided $4.6 billion for the Civil Works program. That amount included $2 billion for the Construction account; $2.075 billion for O&M account; $375 million for Flood Control, Mississippi River and Tributaries; $25 million for Investigations; $25 million for the Regulatory Program; and $100 million for the Formerly Used Sites Remedial Action Program. Economists estimate the Corps' Recovery Act appropriation will create or maintain approximately 57,400 direct construction industry jobs and an additional 64,000 indirect and induced jobs in firms supplying or supporting the construction and the businesses that sell goods and services to these workers and their families.

The Corps will manage and expend these funds so as to achieve the Recovery Act's stated purposes, including both commencing expenditures as quickly as possible consistent with prudent management and investing in infrastructure and ecosystem restoration that will provide long-term benefits. The Civil Works allocations also are fully consistent with the President's direction provided in the Executive Memorandum of March 20, 2009—Ensuring Responsible Spending of Recovery Act Funds. In that Memorandum, the President directed agencies to ensure that Recovery Act funds are spent responsibly and transparently and that projects are selected on merit-based principles.

Moreover, the Civil Works allocations are consistent with additional project selection criteria provided in the Conference Committee report accompanying the act that projects, programs or activities that are accomplished with Recovery Act dollars will be obligated and executed quickly; will result in high, immediate employment; have little schedule risk; will be executed by contract or direct hire of temporary labor; and will complete a project phase, a project, an element, or will provide a useful service that does not require additional funding. Also as stipulated in the Recovery Act, no funds will be used for any PPA that, at the time of the obligation, has not received appropriations provided for Energy and Water Development.

The Corps selected approximately 170 activities in the Construction account, 520 in the Operation and Maintenance account, 45 in the Mississippi and Tributaries account, 70 in the Investigations account, and 9 in the FUSRAP account. These activities mostly involve the funding of work under a single contract, though in some cases projects or useful increments of projects will be completed.

The wide geographic distribution of projects spreads the employment and other economic benefits across the United States. Funding also is distributed across Civil

Works programs to provide the Nation with project benefits related to inland and coastal navigation, the environment, flood risk management, hydropower, recreation, and more.

CONCLUSION

The administration has made rebuilding America's infrastructure a priority. Through resources provided for the Army Civil Works program in the President's budget for fiscal year 2010, the Corps can help achieve this objective. We seek to apply 21st century technological advances to present day challenges, while protecting and restoring significant ecological resources.

Mr. Chairman, I am proud to support the fiscal year 2010 budget for the Army Civil Works program. I look forward to working with this subcommittee and to your support of the President's Budget proposals. Thank you.

ENCLOSURE 1

DEPARTMENT OF THE ARMY—CORPS OF ENGINEERS—CIVIL WORKS BUDGET SUMMARY, FISCAL YEAR 2010

	Amount
Requested New Appropriations by Account:	
Investigations	$100,000,000
Construction	[1] 1,718,000,000
Operation and Maintenance	[2] 2,504,000,000
Regulatory Program	190,000,000
Mississippi River and Tributaries	248,000,000
Expenses	184,000,000
Flood Control and Coastal Emergencies	41,000,000
Formerly Utilized Sites Remedial Action Program	134,000,000
Office of the Assistant Secretary	6,000,000
TOTAL	5,125,000,000
Sources of New Appropriations:	
General Fund	(4,204,000,000)
Harbor Maintenance Trust Fund	(793,000,000)
Inland Waterways Trust Fund	(85,000,000)
Special Recreation User Fees	(43,000,000)
TOTAL	(5,125,000,000)
Additional New Resources:	
Rivers and Harbors Contributed Funds	[3] 369,000,000
Coastal Wetlands Restoration Trust Fund	[4] 86,000,000
Permanent Appropriations	9,000,000
TOTAL ADDITIONAL NEW RESORCES	464,000,000
TOTAL PROGRAM FUNDING	5,589,000,000

[1] Includes $85,000,000 from the Inland Waterways Trust Fund.
[2] Includes $793,000,000 from the Harbor Maintenance Trust Fund and $43,000,000 in Special Recreation User Fees.
[3] Cost Sharing contributions required by law for budgeted work financed 100 percent by non-Federal interest.
[4] Transferred from the Sport Fish Restoration Account of the Aquatic Resources Trust Fund for planning, protection, and restoration of coastal wetlands in the State of Louisiana.

Senator DORGAN. Mr. Salt, thank you very much. We appreciate your being here today.

General Robert L. Van Antwerp, the Chief of Engineers for the U.S. Army Corps of Engineers. Thank you for being here, General. You may proceed.

Let me just make the point that the written testimony that you have submitted will be made a part of the permanent record and you may summarize.

STATEMENT OF LIEUTENANT GENERAL ROBERT VAN ANTWERP, CHIEF OF ENGINEERS

General VAN ANTWERP. Thank you very much, Chairman Dorgan. It's great to see you again and thanks for the opportunity to testify on the fiscal year 2010 President's budget.

I'd like to just set a couple of data points before I talk about the budget. For the Corps of Engineers, by the end of this year we'll have over $40 billion obligated under contract. It's the largest in the history of the Corps and we're celebrating our 234th birthday on June 16. So it is really a historic time in the Corps.

In order to get this work done, we need to hire 3,300 people, and we are about halfway there. For the Recovery Act, those will be temporary hires and contracts. For the regular program, of which of that $40 billion, $10 billion of that will be in the Civil Works area that will be under contract by the end of this year. So this is a very, very exciting time.

A couple of other data points, the dams that are owned and operated by the Corps number 650. There are 10 of those dams that are in this budget for construction, for dam safety. We have over 12,000 miles of inland waterways that we're responsible for owning and operating. That really constitutes a lot of what enables the shipping industries to get goods to market.

We have 241 lock chambers at 195 different sites. Most of those were built about 52 years ago. In fact, the average is 52.5 years old for those lock chambers. So a lot of that O&M goes to getting at some of those facilities that greatly need that effort.

We have 926 harbors that are maintained by the Corps of Engineers. The amount of dredging material on a given year averages over 200 million cubic yards. Of course, the disposal of that and the beneficial use of that dredged material is of great concern to us, and we want to use that in the most beneficial manner.

We have over 11,000 miles of levees. Actually, that only constitutes about 16 percent of the levees in this country. Most of the Nation's levees are agricultural levees and others. But 16 percent of them are built and controlled by the Corps.

We have 75 generating plants in hydropower. We generate about 24 percent of the U.S. hydropower.

Then finally, just a data point, we had 370 million visitors to our project sites last year. It's really a great opportunity for recreation for the people of America.

This is a performance-based budget. It completes 10 projects, 4 in navigation, 6 are in flood and coastal storm damage reduction. Just broken down by percentage of this budget, 11 percent of the budget went for environmental things, 35 percent for navigation, and 32 percent for flood and coastal storm damage reduction.

In the construction program, it funds 93 construction projects, including the 10 dam safety that I mentioned, 9 projects that address significant risk to human safety, and 8 are project completions. There are five new starts in this budget.

The O&M, as you've mentioned, is a 14 percent increase and this is much needed because of the age of a lot of those facilities.

I want to give just a quick update on New Orleans. We're on track to make the 2011 hurricane season with the 100-year storm protection.

Just a quick word on Iraq and Afghanistan, over the course of the years we have deployed more than 10,000 people over there. A couple of weeks ago we had our first civilian death. So there has been mourning, but we are taking care of that family and doing what's right there.

PREPARED STATEMENT

Finally on the Recovery and Reinvestment Act, we anticipate by the end of this year, September 30, 2009, we'll have 45 percent of that $4.6 billion obligated. It constitutes more than a thousand contract actions altogether.

Sir, thank you for the opportunity to be here this morning and I look forward to the questions.

[The statement follows:]

PREPARED STATEMENT OF LIEUTENANT GENERAL ROBERT VAN ANTWERP

Mr. Chairman and distinguished members of the subcommittee, I am honored to be testifying before your subcommittee today, along with the Acting Assistant Secretary of the Army (Civil Works), Mr. Terrence Salt, on the President's fiscal year 2010 budget for the United States Army Corps of Engineers' Civil Works Program.

My statement covers the following 5 topics:

—Summary of Fiscal Year 2010 Program Budget
—Investigations Program
—Construction Program
—Operation and Maintenance Program
—Value of the Civil Works Program to the Nation

SUMMARY OF FISCAL YEAR 2010 PROGRAM BUDGET

Introduction

The fiscal year 2010 Civil Works budget is a performance-based budget, which makes the best use of available funds through a focus on the projects and activities that provide the highest economic and environmental returns on the Nation's investment or address significant risk to human safety. The Civil Works budget consists of a discretionary funding request of $5.125 billion and mandatory funding of $464 million, for a total direct program of $5.589 billion. In addition, Reimbursable Program funding, work that the Corps does for other agencies and entities with those agencies' and entities' funds, will be approximately $2.5 billion.

Direct Program

The budget reflects the administration's commitment to the sound management of the Nation's water resources. The budget incorporates objective performance-based metrics for the construction and the operation and maintenance programs, and for proposed projects undergoing preconstruction engineering and design. It provides a high level of funding for maintenance, with a focus on those facilities that are of central importance to the Nation. It provides funding for the regulatory program to protect the Nation's waters and wetlands, and supports restoration of aquatic ecosystems. Additionally, it emphasizes the need to fund emergency preparedness and training activities for the Corps as part of the regular budget process.

Reimbursed Program

Through the Interagency and Intergovernmental Services Program we help non-DOD Federal agencies, State, local, and tribal governments, and other countries with technical assistance in the areas of planning, engineering and construction. Rather than develop an internal workforce to oversee large design and construction projects, these entities utilize the skills and talents that we bring to our own Civil Works and Military Program missions. Our support is primarily through the development of contracts with private sector firms to perform technical assistance and management of engineering, environmental, and construction projects. This portion of our work is totally reimbursed by the agencies and entities that seek our assistance.

Currently, we provide reimbursable support for about 70 Federal agencies and several State and local governments. Total reimbursement for such work in fiscal

year 2010 is projected to be approximately $2.5 billion. The exact amount will depend on the extent of fiscal year 2010 assignments.

INVESTIGATIONS PROGRAM

The budget for the investigations program would enable the Corps to evaluate and design the future projects that are most likely to be high-performing, within the Corps three main missions: Commercial navigation, flood and storm damage reduction, and aquatic ecosystem restoration. The budget includes $100 million for these and related activities in the Investigations account and $2.084 million in the Mississippi River and Tributaries account.

This year the budget includes three new watershed studies, Ocmulgee River Basin Watershead, Georgia; Green River Watershed, Kentucky; and St. Louis Missouri River Watershed, Missouri; and a study addressing Access to Water Data. The budget also includes $2 million for a high-priority, interagency evaluation of the Nation's vulnerability to damage from flooding, the Water Resources Priority study, as authorized in section 2032 of the Water Resources Development Act of 2007 (WRDA 2007).

CONSTRUCTION PROGRAM

The fiscal year 2010 budget includes $1.718 billion in discretionary funding in the Construction account and $87.343 million in the Mississippi River and Tributaries account to further this objective.

The budget funds 93 construction projects, including 10 dam safety assurance, seepage control, and static instability correction projects, 9 projects that address a significant risk to human safety, and 8 project completions. Also, the budget provides significant funding for Corps aquatic ecosystem restoration efforts in South Florida including the Everglades, and in the Columbia River Basin and the Missouri River Basin, where this work supports the continued operation of Corps of Engineers multi-purpose projects by meeting the requirements of the Endangered Species Act.

This budget includes funding for five new, high performing, construction projects. These include Washington, DC and vicinity flood risk reduction project; the Deep Creek Bridge Replacement, Virginia project on the Atlantic-Intercostal Waterway; the Norfolk Harbor, Craney Island, Virginia project; the Kansas City, Missouri and Kansas City, Kansas flood risk reduction project; and the Napa River Salt Marsh, California environmental restoration project.

The budget uses objective performance measures to establish priorities among projects, and through continued proposed changes in the Corps contracting practices, that will also increase control over future costs. The performance measures used include the benefit-to-cost ratios for projects whose primary outputs are economic and are measured by economic returns. The selection process also gives priority to dam safety assurance, seepage control, static instability correction, and to projects that address a significant risk to human safety. Under each of these criterions, resources are allocated based on performance. This approach significantly improves overall program performance.

OPERATION AND MAINTENANCE PROGRAM

As soon as the Corps constructs a project, the infrastructure begins to age. Generally, with periodic maintenance, we can operate our facilities for many years. The budget supports our continued stewardship of this infrastructure by focusing funding on key infrastructure that is of central importance to the Nation.

The Operation and Maintenance (O&M) program for the fiscal year 2010 budget includes $2.504 billion in the O&M account and an additional $158.573 million under the Mississippi River and Tributaries program. The Corps used objective performance criteria to allocate operation and maintenance funds to facilities. These criteria considered both the condition of the project and the potential consequences for project performance if the O&M activity is not undertaken in the 2010 budget. The focus is on the maintenance of key commercial navigation, flood and storm damage reduction, hydropower, and other facilities. Specifically, the operation and maintenance program supports completed works owned or operated by the Corps of Engineers. Other work to be accomplished includes dredging, repair, aquatic plant control, removal of sunken vessels, monitoring of completed coastal projects, and operation of structures and other facilities, as authorized in the various River and Harbor, Flood Control, and Water Resources Development Acts.

VALUE OF THE CIVIL WORKS PROGRAM TO THE NATION

We are privileged to be a part of an organization that directly supports the Nation's infrastructure. The way in which we manage our water resources can improve the quality of our citizens' lives and the environment in which we live.

For example, Corps personnel from across the Nation continue to re-construct and improve the storm damage reduction system for New Orleans. Their work will reduce the risk of damage from future storms to people and communities.

Research and Development

The Research and Development Program for the Civil Works Program provides innovative engineering products, some of which can have applications in the private sector and in the military infrastructure sphere as well. By creating products that improve the efficiency and competitiveness of the Nation's engineering and construction industry and providing more cost-effective ways to operate and maintain infrastructure, Civil Works program research and development contributes to the national economy.

CONCLUSION

The Corps of Engineers is committed to staying at the leading edge of service to the Nation. We're committed to change that ensures an open, transparent, and performance-based Civil Works Program.

Thank you, Mr. Chairman and members of the subcommittee. This concludes my statement.

Senator DORGAN. General, thank you. We appreciate your being here and your testimony.

DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

STATEMENT OF DEANNA ARCHULETA, ACTING ASSISTANT SECRETARY FOR WATER AND SCIENCE

ACCOMPANIED BY REED R. MURRAY, PROGRAM DIRECTOR, CENTRAL UTAH PROJECT COMPLETION ACT OFFICE

Senator DORGAN. Next we'll hear from Acting Assistant Secretary Deanna Archuleta. Thank you very much. You may proceed.

Ms. ARCHULETA. Thank you. Thank you, Mr. Chairman, Senators, subcommittee members. Thank you for the opportunity to appear before you in support of the President's fiscal year 2010 budget request for Bureau of Reclamation and the Central Utah Project Completion Act. With me today are Mike Connor, Commissioner of Bureau of Reclamation, and additionally we have Reed Murray, the Director of the Central Utah Project Completion Act office, should you have any questions regarding that program.

I have submitted written testimony which presents a detailed summary of the Department's appropriation request. Today I would like to highlight the Department's 2010 priorities and touch briefly on Reclamation and the Central Utah Project request, before turning it over to Commissioner Connor for a more detailed discussion on Reclamation's request.

The Department of the Interior's mission is complex and multifaceted. Our program's missions stretch from the North Pole to the South Pole, across 12 different time zones, from the Caribbean to the Pacific Rim. Nearly every American lives within 1 hour driving distance from either our lands, our waters, all of which are managed by the Department of the Interior. As Secretary Salazar has said, the Department of the Interior is truly the Department of America.

Our fiscal year 2010 budget of $12.1 billion will position us to provide enduring benefits to the American people by maximizing our opportunities to realize the potential of our lands, our waters, our resources, and our people. As you know, the Department has released a detailed implementation plan for $3 billion appropriated in the American Reinvestment and Recovery Act, which provided $1 billion for programs funded by this subcommittee. The Department, Reclamation, and the Central Utah Project Completion Act programs are moving expeditiously with our customers to invest those funds, which will quickly provide jobs and stimulate the economy.

The fiscal year 2010 budget request for the Department of the Interior focuses on creating new energy frontiers, tackling climate change impacts, including the emphasis on water conservation, protecting America's treasures, and establishing a 21st Century Youth and Conservation Corps. And our fiscal year 2010 budget also as-

sumes commitment to restoring the integrity of our Government to Government relationships with our Indian tribes and empowering our Native American communities.

This is an overwhelming need to tackle climate change impacts. The key aspects of climate impacts, particularly in the West, are an increased variability of our water supplies. Our fiscal year 2010 Reclamation budget is proposing water conservation initiatives of $46 million, which will take significant steps toward addressing western water issues through three ongoing programs: an expansion of our water conservation challenge grant program, Reclamation's basin study program, and the title 16 water reclamation and reuse program. Through these programs, Reclamation will provide competitive grants for water marketing and conservation projects, basin wide planning studies that will address impacts of climate change and continued funding of water reuse and recycling projects.

With regards to the programs under the jurisdiction of this subcommittee, the fiscal year 2010 request for Bureau of Reclamation and the Central Utah Project Completion Act is $1.1 billion. I will defer to Commissioner Connor to discuss the details of Reclamation's request, but note that their 2010 proposals support managing, developing, protecting water and the related resources in an environmentally and economically sound manner.

Reclamation continues to strive for the highest levels of service to the American people and the highest levels of management excellence.

The request for implementation for the Central Utah Project Completion Act is $42 million. The fiscal year 2010 funding provides funding for design, construction, and features of the Utah lake system, continues to implement water management improvement projects, as well as implementing fish, wildlife, and recreation mitigation, as well as other conservation projects.

Through the Department's fiscal year 2010, we have a tremendous opportunity to improve the future of our children and our grandchildren with wise investments in clean energy, climate impacts, treasured landscapes, our youth, and the empowerment of Native Americans.

PREPARED STATEMENTS

I appreciate the strong support this subcommittee has given the Department, in particular to the Bureau of Reclamation and to the Central Utah Project. I look forward to working with all of you in advancing those goals of all of our programs and would be happy to answer any questions you may have.

[The statements follow:]

PREPARED STATEMENT OF DEANNA ARCHULETA

Mr. Chairman, Mr. Bennett, and members of this subcommittee, I am pleased to appear before this subcommittee today to discuss the President's fiscal year 2010 budget for the Department of the Interior and to update you on progress in implementing our fiscal year 2009 programs.

The Department of the Interior's mission is complex and multifaceted. Our programs and mission stretch from the North Pole to the South Pole and across 12 time zones, from the Caribbean to the Pacific Rim. Our extensive mandate rivals any government agency in its breadth and diversity—and its importance to the everyday lives of Americans.

Interior manages 500 million acres or about 1 in every 5 acres in the United States, including 391 national park units, 550 wildlife refuges, the 27 million-acre National Landscape Conservation System, and other public lands. These places are treasured landscapes and serve as economic engines for tourism and growth opportunities for recreation, wildlife conservation, and responsible resource use.

The Department's public lands and 1.7 billion acres on the Outer Continental Shelf supply nearly one-third of the Nation's domestic energy production. These resources are vital to the Nation's energy security and provide economic returns to the Nation. In fiscal year 2010, an estimated $14.0 billion in revenues will be generated from these lands and waters.

The Department fulfills its special responsibilities to Native Americans managing one of the largest land trusts in the world including over 56 million acres held in trust for Indian tribes and individual Indians, over $3.4 billion of funds held in over 2,700 tribal trust accounts, and over 380,000 open individual Indian Money accounts. The Bureau of Indian Education school system provides services to approximately 42,000 students in 23 States attending 183 elementary and secondary schools and supports 30 tribally controlled community colleges, universities, and post-secondary schools.

THE FIRST 100 DAYS

Recently, President Obama and Secretary Salazar marked their first 140 days in office. It has been an exciting time as Secretary Salazar has begun to change how the Department of the Interior does business. He has already implemented changes to improve accountability, transparency, and ethical reform; established a vision for a new energy frontier that will help to produce and transmit renewable energy from our public lands; set an agenda for protecting America's open spaces and treasured landscapes with stewardship based on sound science; began strengthening the government-to-government relationship with Indian tribes; announced a new 21st Century Youth Conservation Corps; and implemented the President's economic recovery plan.

The Department has released detailed implementation plans for $3 billion appropriated in the American Recovery and Reinvestment Act that could significantly improve the safety and energy efficiency of our facilities; the reliability of our water infrastructure; and habitat for wildlife including endangered species.

Thanks to your support, the Recovery Act provided $1 billion for the programs funded by this subcommittee.

The Department, Reclamation and the Central Utah Project Completion Act program are moving expeditiously with our customers to invest funds appropriated by the Recovery Act in projects which will quickly provide jobs and stimulate the economy. As Secretary Salazar announced on April 15, $945.2 million is being devoted to Reclamation recovery projects in six program investments areas:

—Meeting Future Water Supply Needs—$450.9 million
—Infrastructure Reliability and Safety—$164.5 million
—Environmental/Ecosystem Restoration—$236.3 million
—Green Buildings—$13.5 million
—Water Conservation Initiative (Challenge Grants)—$40.0 million
—Emergency Drought Relief—$40.0 million

As permitted by the Recovery Act, $50.0 million is being transferred to the Department's Central Utah Project Completion Act for work that includes continuing construction of both the Spanish Fork Canyon Pipeline and the Spanish Fork—Provo Reservoir Canal Pipeline, as well as the construction of the Big Springs Fish Hatchery for the Ute Indian Tribe. Finally, as permitted by the statute, $4.8 million is being set aside for management and oversight.

OVERVIEW OF THE FISCAL YEAR 2010 BUDGET

The fiscal year 2010 Interior budget request for current appropriations is $12.1 billion, $802.0 million or 7.1 percent above the level enacted by Congress for fiscal year 2009. This comparison excludes $3 billion enacted in the Recovery Act. Permanent funding that becomes available as a result of existing legislation, without further action by the Congress, will provide an additional $6.1 billion, providing a total of $18.2 billion for Interior in fiscal year 2010.

The request for the Bureau of Reclamation and the Central Utah Project Completion Act, funded under the jurisdiction of this subcommittee, is $1.2 billion for net discretionary funding. This is a decrease of $37.4 million below the level enacted for fiscal year 2009. This comparison excludes $1 billion in enacted Recovery Act funding. The fiscal year 2010 Reclamation discretionary budget request is $985.6 million in current appropriations and the request for the Central Utah Project is $42.0 mil-

lion, the same as fiscal year 2009 enacted. The decreases in Reclamation are primarily in title XVI and rural water, areas that received significant increases through the Recovery Act ($135 million for title XVI and $200 million for rural water projects) and through earmarks in fiscal year 2009. These decreases are also somewhat offset by fiscal year 2010 increases for the new Water Conservation Initiative, the dam safety program, the Central Valley Project, and increases in several other programs.

TACKLING CLIMATE IMPACTS

There is an overwhelming need to tackle climate change impacts. With lands that range from the Arctic to the Everglades, Interior's managers expect to observe the sometimes dramatic effects of a changing climate, including thawing permafrost and melting glaciers, changes in precipitation patterns, and sea level rise. In this dynamic context, Interior managers need information, tools, and resources to measure, understand, and respond to on-the-ground impacts. As the largest land manager in the Nation, Interior is positioned to pioneer adaptive management approaches to address the effects of climate change.

WATER CONSERVATION INITIATIVE

A key aspect of climate impacts, particularly in the West, is increased variability of water supplies. The request includes funding for a comprehensive water conservation program focused on expanding and stretching limited water supplies in the West to reduce conflict, facilitate solutions to complex water issues, and meet the growing needs of expanding municipalities, the environment, and agriculture.

The Department of the Interior has an important role to play in providing leadership and assistance to States, tribes, and local communities to address these competing demands for water. In fiscal year 2010, Reclamation is proposing a Water Conservation Initiative (WCI), at $46 million, which will take a significant step toward addressing western water issues through three ongoing programs. The WCI includes: (1) an expanded Water Conservation Challenge Grant Program (increased by $26 million over fiscal year 2009); (2) Reclamation's Basin Study Program; and (3) the title XVI Water Reclamation and Reuse Program. Through these programs, Reclamation will provide competitive grants for water marketing and conservation projects, and basin-wide planning studies that will provide projections of future water supply and demand on a basin-wide scale and address the impacts of climate change and drought.

The Bureau of Reclamation's fiscal year 2010 net discretionary budget request of $1.0 billion is offset by $35.1 million in funds from the Central Valley Project Restoration Fund. This request supports Reclamation's mission of managing, developing, and protecting water and related resources in an environmentally and economically sound manner in the interest of the American people. The budget emphasizes reliable water delivery and power generation by requesting more than $427.2 million to fund operation, maintenance, and rehabilitation activities at Reclamation facilities.

To address important infrastructure funding needs, the budget includes an increase of $13.6 million for the Bureau of Reclamation's Safety of Dams program. This will allow the Bureau to address corrective actions at Folsom Dam and other high priority projects.

Reclamation is currently developing programmatic criteria for a Rural Water Program as required under the Reclamation Rural Water Supply Act of 2006. Reclamation expects to begin appraisal level studies in fiscal year 2009. The fiscal year 2010 budget includes $64.0 million for seven ongoing authorized rural water projects. Within this, $48.7 million supports the administration's commitment to complete seven ongoing authorized rural water projects including ongoing municipal, rural and industrial systems for the Pick Sloan-Missouri Basin Program—Garrison Diversion Unit in North Dakota; the Mni Wiconi and Perkins County in South Dakota, Lewis and Clark in South Dakota, Iowa, and Minnesota; Ft. Peck and North Central Mountain/Rocky Boys in Montana; and Jicarilla in New Mexico. Funding for the required operations and maintenance component of rural water projects is $15.3 million for fiscal year 2010. For the construction component, Reclamation allocated funding based on objective criteria that gave priority to projects nearest to completion and projects that serve tribal needs.

The $54.2 million budget for Animas-La Plata provides for directional drilling and pipeline construction on the Navajo Nation Municipal Pipeline, the first fill of Lake Nighthorse and construction of County Road 211 relocation will continue.

The Bureau will complete removal of the Savage Rapids Dam in fiscal year 2010. The budget includes $23.7 million for the Middle Rio Grande project to continue to

focus on the protection and recovery of the silvery minnow and southwestern willow flycatcher.

The fiscal year 2010 request includes $2.0 million for the Bureau of Reclamation and $2.0 million for the U.S. Fish and Wildlife Service to further assess the costs and benefits of removing PacifiCorp's four dams on the Lower Klamath River. These studies will be conducted by Reclamation and FWS in coordination with BLM, BIA, the U.S. Forest Service, and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service. The results of the study will be used by the Federal Government to determine if the potential benefits outweigh the costs of dam removal. Consideration will be given to the liabilities, environmental risks, and effects on downstream resources resulting from dam removal.

The budget request for CALFED is $31.0 million, continuing implementation of priority activities that will resolve water conflicts in the Bay-Delta of California. Funds will be used for water storage, the conveyance program, water recycling and conservation, the science program, water quality assurance investigations, ecosystem restoration projects, and the oversight function to ensure program balance and integration.

PICK SLOAN LEGISLATIVE PROPOSAL (BUREAU OF RECLAMATION)

The fiscal year 2010 budget request for Reclamation is accompanied by a proposal that will affect receipt levels in fiscal year 2010 and in future years. This proposal will be transmitted separately from the budget for consideration by congressional authorizing committees. The proposal is for a reallocation of the repayment of capital costs for the Pick-Sloan Missouri Basin program.

CONCLUSION

Thank you for the opportunity to testify on behalf of the President's fiscal year 2010 budget request for the Department of the Interior. I want to reiterate my appreciation for the long-standing support of this subcommittee. Our fiscal year 2010 budget will—in its entirety—make a dramatic difference for the American people. We have a tremendous opportunity to improve the future for our children and grandchildren with wise investments in clean energy, climate impacts, treasured landscapes, our youth, and the empowerment of Native Americans. This concludes my overview of the fiscal year 2010 budget proposal for the Department of the Interior and my written statement. I will be happy to answer any questions that you may have.

PREPARED STATEMENT OF REED R. MURRAY

My name is Reed Murray. I serve as the Program Director of the Central Utah Project Completion Act Office under the Assistant Secretary—Water and Science in the Department of the Interior. I am pleased to provide the following information about the President's fiscal year 2010 budget for implementation of the Central Utah Project Completion Act.

The Central Utah Project Completion Act, titles II–VI of Public Law 102–575, provides for completion of the Central Utah Project (CUP) by the Central Utah Water Conservancy District. The act also authorizes funding for fish, wildlife, and recreation mitigation and conservation; establishes an account in the Treasury for deposit of these funds and other contributions; establishes the Utah Reclamation Mitigation and Conservation Commission to coordinate mitigation and conservation activities; and provides for the Ute Indian Rights Settlement.

The act provides that the Secretary may not delegate his responsibilities under the act to the Bureau of Reclamation. As a result, the Department has established an office in Provo, Utah, with a Program Director to provide oversight, review and liaison with the District, the Mitigation Commission, and the Ute Indian Tribe, and to assist in administering the responsibilities of the Secretary under the act.

The 2010 request for the Central Utah Project Completion Account provides $42.0 million for use by the District, the Mitigation Commission, and the Department to implement titles II–IV of the act. The project is currently scheduled to be completed by 2021.

The fiscal year 2010 request for the District includes $37.7 million to fund the designs, specifications, land acquisition, and construction of the Utah Lake System ($30.8 million); to implement water conservation measures ($5.9 million); and to implement groundwater conjunctive use projects ($1.0 million).

The request includes $1.5 million for the Mitigation Commission. Approximately $1.2 million will be used to implement the fish, wildlife, and recreation mitigation

and conservation projects authorized in title III. The Commission will use the remaining portion ($271,200) for completing mitigation measures committed to in pre-1992 Bureau of Reclamation planning documents.

Finally, the request includes $2.8 million for the Program Office for operation and maintenance costs associated with instream flows; $1.1 million for fish hatchery facilities; and $1.7 million for program administration.

In conclusion, we appreciate the opportunity to testify before the subcommittee and would be happy to respond to any questions.

Senator DORGAN. Madam Secretary, thank you very much for being here.

Commissioner Connor, welcome. You may proceed.

STATEMENT OF MICHAEL L. CONNOR, COMMISSIONER

ACCOMPANIED BY BOB WOLF, DIRECTOR OF PROGRAM AND BUDGET

Mr. CONNOR. Thank you, Mr. Chairman.

Mr. Chairman, Senator Bond, Senator Alexander, thank you for the opportunity to appear before you today in support of the President's fiscal year 2010 budget request for the Bureau of Reclamation. With me today is Bob Wolf, who is our Director of Program and Budget.

Mr. Chairman, I'd just like to say it's very much a pleasure for me to be here at the witness table today. But as I told Roger and Scott earlier, I'm soon to find out that it's much more comfortable to do these hearings behind the dais, I think, than where I am today.

The fiscal year 2010 discretionary budget request for Reclamation is $986 million. I have submitted written testimony. In the interest of time, as well as the fact that as a former Senate staff member, I should know the value of brevity, I'll quickly summarize three areas of the budget that we want to focus on. I also want to talk a little bit about Secretary Salazar's Water Conservation Initiative, which the Assistant Secretary just mentioned.

The first area is maintaining our existing infrastructure. Reclamation's budget reflects the need to maintain our existing portfolio of projects. Reclamation has 476 dams, 348 reservoirs, 58 power plants, and many other water delivery facilities. Much of that infrastructure is at least 50 years or older and its proper operation and maintenance is our top priority.

About $427 million of Reclamation's discretionary budget is dedicated to making sure that our facilities are operated and maintained in a safe and reliable fashion. This is a 21 percent increase just over the last 2 years, but providing adequate funding for these activities continues to be one of Reclamation's highest priorities.

Part of that program is our dam safety program. In Reclamation's infrastructure portfolio there are 371 dams and dikes that could result in loss of life if they were to fail. These structures form the core of Reclamation's Dam Safety Program. A total of $102 million is requested for this program, which is about a $14 million increase over the 2009 enacted level.

The second area I want to focus on is new water development. Reclamation continues to be actively involved in programs to develop new water supplies and infrastructure. Examples of these ongoing water development activities in the fiscal year 2010 budget request include: the Animas-La Plata project, for which there is

$54 million allocated to continue implementation of the Colorado Ute Settlement Act and Rural water programs.

The budget includes $64 million in fiscal year 2010 funding for water systems to deliver surface water to Indian and non-Indian communities in the Great Plains Region. These projects provide good quality water to rural areas where existing water supplies are either nonexistent or of very poor quality. The request includes funding for seven ongoing authorized rural water projects and funding for the O&M requirements that Reclamation has for the tribal water features is $15.3 million and about $49 million supports the administration's commitment to completing construction of the Mni Wiconi Project in South Dakota, the Garrison Unit in North Dakota, Lewis and Clark in South Dakota, Iowa, and Minnesota, Fort Peck in Montana, and for the first time we have included a budget request for Perkins County in South Dakota, Jicarilla Apache Project in New Mexico, and the North Central Montana Rocky Boys Project in Montana.

Overall, the request for rural water projects will continue the substantial investment made in recent years, including the $200 million in Recovery Act funding that Reclamation is currently in the process of allocating.

The fiscal year 2010 budget also requests $2.3 million for the establishment of the formal rural water supply program required under title 1 of the Rural Water Supply Act of 2006 and we hope to get that program up and going by fall of this year.

The third area is the environmental and ecosystem restoration programs that Reclamation has. Reclamation works to meet the increasing water demands of the West while protecting the environment. Reclamation has an established role in restoring aquatic habitat that is impacted by historic development and is working on a large number of restoration programs that are necessary to maintain compliance with the Endangered Species Act.

Accordingly, the 2010 budget continues focus on these challenges, including increases for several programs addressing environmental issues. Some examples include a $15 million request for the Red Bluff Pumping Plant, which is part of the Central Valley Project in California. Additionally, you will see an increase in the Lower Colorado River Operations Program to fund the multi-species conservation program which is key to ESA compliance in the lower Colorado River.

Finally, as I mentioned, I want to talk a little bit about Secretary Salazar's water conservation initiative. It's one of the most significant and exciting elements of our fiscal year 2010 budget. In fiscal year 2010, Reclamation will implement the water conservation initiative to expand and stretch limited water supplies in the West, to reduce conflict, facilitate solutions to complex water issues, and meet the growing needs of municipalities, the environment, and agriculture.

The fiscal year 2010 budget provides $46 million in funding for the water conservation initiative. This includes a $26 million increase in challenge grants for fiscal year 2010 and Reclamation will use these—will provide these grants on a cost shared basis in the areas—to facilitate water transfers between willing sellers and buyers, water efficiency and conservation projects, and projects

that improve water management by increasing operational flexibility in our systems, and finally, pilot and demonstration projects that demonstrate the viability of treating and using brackish ground water, sea water, or impaired waters within a specific locale.

Within the funding requested in 2010, Reclamation will be able to fund at least 110 new water conservation projects. These projects will be required to be completed within 2 years from the date of funding and therefore will have a near-term impact on water savings. The initiative also incorporates the basin study program, in which Reclamation will work with State and local partners to initiate comprehensive water supply and demand studies in the West.

A final piece for the water conservation initiative is funding for the title XVI Water Reclamation and Reuse Program. The funding requested in the 2010 budget is in addition to a substantial amount of funding provided by Congress in the Recovery Act.

PREPARED STATEMENT

Mr. Chairman, please allow me to express my sincere appreciation for the continued support that this subcommittee has provided Reclamation.

This completes my statement. I'll be happy to answer questions at the appropriate time.

[The statement follows:]

PREPARED STATEMENT OF MICHAEL L. CONNOR

Thank you, Mr. Chairman, Mr. Bennett and members of the subcommittee, for the opportunity to appear before you in support of the President's fiscal year 2010 budget request for the Bureau of Reclamation. With me today is Bob Wolf, Director of Program and Budget.

I appreciate the time and consideration this subcommittee gives to reviewing and understanding Reclamation's budget and its support for the program. Reclamation works hard to prioritize and define our program in a manner that serves the best interest of the public and those who rely on Reclamation for their water and power.

Our fiscal year 2010 request continues support to activities that deliver water and generate hydropower, consistent with applicable State and Federal law, in an environmentally responsible and cost-effective manner.

The proposed funding will allocate funds to projects and programs based on objective and performance-based criteria to most efficiently implement Reclamation's programs and its management responsibilities for the water and power infrastructure in the West. The President's budget request emphasizes the following principle: enhancing management of our water infrastructure and programs in the West by eliminating program redundancies, leveraging partnerships with our western stakeholders and maximizing opportunities for competitive processes.

The fiscal year 2010 request for Reclamation totals $1.0 billion in gross budget authority. This takes into consideration the effects of the legislation that, beginning in fiscal year 2010, redirects an estimated $5.6 million for Friant surcharges from the Central Valley Project Restoration fund to the San Joaquin River Restoration Fund. The request also is partially offset by discretionary receipts in the Central Valley Project Restoration Fund of $35.1 million. The resulting net discretionary request for Reclamation is $985.6 million.

WATER AND RELATED RESOURCES

The fiscal year 2010 request for Water and Related Resources is $893.1 million. The request for Water and Related Resources includes a total of $465.9 million for water and energy, land, and fish and wildlife resource management activities (which provides for construction and management of Reclamation lands, and actions to address the impacts of Reclamation projects on fish and wildlife). The request also includes $427.2 million for facility operations, maintenance, and rehabilitation activi-

ties which is used to ensure sound and safe ongoing operations. Adequate funding for facility operations, maintenance, and rehabilitation continues to be one of Reclamation's highest priorities. Reclamation continues to work closely with water users and other stakeholders to ensure that available funds are used effectively. These funds are used to allow the timely and effective delivery of project benefits; ensure the reliability and operational readiness of Reclamation's dams, reservoirs, power plants, and distribution systems; and identify, plan, and implement dam safety corrective actions and site security improvements.

Highlights of the Fiscal Year 2010 Request for Water and Related Resources

I would like to share with the subcommittee several highlights of the Reclamation budget, including one of the most significant and exciting elements of our 2010 request, the Water Conservation Initiative. In fiscal year 2010, Reclamation will implement the Water Conservation Initiative focused on expanding and stretching limited water supplies in the West to reduce conflict, facilitate solutions to complex water issues, and to meet the growing needs of expanding municipalities, the environment, and agriculture.

Water Conservation Initiative (WCI) ($46.0 million).—Of this amount, $37.2 million appears as the Water Conservation Initiative line item. The remaining $8.8 million is funded in specific title XVI water reclamation and reuse projects.

The American West is now the fastest growing region of the country and faces serious water challenges. Competition for finite water supplies, including water for environmental needs, is increasing as the need for water continues to grow. At the same time, extended droughts are impacting water availability and climate change is likely to compound the situation. With an increase of $26 million in fiscal year 2010, Reclamation will help address these concerns by providing cost-shared grants, on a competitive basis, through the Water Conservation Initiative. The Water Conservation Challenge Grants (previously Water for America Challenge Grants) provide the following types of on-the-ground projects: (1) Water marketing projects with willing sellers and buyers, including water banks that transfer water to other uses to meet critical needs for water supplies; (2) water efficiency and conservation projects that allow users to decrease diversions and to use or transfer the water saved; (3) projects that improve water management by increasing operational flexibility (constructing aquifer recharge facilities or making system optimization and management improvements); and (4) pilot and demonstration projects that demonstrate the technical and economic viability of treating and using brackish groundwater, seawater, or impaired waters within a specific locale. All grant proposals will be evaluated using criteria that give priority to projects that save the most water, facilitate transfers to new uses, address endangered species and other environmental issues, improve energy efficiency, conserve Reclamation project water, and exceed the minimum 50 percent non-Federal cost-share requirement.

With the funding requested in fiscal year 2010, Reclamation will be able to fund at least 110 new water conservation projects. The WCI competitive grant projects will be required to be completed within 2 years from the date of funding. As a result, projects funded under the WCI will have a near-term impact on water savings. Reclamation believes that water conservation, use of markets, and improved efficiency are crucial elements of any plan to address western water issues. With the WCI grants, Reclamation will take an important step towards increasing conservation and efficiency on a West-wide basis.

The WCI also incorporates the Basin Study Program in which Reclamation will work with State and local partners to initiate comprehensive water supply and demand studies in the West. Each study includes state of the art projections of future water supply and demand on a basin-wide scale; analysis of how the basin's existing water and power operations and infrastructure will perform in the face of changing water realities; and recommendations on how to optimize operations and infrastructure in the basin to supply adequate water in the future.

The title XVI, Water Reclamation and Reuse Program also contributes to water conservation in the Western United States, and is included in the WCI. The request includes $9.0 million to make available cost-shared funding for ongoing title XVI construction projects, research activities, and feasibility studies ($8.8 million directly supports named projects, $200,000 is used by the Commissioner's Office for administrative support of the program). Title XVI projects develop and supplement urban and irrigation water supplies through water reuse, thereby improving efficiency, providing flexibility during water shortages, and diversifying the water supply. There is also $3.0 million for water reclamation funded in the California Bay-Delta program under the Water Use Efficiency activity.

Other significant programs and highlights include:

Animas-La Plata in Colorado and New Mexico ($54.2 million).—The fiscal year 2010 President's budget request will continue implementation of the Colorado Ute Settlement Act. This funding will provide for directional drilling and pipeline construction of the Navajo Nation Municipal Pipeline, the first fill of Lake Nighthorse, and construction of County Road 211 Relocation and other required relocations. In addition to construction funding, this request includes funding for operation and maintenance of improvements for wetland and wildlife mitigation lands associated with the project.

Columbia/Snake River Salmon Recovery in Idaho, Oregon, Montana, and Washington ($18.0 million).—This program implements actions under both the 2000 Biological Opinion issued by FWS and section 7(a)(2) of the Endangered Species Act as required by the 2008 Biological Opinion issued in May 2008 by the National Marine Fisheries Services. The fiscal year 2010 President's budget request will enable Reclamation to address the requirements in the 2008 Biological Opinion for actions to enhance tributary spawning and rearing habitat to offset the effects of the Federal Columbia River Power System (FCRPS) hydro system operations on salmon and steelhead survival. It also will fund Reclamation's involvement with non-Federal parties located in Idaho, Oregon, and Washington to modify screens and remove instream diversion-related barriers. As required by the 2008 FCRPS Biological Opinion, it will fund Reclamation's participation in the implementation of real-time operational measures, system flood control, and Columbia Basin Project actions associated with ESA listed species.

Klamath Project in Oregon and California ($25.0 million).—The fiscal year 2010 President's budget request will continue funding for Reclamation to collaborate with other Federal and State agencies, tribes and the public to develop a basin-wide recovery plan that addresses water supply, water quality, fish habitat, and fish populations.

Klamath Dam Removal Study ($2.0 million).—The fiscal year 2010 President's budget request includes $2.0 million for the Bureau of Reclamation and $2 million for the Fish and Wildlife Service (FWS) to further assess the costs and benefits of removing four privately-owned hydroelectric dams on the Lower Klamath River below the Federal project. The request will fund the study costs associated with preparing National Environmental Policy Act documentation. The FWS also has $2.0 million in its request to support these studies. These studies will be conducted by Reclamation and FWS in coordination with BLM and BIA, the U.S. Forest Service, and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service. Reclamation also allocated $4.0 million in ARRA funding for these studies.

Lower Colorado River Operations Program in California, Arizona and Nevada ($21.4 million).—The fiscal year 2010 President's budget request will provide funds for the work necessary to carry out the Secretary's responsibilities as water master of the lower Colorado River, including the development of the Shortage Guidelines and reservoir management strategies during low reservoir conditions. The fiscal year 2010 request funds measures under the multi-species conservation program to provide long-term Endangered Species Act compliance for lower Colorado River operations for both Federal and non-Federal purposes.

Middle Rio Grande in New Mexico ($23.8 million).—The fiscal year 2010 President's budget request will continue funding for endangered species activities and Reclamation's participation in the Middle Rio Grande Endangered Species Act Collaborative Program as well as repair of priority river maintenance sites.

Platte River Endangered Species Recovery Program ($12.7 million).—The President's fiscal year 2010 budget request for the Platte River Recovery Implementation Program is $12.7 million. The agreement for the program was signed by then Secretary Kempthorne and the Governors of Nebraska, Colorado and Wyoming in late 2006. Platte River habitat is essential to the recovery of the whooping crane, interior least tern, piping plover, and pallid sturgeon (all threatened or endangered species).

Public Law 110–229 authorized the Secretary of the Interior, through Reclamation, and in partnership with the States of Wyoming, Nebraska, and Colorado, other Federal agencies, and other non-Federal entities to participate in the implementation of the Program for endangered species in the Central and Lower Plate River Basin and to modify Reclamation's Pathfinder Dam. No Federal appropriations are required to modify the Pathfinder Dam. Program activities include the acquisition of lands and water and contracting for habitat restoration projects.

Research & Development ($12.9 million).—Reclamation's research and development program has two focus areas for fiscal year 2010: (1) Science and Technology (S&T) ($9.2 million) which includes funding for the development of new solutions and technologies which respond to Reclamation's operational needs with priorities

in fiscal year 2010 for issues related to climate change and quagga mussels; and (2) the Desalination and Water Purification program ($3.7 million) which conducts desalination research, development and demonstrations for the purpose of converting unusable waters into useable water supplies. The research is conducted through competitive, merit-based cooperative agreements on a cost-shared basis.

Rural Water Projects—Ongoing ($64.0 million).—This request includes funding for seven ongoing authorized rural water projects. The first priority for funding rural water projects is the required operations and maintenance component, which is $15.3 million for 2010. The budget also includes $48.7 million to support the administration's commitment to complete construction of ongoing rural water projects including ongoing municipal, rural and industrial systems for Mni Wiconi and Perkins County (SD), the rural water component of the Garrison Diversion Unit (ND), Fort Peck (MT), Jicarilla Apache Reservation (NM), Rocky Boys (MT), Perkins County and Lewis and Clark (SD, IA, MN). For the construction component, Reclamation allocated funding based on objective criteria that gave priority to projects nearest to completion and projects that serve tribal needs.

Rural Water Program Development ($2.3 million).—On December 22, 2006, the Rural Water Supply Act of 2006 was signed. The fiscal year 2010 President's budget requests $2.3 million for title I of the statute that requires the Secretary to establish a formal rural water supply program for rural water projects in the 17 Western States. The act requires the establishment of programmatic and eligibility criteria for the rural water program along with other reporting requirements and criteria for appraisal and feasibility studies, and to establish clear guidelines for project development to help meet the water supply needs. Reclamation anticipates completing the final rule and beginning program implementation in late 2009.

Savage Rapids in Oregon ($1.2 million).—The fiscal year 2010 President's budget request will provide funds for completing the removal of the main portion of the Savage Rapids Dam to allow the Grants Pass Irrigation District to comply with a Federal court consent decree requiring the District to cease irrigation diversions. The project is expected to be completed in 2010. Removal of this irrigation diversion dam and the installation of pumping facilities allows the local farming community to continue irrigated agriculture and remove a migration barrier for the threatened Southern Oregon and Northern California coho salmon.

Site Security ($28.9 million).—The President's 2010 budget request for site security helps to ensure the safety and security of the public, Reclamation's employees and key facilities. Funding will support all aspects of Bureau-wide security efforts including physical security upgrades at high risk critical assets, law enforcement, risk and threat analysis, personnel security, information security, security risk assessments and security-related studies, and guards and patrols.

Under the provisions of section 513 of the Consolidated Natural Resources Act of 2008, Reclamation will collect $18.9 million in security-related operation and maintenance costs in 2010. Approximately 60 percent of this amount is reimbursable through up-front revenues. Approximately 40 percent of this amount is appropriated and then reimbursed to projects through the normal operations and maintenance cost allocation process.

Safety of Dams ($101.9 million).—The President's budget allows Reclamation to ensure that safety and reliability of Reclamation dams is one of the Bureau's highest priorities. The Dam Safety Program is critical to effectively manage risks to the downstream public, property, project, and natural resources. Of the budget request of $101.9 million, $50 million is for the Folsom Dam (CA), which has been identified as the Bureau's highest safety priority. Dam safety modifications, within the limits of enacted funding and latest information on risk, are planned to begin in 2010 for Glendo Dam (WY) and AR Bowman Dam (OR).

POLICY AND ADMINISTRATION

The $61.2 million request in fiscal year 2010 funds the development, evaluation, and implementation of Reclamation-wide policy, rules, and regulations, including actions under the Government Performance and Results Act. These funds are also used for management and performance functions that are not chargeable to specific projects and required for ongoing Commissioner's activities.

CENTRAL VALLEY PROJECT RESTORATION FUND

This fund was established by the Central Valley Project Improvement Act, title XXXIV of Public Law 102–575, October 30, 1992. The request of $35.4 million is expected to be offset by discretionary receipts totaling $35.1 million, which is the maximum amount that can be collected from project beneficiaries under provisions of section 3407(d) of the act. The discretionary receipts are adjusted on an annual

basis to maintain payments totaling $30.0 million (October 1992 price levels) on a 3-year rolling average basis.

The CVPRF request is a net of $35.4 million. This excludes a redirection of an estimated $5.6 million collected from the Central Valley Project Friant Division water users to the new San Joaquin River Restoration Fund beginning in fiscal year 2010 as authorized in Public Law 111–11, Omnibus Public Land Management Act of 2009. Previously, these funds went into the CVPRF as outlined in the Reclamation Projects Authorization and Adjustments Act of 1992, title XXXIV of Public Law 102–575, section 3406(c)(1). Under the Settlement Act, approximately $15.9 million per year of payments from the Central Valley Project, Friant Division water users are deposited in the Fund and available without further appropriations to implement the provisions of the settlement. These funds will be used for habitat restoration, improvement and acquisition, and other fish and wildlife restoration activities in the Central Valley Project area of California.

SAN JOAQUIN RIVER RESTORATION FUND

As referenced above, funding in fiscal year 2010 will be used to continue planning, engineering, environmental compliance, fisheries management, water operations, and public involvement activities related to the Restoration and Water Management goals in the Settlement. No funds are requested beyond the $15.9 million that is available in mandatory spending.

CALIFORNIA BAY-DELTA RESTORATION FUND (CALFED)

Title I of Public Law 108–361, titled the Calfed Bay-Delta Authorization Act, was signed by the President on October 25, 2004. The act authorized $389 million in Federal appropriations over the period of fiscal year 2005 through fiscal year 2010. For fiscal year 2010, $31.0 million is requested to enable Reclamation to advance its commitments under the CALFED Record of Decision to resolve water resource conflicts in the CALFED solution area. Funds will be used for water storage studies, the conveyance program, water recycling and conservation, the science program, water quality assurance investigations, ecosystem restoration projects and oversight functions to ensure program balance and integration.

FISCAL YEAR 2010 PLANNED ACTIVITIES

Reclamation's fiscal year 2010 priority goals are directly related to fulfilling contractual requests to deliver water and power. These include addressing a range of other water supply needs in the West, playing a significant role in restoring and protecting freshwater ecosystems consistent with applicable State and Federal law, and enhancing management of our water infrastructure while mitigating for any harmful environmental effects. Reclamation will deliver roughly 28 million acre-feet of water to meet contractual obligations while addressing other resource needs (for example, fish and wildlife habitat, environmental enhancement, recreation, and Native American trust responsibilities).

Reclamation will maintain dams and associated facilities in good condition to ensure the reliable delivery of water. Reclamation will maintain a forced outage average of 2.20 that is lower than the industry average for similar units to ensure reliable delivery of power. Reclamation will reduce salinity by setting a goal of preventing an additional 12,700 tons of salt from entering the water ways.

Moreover, the fiscal year 2010 budget request demonstrates Reclamation's commitment in meeting the water and power needs of the West in a fiscally responsible manner. This budget continues Reclamation's emphasis on managing those valuable public resources. Reclamation is committed to working with its customers, States, tribes, and other stakeholders to find ways to balance and provide for the mix of water resource needs in 2010 and beyond.

In addition, Reclamation, with funds from the American Recovery and Reinvestment Act of 2009, will undertake a variety of projects to meet future water supply needs, improve infrastructure reliability and safety, and restore ecosystems.

CONCLUSION

Mr. Chairman, please allow me to express my sincere appreciation for the continued support that this subcommittee has provided Reclamation. This completes my statement. I would be happy to answer any questions that you may have at this time.

BUDGET PROCESS

Senator DORGAN. Commissioner Connor, thank you very much.

Mr. Salt, let me ask you why it took 5 weeks from the time that the President's budget was released to us getting details of that budget? What was going on in the background there?

Mr. SALT. Sir, both the Recovery Act and the budget being so close together, there were a number of efforts by the administration to look at the policies that had existed, try and come up with a review of those policies, apply them in some appropriate way, first in the bill and then, based upon those sets of decisions, then to go and make the appropriate adjustments in the budget.

I think as we were doing all of that some of the projects changed, some of the numbers changed. As we then went to adjust our documentation, it took us certainly longer than we had hoped, and I apologize for the delay.

Senator DORGAN. I'm trying to understand on both the economic recovery plan and also this budget what role OMB played in the delays, because it seems to me that we have had very little time to review what you have submitted in detail. We've been put in that position twice in the last 4 years.

You know, there are lots of questions about how we can get information about the metrics that you used to evaluate what funding you recommend. I said at the start, the President has recommended a lot of earmark funding here. It was true with the previous president. Presidents recommend their earmark funding. How are those earmarks decided upon? Who makes the judgments about here are the things we're going to earmark in our request to the Congress?

Mr. SALT. Sir, as you pointed out in your opening comment, it is the President's budget. So obviously at some level the President is the one who submits the budget. I am here on his behalf presenting this budget. So I take full responsibility for the budget that is in front of you.

I would say as a new person learning how this works, we receive broad guidance from OMB. We then apply that guidance as we assemble our budget. As I said in my testimony, our focus is on trying to ensure that we are recommending the highest priority projects. We are given a budget envelope that we fit within and it's trying then to recommend the highest priority projects.

Senator DORGAN. Let me tell you why I'm asking the question. My sense is you have some sort of evaluation down there using certain metrics and models by which you decide here's what we'd like to fund. Then I assume it goes, as it has in the previous administration, down to the Office of Management and Budget and they say, well, here's our priorities, and they send it back to you. My understanding is these things bounce back and forth. I'm trying to understand how it works.

But let me ask you a couple of specific questions. For example, the contract for the Ozark-Jeta Taylor Powerplant is not funded for completion in this budget. It's a project that you have had in your budget in prior years. I don't understand, for example, why you wouldn't fund this to completion or if you've changed your mind about the project.

Mr. SALT. As part of the criteria, we used benefit to cost ratio. The sequence of priorities basically was that dam safety projects were put at the top of the list, high priority projects justified by their economic benefits were arrayed in order of their benefit to cost ratio, and in this case the Ozark-Jeta Project fell below the other priority projects that we had recommended.

Senator DORGAN. Again, I don't have any particular attachment to this project. It just seems to me like if it fit some sort of criteria last year saying, it's a project we're building, we're going to keep funding it, and now you say, except this year we've decided that we don't want to keep funding it. I don't understand what the metrics are by which one makes that decision. We probably need to know more about that.

ENVIRONMENTAL RESTORATION

A question about the Everglades funding, as I calculate what you're doing, the Everglades request is $214 million. We've spent I think about $1.3 billion on various components of Everglades restoration. I'm supportive of restoration projects in the Everglades, but the $214 million, that's in addition to the $123 million that was in the omnibus, and more than $100 million you've proposed in the Recovery Act. So that's about $440 million in just a matter of months, intended to be utilized no later than September 30, 2010.

I question whether that is going to be able to be done. In addition, the Everglades takes about 13 percent of the Corps construction budget, and then the next highest funded project is the Herbert Hoover Dike, also in Florida, which takes up about 8 percent of the construction funds. That means more than one-fifth of all the construction money for the Corps is going into these two Florida projects.

I'm not talking about the merits of the projects, but I am saying that there are projects I assume in New York and California and Missouri and Utah and elsewhere that would probably say, how is it that one-fifth of the funding is going to be destined in Corps construction to the State of Florida?

Mr. SALT. Sir, you've raised up a number of important issues. As you know, the Everglades restoration is largely funded on a 50–50 basis. Much of the work we're talking about here are projects that we've been working on for a long time. I think the Corps and our partners have been criticized for the lack of achieving any actual restoration benefits. So the administration is aware of those criticisms and is trying to move out with projects that would allow for actual on-the-ground restoration.

The recently authorized—the recent WRDA authorized a number of projects and what you're seeing in this budget is the startup of construction for these recently authorized projects that would allow for the progress that people are expecting.

Senator DORGAN. And those are new starts?

Mr. SALT. Sir, they are receiving construction funding for those elements for the first time, yes, sir.

Senator DORGAN. General Van Antwerp, you've stated that 11 percent of the total budget, fiscal year 2010 budget, is for environmental restoration. How much of the construction budget is set aside for environmental restoration?

General VAN ANTWERP. I'm not certain of that figure. I'm going to have to get back with you on that number, of the actual construction projects. We don't have it broken down like that.

Senator DORGAN. Would you break that down for us, please?

General VAN ANTWERP. Yes, sir.

Senator DORGAN. I have a question of the Bureau, but I want to commend the Corps and just say we've been through some significant flood fights this year. When you go into a flood fight you want the Corps on your side, and the men and women of the Corps who came to community after community to be engaged in those fights, we should not let the moment pass without saying thank you to the Corps and to the organization that helps make this happen.

General VAN ANTWERP. Thank you, Senator.

PROJECT EVALUATION

Senator DORGAN. In the Bureau of Reclamation, there are a number of projects in the fiscal year 2009 Energy and Water Act that were not included in the fiscal year 2010 budget request. Again, kind of what I asked the Corps: What's the reason for that? Have you changed your mind about projects that you previously thought worthy and now perhaps think are less worthy?

Mr. CONNOR. Mr. Chairman, I think that what we're doing there is operating within the parameters of the overall budget number that we were given. We look at the budget and we allocate a set of priorities maintaining the existing infrastructure. Then we look at dam safety and security. Then we look at ongoing construction activities. Then finally we have to deal with our ESA compliance items.

I recognize that within that ongoing construction activity we do have actions that have been undertaken with write-in funding on a lot of these rural water projects. But when we look at the kind of requirements with respect to maintaining that infrastructure, the safety and compliance activities so that we can keep delivering water, then we're left with a certain amount of money within that budget allocation that we're provided. That's where we have to make some tough choices.

Senator DORGAN. So that's where your advice to the committee about how you made those choices would be helpful, that you force-rank them. I use the term "earmark." You earmark your funding choices and force-rank them. We're wondering because of that ranking, are some of the things that you have previously funded now judged to be less worthy?

So we'll submit a list of questions to you, but it would be helpful to us if you would submit at least a judgment about those that you have previously funded and are not now funding, to say, in addition to being short of money, we felt this ranked below the following, when it did not perhaps the year before or the year before that it did rank below another project.

We're just trying to understand what you're doing and what your assessment is of the various projects related one to another.

I have taken more than my share of time. I'm going to be submitting a list of questions to the Corps and the Bureau. We appreciate your being here.

I'll call on the ranking member, Senator Bennett.

Senator BENNETT. I'll yield.

Senator DORGAN. Then Senator Bond.

Senator BENNETT. Senator Tester and I were up with the Secretary. So you go ahead.

Senator DORGAN. Senator Bond.

STATEMENT OF SENATOR CHRISTOPHER S. BOND

Senator BOND. Sorry I missed that fun.

General, you mentioned the tremendous O&M costs for our operating locks, locks some 80 years old that were built for 50 years. Many of us believe that they should be replaced and expanded for tremendous economic, energy, and environmental benefits. But of course, OMB does not agree.

The chairman rightly pointed out, and he put his finger on the problem with earmarks by the administration. My experience in the few years I've been here is that the ultimate decisions on administration earmarks are made somewhere in the bowels of OMB by people we don't know, we don't see or even hear from directly, and our constituents can't communicate with.

When one of us in Congress changes one of these priorities, we stand up for the specific item. We appropriately take responsibility and answer questions about them. I am one who believes that that is a very fair and not sufficiently exercised priority.

MISSOURI RIVER

So going to one of the earmarks, the Corps is currently responsible under the Clean Water Act to ensure navigable waters, such as the Missouri River, are not polluted. A side note: I came from EPW, which is looking for a vast expansion in the Corps's responsibility that will require a huge number of people to regulate every puddle and pond that is not now navigable.

But the administration budget includes $70 million for the Missouri River Fish and Wildlife Recovery Project. This is the construction of side channels and shallow water habitats across farm land adjacent to the Missouri River, for restoration activities, primarily for the habitat of the pallid sturgeon. Some are already constructed.

Now, here's the problem. According to the Corps's estimates, construction of these projects will result in dumping 540 million tons of farm land soil directly into the Missouri River. Thus these projects will contribute more than 350,000 tons of phosphorus to the Missouri River. These projects alone will supply 10 times what the EPA Task Force on Hypoxia determined to be the annual load of phosphorus of the entire Missouri River Basin.

Scientists believe that phosphorus is a major contributing factor in hypoxia in the gulf. In Missouri, the Clean Water Commission has vigorously opposed this effort. Missouri citizens and farmers have implemented a $41 million soil and water conservation tax upon themselves, and Missouri farmers pay an additional $27 million of their money to cost-share to keep this soil out of the river because of their concern of negative environmental impacts.

Given that the estimated cleanup cost to remove the phosphorus that the Corps is planning to put in the Missouri River in Missouri

cleaning up the shallow water habitat projects will be $18 billion, how wise is dumping that soil in the Missouri River?

General VAN ANTWERP. You have a lot of great facts, Senator Bond. I think as we do our section 108 study of the Missouri, we need to look further into those issues that you just raised right there. As far as the wisdom of that, I've got to really dig into the contents of that study. I understand what you're saying.

Senator BOND. I'd like to be able to have a discussion with the genius who made that decision. If somebody believes that that is still a wise decision, it would be very nice, Mr. Chairman, if we could chat with that individual here in a hearing.

These side channel projects are supposed to develop a habitat for the pallid sturgeon. I'd like to know how the projects were evaluated and justified. Do we know that we're getting the best value of our $70 million? I know the U.S. Geological Survey has done additional tests on the pallid sturgeon and believes there may be some other, more fruitful ways of encouraging the reproduction of pallid sturgeon. We are, through a Conservation Commission, engaging in a significant breeding program for pallid sturgeon so our favorite little fish will remain there.

I would like to know what you have found out about the best way to stimulate the sex life of the pallid sturgeon. That would be helpful.

FLOOD RELIEF AUTHORITY

Finally, we're very much concerned that a recent announcement by the administration to get FEMA out of the ability to help fight floods, remove debris, de-water, and assist in emergency efforts. There are many small communities in my State and I imagine in all States where our communities could be left high and dry or, worse, low and wet in the darkest hour.

Does the Corps have any authorization to step forward in the gap left by FEMA's failure to deal with these natural disasters?

General VAN ANTWERP. We do—we have a number of our own authorities under Public Law 84–99, which allows us to come in and flood fight and do coastal emergencies and those kinds of things separate from the FEMA. When we work for FEMA, we work under Emergency Support Function 3, which is for debris removal and ice and water and the blue roofs. So those issues are under FEMA when we respond to a disaster.

Senator BOND. But you can handle—not just coastal, but you can handle the inland disasters that might strike the Dakotas, Utah, and Montana?

General VAN ANTWERP. Right, much like the Midwest floods or even the ice storms of Kentucky this year. We're able to respond if it is a levee that's affected, we can come in under our own authority.

Senator BOND. What tests if it's not a levee? What kind of damage do you have to have for you to move in?

General VAN ANTWERP. If it's not a flood or a levee situation——

Senator BOND. If it's a flood, you can take it?

General VAN ANTWERP. If it's a flood, we're allowed to flood fight that with the local community. If a levee is judged that it is enti-

tled to 84–99 funds, we can come in and build HESCO barriers, help increase the height of that levee, et cetera.

Senator BOND. Thank you very much, General. We appreciate the good work you do. You're a vitally important partner and we're grateful for it. We just have some serious concerns about some of the things you've been directed to do.

Thank you, sir.

Senator DORGAN. Senator Bond, thank you.

I should point out that if those in the audience observe a different look here on the dais, it's Seersucker Thursday. Some of us can only afford one suit, but our colleagues look pretty spiffy today and we're glad to see them here.

Senator Bennett.

Senator BENNETT. Once I bought it for the first Seersucker Thursday, I was determined I was going to keep wearing it year after year because I'm not going to pay $150 for a suit and only wear it once. So that's where we are.

Thank you, Mr. Chairman.

OBJECTIVE PERFORMANCE GUIDELINES

Mr. Salt, your testimony says that the Corps is applying objective performance guidelines to the competing projects. Can you explain what the specific guidelines are?

Mr. SALT. Sir, there are different guidelines depending on the business line that we're talking about. Our highest priority is dam safety. The Corps does a risk analysis, taking into consideration the condition of the dam and the probability that there would be a serious risk to public safety, and based on that criteria those projects that are deemed a serious risk are moved to the top of our list.

For projects that are justified by the economic benefits, it's the benefit to cost ratio that is used. So we take the project portfolio that we have and we apply our benefit to cost ratio criteria.

For our navigation projects, it's a combination of the state of the navigation channel, the degree to which it's silted in and the additional work, dredging or other repairs, which need to be done. The Chief of Engineers, General Van Antwerp, mentioned the navigation locks and the need to pay attention to the important maintenance of our navigation locks. That analysis is done based on a combination of the condition of the particular project and the impact of not doing the maintenance in that year. Again, a similar risk-based analysis is used for those projects.

Senator BENNETT. Do you apply those same standards to environmental infrastructure projects, the risk, economics, and navigation?

Mr. SALT. Sir, for the environmental restoration, those efforts are prioritized basically by the administration as our highest priority environmental restoration efforts, and there are a number of large environmental restoration efforts. In 2007, Congress directed the Corps to review its principles and guidelines, which really doesn't give the administration's national policy for evaluating projects. It doesn't really give any guidance as to how to deal with the environmental issue that you're talking about.

We expect within a few months to have the draft proposed—a revised draft of the principles and guidelines that we're required to give to the National Academy of Sciences. It's in that document that we're looking at how to quantify non-monetary benefits in a way that would allow for a more objective set of criteria for dealing with environmental restoration projects.

Senator BENNETT. Do you ever have a conflict where you say if we do this environmental infrastructure it's in fact going to increase the risk?

Mr. SALT. I'm not aware of any—when I talk about the environmental, I'm talking about the environmental restoration projects. The environmental infrastructure is basically the sewage treatment and those sorts of projects, and I would say those are not supported by the administration.

But for the environmental restoration projects, I'm not aware of any—those that I'm aware of in Florida—I've been working in Florida—we maintained existing authorizations and in fact the projects were formulated so that there was no harm done to flood or water supply interests. So I would say as a matter of policy that would be my expectation as it relates to environmental restoration projects.

Senator BENNETT. Okay.

DROUGHT ASSISTANCE

Ms. Archuleta, the Bureau has budgeted $500,000 for drought assistance in fiscal 2010. Do you think that's sufficient?

Ms. ARCHULETA. Well, Senator, certainly it's difficult to know what our drought conditions are going to be. We work collaboratively with NOAA. It's tough for us to predict what the weather conditions are going to look like in the coming year. We're hopeful and certainly we'll work as closely with that budget as we can.

Senator BENNETT. The Central Utah Project. I'm sure it comes as no surprise that I have an interest in that. The budget is flat compared to fiscal 2009. Obviously you think that's sufficient to meet the progress. But what is your funding, total funding capability for CUPCA in 2010?

Ms. ARCHULETA. Well, actually, if I may, I'd like to turn it over to Mr. Murray, who's here, who knows the project, as you know, very well.

Senator BENNETT. Okay, good.

Mr. MURRAY. Mr. Chairman, Senator Bennett——

Senator BENNETT. Would you identify yourself?

Mr. MURRAY. Yes, Reed Murray. I'm the Program Director of the Central Utah Project.

First of all, I'd like to thank the subcommittee for your support over the years of the Central Utah Project. As you know, it's the largest water project ever undertaken by the State. We do appreciate your support.

Your question was the capability of the project.

Senator BENNETT. Right.

Mr. MURRAY. Well, first of all, we do support the President's budget. As you mentioned, there is no increase over the 2009 appropriation. However, the boost in appropriations that we received through your support with the Recovery Act has helped us and

given a significant increase to our program and allowed us to keep on schedule. So as far as our capability, we feel that the budget is the capability that we can maintain in 2010, given that and the Recovery Act funds that we have.

Senator BENNETT. Good. Thank you.

TERMINATING PROJECTS

I'm concerned about failure to complete existing projects. I think the chairman visited this issue as well. As I see it, this budget cancels 100 ongoing construction projects funded in fiscal 2009, not addressed in 2010. Terminating ongoing projects obviously long-term creates an enormous cost for the taxpayer.

So Mr. Salt, can you quantify what you expect the Corps to be able to pay in contract termination fees if we adopt this request? Or will they simply be delayed and resumed at a certain point hereafter, which could potentially be significantly more expensive as construction costs go up?

Mr. SALT. Sir, I don't know the number of projects that we have stopped. There's one project that, the Ozark Jeta Project I believe the chairman mentioned earlier, is a——

Senator BENNETT. I've noted that as well.

Mr. SALT [continuing]. Has a continuing contract. The estimated termination costs if we're required to terminate are estimated at $12 million. That project—at the time we put the stimulus list together, our assumption was that that project would be in the budget. So it wasn't included in our list. It would have——

ECONOMIC RECOVERY ACT

Senator BENNETT. So you're saying it was not included in the Recovery——

Mr. SALT. It was not in our initial stimulus list. When the final guidance—when we finally determined what was our criteria, on the benefit to cost——

Senator BENNETT. Right.

Mr. SALT [continuing]. The benefit to cost ratio from that project fell under the—we were not able to get to it with the available funds that we had. Because it has a higher benefit to cost ratio than other projects that we included on our stimulus list, we are now looking at the possibility, if funds are available based on our execution of the Recovery Act funds, this would be a priority for us to include under Recovery Act funding, and that's something we will seriously look at.

Senator DORGAN. Mr. Secretary, that gets to the point I was trying to ask you about earlier. I believe you were working on the fiscal year 2010 request at the same time that we provided funding for the Economic Recovery Act for you. As I said, there was zero money requested, inexplicably, for water projects in the economic recovery package.

We provided money, then you began working on how that money would be spent, and that was concurrent with your work on the fiscal year 2010 budget request. So when you say that you expected it to be in the budget request, so you didn't put it in the economic recovery package, you were doing both of them. That's what I was

trying to get at. Or did that list go somewhere else for somebody else to make decisions? And if so, whom?

Senator BENNETT. I'm assuming from your question and the chairman's explanation, from your answer to me and the chairman's probing, I'm assuming that we can expect some reprogramming requests from you to try to put some of this back in.

Mr. SALT. Sir, that decision has been made. It is a priority, and I think as we move forward—I guess, Mr. Chairman, your comment gets to what I was trying to answer when I apologized for the delay. I think there were two areas where this came up. One was on the beach projects, where we were trying as a matter of policy to decide whether to fund some of them in the Recovery Act or not. We ended up doing not only initial nourishment, but also re-nourishment, and doing that as part of the budget, and not to include funding for those in the stimulus.

Similarly, we were putting the stimulus together, we did make what turned out to be a wrong assumption that we would proceed with the continuing contracts in the budget. It turned out that the performance-based guidance we received was that we would fund down to a benefit to cost ratio for which the Ozark Jeta Project didn't compete on a benefit to cost basis, and it was not included in the President's budget.

So it was our decision. Basically, we said here is the broad guidance we were given. As we applied that broad guidance, the Ozark Jeta Project fell below the threshold.

Senator BENNETT. You do incur an obligation to repay people who have been involved. Do you have plans to reimburse the Southwest Power Authority or their ratepayers for the $20 million that they've contributed?

Mr. SALT. Sir, that's why it's a priority that we consider it for the available funds in the Recovery Act.

Senator BENNETT. So it would be cheaper, wouldn't it, rather than reimburse that $20 million, to simply go ahead and finish it?

Mr. SALT. Yes, sir, I think it would.

Senator BENNETT. Okay, then let's go ahead and finish it.

I understand, having experience with OMB that OMB sometimes has a different view of life than agencies, and I won't press you any further on that. But I do feel that failing to complete existing projects ultimately ends up as a waste of taxpayers' money.

Thank you, Mr. Chairman.

Senator DORGAN. I think that there can be cases where an existing project at some point becomes a project that someone says, well, we'll reevaluate; it sounded good when we started it, but this is no longer a project that makes much sense.

But the Senator from Utah makes an important point. If this project should be continued—I'd much sooner appropriate funding to finish a project that is worthy rather than pay penalties to end the project. I mean, $12 million or $20 million is a lot of money.

Did anyone raise this during the deliberations of the budget and the Recovery Act, or was it just not raised?

Mr. SALT. Sir, we raised it and my counterparts in OMB even said I could blame them if I wanted. But I don't——

Senator DORGAN. Maybe you just did.

Mr. SALT. No, sir. No, sir. What I'm trying to say is I'm here and I take ownership of this budget. I'm trying to explain the rationale for it.

BUDGET PRIORITIES

Senator DORGAN. I understand the difficulty. We're not trying to ruin your breakfast here. As I said at the start, you come representing a budget. You're required to pay fealty to that budget. I understand that. And we're just trying to understand what the criteria is by which decisions are made and who makes them.

It was very frustrating for us as we watched particularly the economic recovery funds and the list, because you didn't have a list. You didn't ask for any funding. We provided funding. And then there was a list. I had to call the head of OMB and I called the White House to find out when would somebody start making decisions about funding some of these projects, because the purpose of them was to start some sort of economic recovery. It took some while to get something off center to get it moving.

So again, I don't—I understand the point you're making, Mr. Salt. Yes?

Mr. SALT. Sir, could I make one comment, that as a new person I too am sharing some of your frustration as to how we're doing this. We have talked to OMB. We have talked to folks that as part of our fiscal year 2011 budget to try and work with the Congress to come up with a better way.

The big issues are what you alluded to, sir, how do you ensure that we're funding the highest priority needs, because we have a backlog that we can't get to of very high priority projects because we're funding the portfolio that we have. So we're very interested in trying to come up with a better way of working through this in a way that's more mutually satisfactory.

Senator DORGAN. And we want to work with you. We want you to succeed. We want the best decisions possible to come out of all of this. This is not a subcommittee where there are political battles going on. We're all very interested in water and energy issues and we want the best decisions to be made. We want to work with you, and we appreciate your being here.

A new member of this subcommittee, and we're pleased to have him, Senator Tester.

Senator TESTER. Thank you, Mr. Chairman.

MISSOURI RIVER RECOVERY PLAN

We'll start with the General. But, Mr. Salt, if you want to throw in on this one you can. The Army Corps requested $70 million for the Missouri River recovery plan. Senator Bond spoke of it a bit ago. Part of this money is to be used for completing an environmental analysis and engineering on an intake dam near Glendive, Montana. The replacement of that dam will open up about 240 miles to pallid sturgeon on the Yellowstone River.

I guess the question is, does the $70 million request for that line item allow for the intake dam project to proceed in a timely manner?

Mr. SALT. Senator, it does allow for it to proceed in a timely manner. There were also funds in the Recovery Act for that, so the combination of these allows us to proceed in a timely manner.

Senator TESTER. Thank you. What's the timeframe on that, on the removal and replacement of that dam?

Mr. SALT. That I'm going to have to get the detailed schedule. I don't have it with me right now.

Senator TESTER. If you could do that and get it back to my office, I would certainly appreciate that. Thank you very much.

FORT PECK RESERVOIR

Talk a little bit about—we'll talk a little bit about some—and this is also for you, General—about some lots on Fort Peck Reservoir. The WRD Act of 2000 authorized conveyance of about 400 cabin sites in four areas around Fort Peck to current leaseholders. I guess the question is that in the last 2 years the Corps has received about $1.8 million to complete the surveys and environmental work to complete the sale. The authorization expires next year. Does the Corps have adequate resources to complete the lot sales before the authorization expires?

General VAN ANTWERP. In this case we don't have the entire funds to complete this. There is an additional amount of funds that is needed to finish this project.

Senator TESTER. Okay. So the Omaha District reported to our office that about $1.9 million could be used in fiscal year 2010 to complete the sales. I'm confused why they told my office that, but yet did not put in a request to that effect.

General VAN ANTWERP. At this point I need to read about capability and what the district did was give you the capability. That of course is the amount of funding that could be used above the amount requested. In this case, there's no money requested in the President's budget for this project.

Also, I have to remind that we would utilize additional funds on projects or studies, but there would have to be offsets. So it's all part of, as the budget was assembled this project didn't get the funds, but there is a capability to do work on this project if funds were appropriated.

Senator TESTER. Okay. The authorization expires next year. It's been going on since 2000, a 10-year project. I think that there is a will on both sides to do this. What I heard you just say is that you weren't going to do it because you didn't have capability of doing it?

General VAN ANTWERP. No, we have capability of doing the work. As we looked at the budget in its entirety and it was put together, there weren't sufficient funds to allocate money toward this project.

Senator TESTER. Okay, so it didn't come up high enough on the priority list to ask for money for this project, is what you're saying?

General VAN ANTWERP. That's correct.

Senator TESTER. Okay. So are you going to ask for an extension of that authorization? Are you just going to let it run out?

You can get back to me on that, if you would. It would be good to get it done. Let's just put it that way.

MISSOURI RIVER RECOVERY IMPLEMENTATION COMMITTEE

I hate to pick on you, General. I've got another one. The Missouri River Recovery Implementation Committee was created as an all-inclusive—well, an inclusive; shouldn't say "all"—planning body for the stakeholders throughout the basin of the Missouri River. The legislation creating this project, the MRRIC Project, prohibited the stakeholders from getting help for traveling to these meetings. I've got a couple questions.

How is stakeholder involvement? If you can't address it, you can get back to me on that, too. But how is stakeholder involvement as far as this subcommittee goes? That would be the first question.

General VAN ANTWERP. First of all, it's crucial that we have stakeholder involvement.

Senator TESTER. Are they involved?

General VAN ANTWERP. They are involved. That's absolutely crucial and it is part of the process. As we do all the activities—this is in kind of the preplanning stage, which is really when those stakeholders need to be involved.

Senator TESTER. I agree with you that it is absolutely critical that you get broad-based participation in the subcommittee. I can tell you the stakeholder travel is not permitted under the project and I have got—I have received a fair number of calls saying, particularly from Native American tribes who are part of that basin, saying that it's really not inhibiting their—its inhibiting their ability to come.

I just want to get your thoughts on that. I mean, if we're getting broad-based attendance now, that truly is broad-based, that's a good thing. Going into the future, if it starts to cut back I think it would be great to know about that, so we can address it.

General VAN ANTWERP. I think your concerns, Senator, are good. What we try and do in this case—we do not pay those funds for them to travel to be part of that stakeholder group. But we do try and locate our meetings where——

Senator TESTER. Centralized.

General VAN ANTWERP [continuing]. They don't have to travel. So we will take—I'll take a close look at this and make sure we're not disadvantaging or not getting their input because we're not in their location.

Senator TESTER. I appreciate that.

SAINT MARY'S CANAL PROJECT

Mike Connor, it's good to see you, good to see you on that side of the table, hope the position's working out well. I think you're doing good work.

The President's budget included funding to conduct NEPA on the diversion dam at Saint Mary's Canal. We appreciate the recognition from the administration more than you will know that this facility is in bad need of repair—a critical first step.

However, while replacing the diversion dam is needed, especially as it applies to endangered species protection, it does not address the risk of catastrophic failure of the overall parts of the system, which are—not if, but when they're going to fail. We cannot fix it,

the project, as you probably know, Mike, until the alternatives are completed around it.

Does the administration support NEPA on the entirety of the Saint Mary's Canal Project, and if they haven't been—if you don't know that question, I guess my question is would you advocate for that?

Mr. CONNOR. Well, thank you for your welcome, Senator Tester.

I don't know the complete answer to your question, but I do know we do have in the fiscal year 2010 budget a request to initiate the NEPA and the ESA consultation that we do need to complete.

Senator TESTER. And we thank you for that.

Mr. CONNOR. So we will move forward very quickly in that manner. We are also having ongoing discussions with the Corps and our regional folks and a very good dialogue going right now, given the authority that the Corps also has, as to how to best move forward and maybe we can do it in a cooperative effort in doing our analysis and trying to develop a game plan under which we can maybe segment or look at different ways to get into the rehabilitation as we move forward with the NEPA and the ESA process.

Senator TESTER. Commissioner, the door is always open. We would love to be a part of those conversations. This is a critically important project for the northern tier of Montana, not only towns, but irrigators, and it's one of those things that should have been replaced 30, 40 years ago. But we are where we are.

RURAL WATER INFRASTRUCTURE

Another question that deals with the rural water projects that received a good sum of money for the recovery package, and we appreciate your work there, too. Projects in my neck of the woods, Montana, North Dakota, South Dakota, these are long-term commitment projects, as you well know. Should we interpret the support in the Recovery Act as a renewed commitment from this administration to support rural water infrastructure? Is it high on their list?

Mr. CONNOR. Well, the funding provided for those two rural water projects in Montana, I think represents the fact that there's a recognition of the need that exists there, and certainly trying to implement the Recovery Act in a way that met the goals of job creation and meeting other priorities as set forth in the legislation. So those two projects did receive substantial money.

There is also a request, I think even maybe for the first time, on a couple of those projects for the fiscal year 2010 budget. Recognizing that those requests are significantly lower than the funding provided by Congress, I think it's a recognition that we do want to continue toward moving forward with progress. Particularly in Fort Peck, I think we're getting substantially down the way to completion of the project.

Senator TESTER. Yes.

Mr. CONNOR. Rocky Boys is still really in its infancy, but there is some level of funding in the 2010 budget to keep the activity going there.

Senator TESTER. Well, I certainly appreciate it. Just as a sidebar comment, from my days in the State legislature, from my first day

in the State legislature as a matter of fact, these projects were on the list and they've more than doubled in the last 10 years because of inflation. I appreciate the administration's stepping up and putting some significant moneys in because it finally gets us ahead of inflation, and I think that we've got to get these projects done or literally a good portion of eastern Montana will have a hard time surviving. Let's just put it that way.

Anyway, I thank you all for being at the hearing and I appreciate your comments.

Thank you very much.

Senator DORGAN. Senator Tester, thank you very much.

Senator Alexander.

Senator ALEXANDER. Thank you. Thank you, Mr. Chairman.

CHICKAMAUGA LOCK

I have just two. Thanks to each of you for being here. I have just two questions, General, and both of them are of you, if I may. I'm concerned the Corps is not properly prioritizing Chickamauga Lock near Chattanooga as it considers when to complete the construction of the new lock. You've done a lot of very important work on it and we appreciate that. But usually the Corps determines how important it is to repair or rebuild a lock based upon the value of the cargo passing through the lock. My concern is that in cases like the one we have at Chickamauga the Corps of Engineers isn't able to fully measure the value of the lock because the lock plays an important supporting role to the Oak Ridge National Laboratory and the Y–12 National Security Complex, and the cargo that goes through the lock to the Oak Ridge Laboratory, which is the largest energy laboratory in the world, and the Y–12 National Security Complex, which has to do with nuclear weapons, is different and difficult to—is different in terms of evaluating it.

Is there some way that you can consider the role Chickamauga Lock plays in supporting Oak Ridge and Y–12 as you assess the value of the lock and prioritize it with respect to your other lock repair and construction projects?

General VAN ANTWERP. Senator, you make some great points. We'll take that under consideration. Right now the prioritization goes if it's life safety, then economic is slightly below that, but very, very important. So we need to look at these other considerations, and I will go and make sure that this is plugged in as we look at the value of these; when we rate our locks and dams, basically the dams, we have categorized all them as to the risk of danger for life safety and other factors.

Senator ALEXANDER. Nationally——

Mr. SALT. Senator, could I comment on that, sir?

Senator ALEXANDER. Yes, of course.

Mr. SALT. As we talked earlier, the current guidance for the Corps, national guidance, called the principles and guidelines, directs the Corps to focus on the aspects of a project that optimize the economic development, the NED plan.

Senator ALEXANDER. Right.

Mr. SALT. The new P and G will attempt to look at other nonmonetary factors as a way to try and expand the way we look at projects to include these other kinds of considerations. As I men-

tioned earlier, we expect to have our new draft of this out later this summer. But I would hope that it would give us the analytical basis and the national policy basis to try and get at the kinds of issues that you're raising.

Senator ALEXANDER. Well, the National Academy of Sciences in its report—well, in a variety of ways, but in its work with the Augustine Commission, which we called America Competes, one of the most important pieces of legislation we passed in Congress, said that America's brain power advantage since World War II is the single greatest contributing factor to our high standard of living. That's economic development.

And the Oak Ridge National Laboratory is the single largest energy research laboratory in America, perhaps the world. So our great laboratories are our principal engines of economic development, not just in Tennessee, but in our country. And that's been recognized by the National Academies of Science and Engineering and Medicine. It's been affirmed by the Congress in our America Competes Act, where we prioritized those efforts.

So national security is of course another part of it, but if we're going strictly on economic development—I remember when I was Governor of Tennessee I tried many different ways to help our State improve our low family incomes. I tried getting rid of the usury limit and I tried building highways. I tried everything, but it all came back to education. I eventually got into funding centers of excellence and master's teachers and chairs of teachers and creating distinguished scientist programs between the Oak Ridge National Laboratory and the University of Tennessee as the single best way to create higher family incomes, economic development. In fact, we became the State with the fastest growing family incomes in the country.

So I'd make a strong argument that the Oak Ridge Laboratory and similar institutions around the country fit the economic development title or even should lead it. Economic development today is different than it was 50 years ago, most people who work in it understand that better schools, colleges, universities, national laboratories are essential to it.

Anything else on Chickamauga I should know or ask about?

General VAN ANTWERP. I will just tell you it's very high on our priority and we're watching it closely and having periodic reviews of it. It's moving along.

Senator ALEXANDER. Well, we've talked about it before and it has great importance to our entire region in terms of jobs.

CENTER HILL AND WOLF CREEK DAMS

The other question I have has to do with Center Hill and Wolf Creek Dams. I greatly appreciate the priority that you've placed on those two dams. The President's budget request shows support for funding levels that will continue to keep the projects on track with minimal disruption to residents. There's a safety problem in Kentucky and in Tennessee outside Nashville.

Now, here is my goal and my question. I'd like to get the lake levels back up to pre-construction levels as rapidly as we possibly can, because while the lake levels are low we're having to buy $100

million worth of electricity every year from outside sources that would otherwise be produced by hydroelectric.

Now, this administration is placing a very high value on carbon-free electricity from renewable energy and the simplest, cleanest form of renewable energy is hydroelectric power. So my question is, is there a way that you can continue to do your work there, finish the work that you're doing about seepage, and bring the lake levels back up to their pre-construction levels so we can use that carbon-free electricity that we can produce?

General VAN ANTWERP. Your point is very well made. I assure you we're going to bring those lake levels up as soon as we can and still have the proper safety measures. So now that we've got the grouting walls in Wolf Creek, for example, that allows some raising of that elevation. But it may be farther down the road before we can get back to pre-construction levels.

Safety is the primary concern here. But I assure you we're trying, and we're reviewing this. What is the next level? We've got all of our experts on it to see, now that you have the grouting walls done, what does that allow you to do. We'll do some raising of it. As we've had inflows in and raised it up, we're watching the boils down below the dam that have lessened, by the way, because of the grout curtain.

But we'll get it up there as soon as we can.

Senator ALEXANDER. I appreciate that and I have no complaint to make about anything about your work there. I just thought maybe I'd give you some extra ammunition, given the administration's focus on carbon-free electricity. This is a significant amount in an area—otherwise we use more coal or other things.

Mr. Chairman, those are the only questions I have. I thank you for the time.

Senator DORGAN. Senator Alexander, thank you very much.

RED RIVER VALLEY FLOODING

Two other points, Commissioner Connor and Secretary Archuleta, I'm going to send you a note. I would ask that you respond if you would about additional information that you may be sending to OMB about the record of decision that's awaiting us on the Red River Valley Water Project. The previous secretary did not issue a record of decision. I understand there is discussion between your agency and OMB and my expectation is that you'll be sending them additional information. If you would give me a report on that, that record of decision has been waiting for some while.

General Van Antwerp, I did not mention the Red River Valley flooding situation and the work that we have done. You've been in a number of meetings on the Devil's Lake flooding, chronic flooding problem. I'll be holding meetings on Saturday morning in Valley City, North Dakota, and Jamestown, North Dakota, about the James River and the Cheyenne River, both of which had very serious flooding this year. So we're working on a lot of issues with you in our State.

I think all of us on this subcommittee find ourselves in that position. That's one of the reasons we aspire to be on this subcommittee, to address some very significant water policy issues.

So we will continue to have those discussions. I didn't mention them earlier, but I wanted to make note for the record, just because we have had a lot of discussions recently about them, that they remain a significant priority.

ADDITIONAL COMMITTEE QUESTIONS

I want to thank you for appearing. We will be submitting a list of questions to you and ask that you respond to them, and we appreciate very much your being here today.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED TO TERRENCE C. SALT

QUESTIONS SUBMITTED BY SENATOR BYRON L. DORGAN

Question. Who is the responsible official for approving what goes into the Corps' budget?

Answer. While the Army made recommendations, this is ultimately the President's fiscal year 2010 budget.

Question. Were you also the responsible person that made the decisions as to what projects were included in the Recovery Act?

Answer. Yes, I was ultimately responsible for those decisions. Within the Corps headquarters, a senior management group is responsible overseeing the American Recovery and Reinvestment Act of 2009 (ARRA) activities.

Question. Could you tell us a little about the decisionmaking process that went into the Recovery Act?

Answer. USACE received $4.6 billion of ARRA funds in 6 different appropriation accounts. The projects selected represent a set of investments that will contribute to economic development. The Civil Works projects will further these Recovery Act stated purposes of preserving and creating jobs and promoting recovery as well as to invest in transportation, environmental protection and other infrastructure that will provide long term economic benefits .

The Corps followed the Recovery Act's guidance which included commencing expenditures and activities as quickly as possible consistent with prudent management. The Corps made its allocation of Recovery Act construction funds based on the economic and environmental return of its ongoing projects. The projects will achieve the purposes of the Recovery Act to commence expenditures quickly by investing in infrastructure that will provide long term economic and environmental benefits to the Nation. Moreover, the projects are fully consistent with the President's direction to ensure that Recovery Act funds are spent responsibly and transparently.

The projects also meet the five criteria enumerated in the Congressional report accompanying the Recovery Act, namely that the projects:

—Be obligated/executed quickly;
—Result in immediate employment;
—Have little schedule risk;
—Be executed by contract or direct hire of temporary labor; and
—Complete a project phase, a project, an element, or will provide a useful service that does not require additional funding.

Question. I find it interesting that beach renourishment projects were deemed not eligible for funding in the Recovery Act and yet when the budget was released less than 3 weeks later, beach renourishment projects were included in your fiscal year 2010 budget. You had to be working on both of these at the same time. How is it that this decision was made?

Answer. The administration has reviewed the policy for beach nourishment and re-nourishment in the context of Flood and Storm Damage Reduction. After reviewing the policy, the decision was made to have beach nourishment and re-nourishment projects compete for funding with other Corps construction projects. The decision was made to support the highest performing beach nourishment and re-nourishment projects and the first opportunity to do so was in the fiscal year 2010 budget.

Question. It took 5 weeks from the time the President's budget was released on May 7 for the COE to provide detailed budget justifications. You knew in March

what your funding allotment was going to be. Reclamation on the other hand did not find out their allotment until much later, yet managed to get their justifications released with the budget. What was the problem?

Answer. I regret that the materials were not provided in a timely manner. We will work diligently to provide budget materials in a timely manner in the future.

Question. Are you aware of any other agency in the executive branch that took this long to get their budget justifications submitted?

Answer. No.

OZARK-JETA TAYLOR POWER PLANT, AR

Question. I am surprised that the contract for the Ozark-Jeta Taylor power plant is not funded for completion in the fiscal year 2010 budget. This is a project that you have budgeted for in prior years. Can you explain why you are not choosing to fund the completion of this contract in fiscal year 2010?

Answer. The Ozark-Jeta Rehabilitation Contract was not funded this year because the decision point for allocation of funding to high-value projects was made on a performance basis within available resources. The Ozark-Jeta Rehabilitation project has a benefit-cost ratio (BCR) of 1.8, which fell below the 2.5 BCR funding threshold.

Question. What is the cost to complete this contract?

Answer. The costs to complete this contract is $33 million.

Question. What is the cost to terminate this contract?

Answer. The costs for the termination is estimated to be $20 million.

Question. Why couldn't Recovery Act funds have been used to complete this project?

Answer. At the time decisions on Recovery Act project selections were made, the Army did not know the full extent of the fiscal year 2010 budget policies or the impacts on specific projects of such decisions. Therefore the Army did not know how Ozark-Jeta would be specifically treated in the budget.

Question. Was the criteria for inclusion in the Recovery Act different than the criteria utilized in the fiscal year 2010 budget?

Answer. Yes, there were many projects funded through the Recovery Act that would not be included in the fiscal year 2010 budget.

EARMARKS

Question. Do you or Ms. Archuleta have any idea how President Bush's Executive order on earmarks will be enforced by President Obama?

Answer. No, I do not.

Question. For fiscal year 2009, Congress referenced all of the Corps and Bureau text and tables into the law. Is this causing you any execution issues?

Answer. No.

Question. Is this contributing to an increase in carry over from one fiscal year to the next?

Answer. No.

NORFOLK HARBOR, CRANEY ISLAND, VA

Question. I notice that you have recommended funding for the Norfolk Harbor, Craney Island project as a new start construction project for fiscal year 2010. As authorized in WRDA 2007, this project is to be 50/50 cost shared between the Federal Government and the local sponsor. However, it is my understanding that the Chief of Engineers recommendation for the project was that it be cost shared at 4 percent Federal costs and 96 percent non-Federal costs.

Explain to us how a project that was authorized in violation of your own policies was funded as a new start in your budget?

Answer. The decision on which projects to start is based on their benefit-cost ratios. This project has a benefit-cost ration of 3.6 to 1 and was within the range of high-value projects selected for new starts. The project was first authorized in WRDA 98 at the 4/96 Federal non-Federal cost sharing based on the Chief's report of 1997. The budget is based on the project being executed at that cost sharing, rather than at the subsequently revised cost sharing.

Question. Are you aware of any other time that the administration has recommended funding for a project that was not authorized in accordance with administration policy?

Answer. Yes, and in that case also the project was budgeted on the basis that it would be executed at cost shared in accordance with policy.

Question. What makes this one special?

Answer. It is a high performing project with a benefit to cost ratio of 3.6.

Question. You proposed $28.5 million for fiscal year 2010 which is clearly less than 4 percent of the total project cost of $750 million. Your budget justification indicates that once you fulfill the 4 percent Federal share that no more funding will be recommended by the administration. Are you not then leaving us with the problem of fulfilling the cost share authorized in law?

Answer. The 4 percent share is based on the allocation of project costs as shown in the Chief's report of 1998 and reflective of the large local sponsor investments that must be made in land-side facilities and lands, easements and rights of way.

INLAND WATERWAYS TRUST FUND

Question. You have again proposed a lockage fee as a replacement for the current diesel tax on the Inland Waterways as a way to enhance revenues in the Inland Waterway Trust Fund. This fee was roundly rejected by industry and Congress last year.

Do you see a different outcome this year?

Answer. The Inland Waterways Users Board formed an Inland Marine Transportation System (IMTS) Investment Strategy Team, with participation by representatives of the inland navigation community and Corps of Engineers representatives from around the country, to consider long-term investment options and to address the shortfall in the Inland Waterways Trust Fund (IWTF). The intent of this effort is to reach a consensus approach to address this issue.

Question. Has the administration worked with the Finance or Environment and Public Works Committees in the Senate to determine what might be acceptable to enhance these revenues?

Answer. I am not aware of such discussions.

Question. This subcommittee will write a bill to conform to the revenues as they currently exist in the Trust Fund. No solution to the inadequate revenue nor forgiveness of the matching requirements of the Trust Fund will be proposed by this subcommittee.

Were other methods to raise revenues besides this fee proposal considered?

Answer. The administration proposal reflects some changes from the bill proposed last year, and a number of possibilities are being evaluated by the IMTS Investment Strategy Team to address the solvency of the IWTF.

Question. What were they?

Answer. The IMTS Strategy Investment Team is evaluating options such as increasing the current fuel tax, lockage fees, and a combination of funding methods.

Question. How is the economic slowdown affecting the revenues in the existing Trust Fund?

Answer. Revenues generated by the fuel tax are lower in fiscal year 2008 and fiscal year 2009 than in recent years, about $85 to $87 million. Revenues generated for the Inland Waterways Trust Fund are affected by many factors such as the overall economy, fuel efficiency of towboat engines, market conditions for the various commodities transported on the inland and intracoastal waterways, etc. At least part of the decline in revenues in fiscal year 2008 and fiscal year 2009 is attributable to the economic slowdown.

Question. Will we have to slow down work even further?

Answer. The IWTF projects and corresponding amounts proposed in the President's fiscal year 2010 budget are predicated on revenue projections of $85 million in fiscal year 2010. The budget also provides for using that revenue to bring the few remaining rehabilitation projects under construction that were exempt from cost-sharing in the fiscal year 2009 Omnibus Act back into a 50 percent-50 percent balance between Construction Appropriations and IWTF. Due to the number of projects currently underway, the large funding requirements of those projects, and the lack of IWTF resources, available revenue will be applied to ongoing projects so as to make reasonable progress on high performing projects.

EVERGLADES

Question. I am concerned by your Everglades request of $214.3 million for fiscal year 2010. This amount is in addition to $123 million we provided in the fiscal year 2009 Omnibus and more than $100 million that you have proposed in the Recovery Act. That is nearly $440 million provided in a matter of months that is intended to be utilized no later than September 30, 2010.

Your track record on expending Everglades funding has not been all that great. Do you really believe you can efficiently use this much funding this fast?

Answer. I believe the Everglades program has reached a point of maturity where efficient progress can be made using the full amount of funds budgeted.

Question. According to an article in the Miami Herald on June 16, issues between the State and Federal Governments over how the State will be credited for land purchases are holding up initiation of the Picayune Strand project planned for fiscal year 2009. You budgeted $21.9 million in fiscal year 2009 to start this project and included $40.8 million in the Recovery Act to accelerate the project. It appears that none of these funds can be spent based on this article, is that correct?

Answer. The issues described in the Miami Herald all have been resolved. The Master Agreement for the Comprehensive Everglades Restoration Plan (CERP) is scheduled for execution on August 13, 2009, as is the Project Partnership Agreement (PPA) for the Picayune Strand project. Following execution of these agreements, the Picayune Strand project construction will be initiated. The Corps is prepared to award and obligate all of the fiscal year 2009 appropriated funds, as well as the ARRA funds provided for Picayune Strand, in October 2009.

Question. If the dispute is not resolved by October 1, you may carry over the $62.7 million planned for the Picayune Strand element. In addition, your budget indicates that you have programmed an additional $44.4 million in fiscal year 2010. I believe that makes the total just over $107 million for this project in fiscal year 2010 if the agreements can be worked out on crediting. Is that correct? Realistically do you believe you can execute this funding?

Answer. Yes, $107 million is scheduled to be obligated for work planned on the Picayune Strand project, using funds previously appropriated and funds budgeted in fiscal year 2010. The execution of the Master Agreement and the Picayune Strand Project Partnership Agreement as scheduled August 13 will clear the path for construction. The first construction contract on the Picayune Strand project is scheduled to be awarded in October 2009, and the second contract is on schedule to be awarded in fiscal year 2010.

Question. Your fiscal year 2010 budget proposes two more new starts for a total of $70 million. I believe you also have planned new starts for Mod Waters that you will be carrying out for the Interior Department.

It appears that there are an awful lot of planned starts and little action on getting anything built. I have to ask, is it prudent to propose two more new starts in fiscal year 2010, for funding that will likely have to be carried over into fiscal year 2011?

Answer. The fiscal year 2010 budget proposes the initiation of construction of two additional CERP projects, the Indian River Lagoon South C–44 ($22 million) and Site 1 Impoundment ($25 million). The Corps expects to obligate all those funds in fiscal year 2010. The Master Agreement will provide a streamlined process toward project delivery. With its planned execution on August 13 of this year, the CERP program is taking a major step forward in delivery of planned projects. Design efforts on the Indian River Lagoon and Site 1 Impoundment projects will be complete, and construction is ready to be initiated, consistent with project sequencing in the Integrated Delivery Schedule.

Question. We have an abundance of needs for that funding in fiscal year 2010. Despite the merits of the Everglades project it seems imprudent to be "parking" large sums of money in the project that cannot be utilized. This is not like running into an unexpected construction delay. The Miami Herald article indicates that this crediting dispute has been ongoing for 4 years. Don't get me wrong, I believe that restoration of the Everglades is a worthwhile expenditure of taxpayer funds, and this subcommittee has been supportive of it. Since fiscal year 2000, this subcommittee has appropriated more than $1.3 billion to the various components of Everglades Restoration. That is a far bigger commitment than we have made to any other project over the same period. However, let's assume that everything falls into place. Will there be enough personnel to execute all of this planned work? How will this massive infusion of funding for Everglades projects affect future Corps budgets?

Answer. The crediting dispute is now resolved. As for personnel available to execute the program, the Corps is accustomed to adjusting management and oversight personnel in response to changing program levels and has plans in place to adjust personnel levels to short term and long term needs of the Everglades Restoration program. Each year we will consider the level of construction required to support planned Everglades work and balance these needs against the needs of other high performing projects.

Question. In fiscal year 2010, the Everglades gobbles up more than 13 percent of the Corps construction budget. The next highest funded project is the Herbert Hoover Dike, also in Florida, accounting for about 8 percent of the construction funds. That means that more than one-fifth of your construction money is going to Florida. I realize that the work is where the work is, but you can see that this puts me in a little bit of a quandary. Senator Feinstein would argue that there is plenty of work needed for flood control projects for Sacramento and Los Angeles. Senator Landrieu would argue that there is plenty of work needed for hurricane protection for

the Louisiana Gulf Coast. Senators McConnell and Alexander would argue that there is plenty of work needed to repair Wolf Creek and Center Hill Dams. Senators Schumer and Gillibrand would be happy to tell you about the work that could be accomplished on the New York and New Jersey project. It is certainly not my intent to pit one Member of the Senate against another, but you can see my dilemma. These are all authorized worthwhile projects. Yet you have not accommodated their needs in your budget in the manner that you have accommodated the Everglades. What am I to tell these members?

Answer. The administration has made funding decisions based on the performance of the projects. As the higher performing projects are funded to completion, opportunities to consider other projects will expand.

Question. The budget justification for the Everglades again shows more than $4 million in Corps funding for the Modified Waters Delivery Plan. I thought Congress was quite clear in the fiscal year 2009 E&W bill, that this project should be funded through the Department of the Interior. Why is this included in the Corps budget when Congress has made it abundantly clear that this project should be funded 100 percent by Interior?

Answer. Completion of the Modified Water Deliveries to Everglades National Park Project remains a high priority for the administration. The fiscal year 2010 budget reflects the administration's continued belief that the Corps and the Department of the Interior each has a role to play in restoring flows to the Park.

Question. How much of the funding that this subcommittee has provided for Mod Waters was carried over into fiscal year 2009? How much will be carried into fiscal year 2010 based on current projections?

Answer. The unobligated carry over from fiscal year 2008 into fiscal year 2009 was $32 million because the Corps was unable to award a contract for modifications to Tamiami Trail as a result of uncharacteristically high cost growth in the construction industry at the time. Since that time, the project scope has been revised and all associated issues have been resolved. No currently available funds are projected to be carried over into fiscal year 2010—all USACE available funds will be obligated on the Tamiami Trail construction contract, which is scheduled for award in September 2009.

Question. I was surprised at your recommendation of more than $100 million for Everglades' projects in the ARRA. The Everglades projects consistently receive one of, if not the highest allocation of funds in our annual bill. These annual amounts are supposed to be very close to the Corps capability. You notified me in a letter dated June 15 that one of the projects, "Site 1", has been removed from the ARRA list. I believe this project was planned for over $41 million in Recovery Act funding. Can you tell me about the decision process that brought you to include this project in the ARRA and the decision process to remove this project for consideration?

Answer. The Everglades project is one of the highest value major environmental projects that this administration is pursuing. The project is of such value that the Army sought to accelerate the current plan through the use of ARRA funds. As explained in the referenced letter of June 15, 2009, if appropriations for Site 1 are made available in the Energy and Water appropriations for 2010 as recommended by the President, then Site 1 would be eligible to receive Recovery Act monies, if such are available at that time. Should Congress not provide construction funds for Site 1 in fiscal year 2010, then Recovery Act funds cannot be used for that project.

Question. How much of the funding is anticipated to be carried over from fiscal year 2009 to fiscal year 2010?

Answer. The estimated carry over from fiscal year 2009 to fiscal year 2010 for the South Florida Ecosystem Restoration (SFER) Program is $31 million. The majority of carry-over funding is due to delays in execution of the Master Agreement and to the receipt of favorable contract awards.

Question. There has been a lot of talk of the State of Florida purchasing the lands belonging to U.S. Sugar. If that happens, will that affect the analysis of the projects that have already been planned?

Answer. The affects of any lands purchased by the State of Florida remains uncertain, since the State has not yet determined their planned use of any lands purchased. However, the Corps has determined that the U.S. Sugar acquisition is not likely to affect the majority of projects identified for early implementation in the Integrated Delivery Schedule. Because of its proximity to the lands being acquired and potential affects to planned CERP features, the Everglades Agricultural Area Phase 1 Reservoir Project Implementation Report development has been suspended pending the outcome of the sugar purchase and assessment of affects planned use of U.S. Sugar lands may have.

Question. Put more simply, this would be a major change without project conditions. How will that be incorporated into the design of current and future projects?

Answer. The projects currently under construction and in design are not likely to be affected. However, it is possible that the State's land acquisitions may provide opportunities to improve the CERP Plan. The land purchase provides several key areas that may allow for substantial savings in the future.

Question. Might this purchase result in the need for a major reevaluation of the suite of projects being considered for the Everglades?

Answer. The projects currently under construction and in design are not likely to be affected. If the State indicates its intent to make the lands available for potential use in the CERP, the Corps would prepare a report to assess these opportunities, which would then be evaluated in detail in Project Implementation Reports and proposed for authorization.

Question. There has been considerable discussion of global climate change and sea level rise in the media. Some of the more extreme projections I have seen show much of Southern Florida under water. While that is a possibility, how is the design of the current projects considering global climate change?

Answer. The September 2008 Biennial Report to Congress recommended that additional studies be undertaken to determine sensitivity of restoration efforts to sea level rise. A CERP Technical Data report is now being developed to identify the potential impacts for a range of sea level rise scenarios. The initial draft of this Technical Report is expected to be available in late 2009.

QUESTIONS SUBMITTED BY SENATOR MARY L. LANDRIEU

Question. In late 2005, following hurricanes Katrina and Rita, Congress directed the Secretary of the Army (Public Laws 109–103 and 109–148), acting through the Chief of Engineers, to conduct a comprehensive hurricane protection analysis and design in close coordination with the State of Louisiana and its appropriate agencies; to develop and present a full range of flood control, coastal restoration, and hurricane protection measures exclusive of normal policy considerations for South Louisiana; to consider providing protection for a storm surge equivalent to a Category 5 hurricane; and to submit a preliminary report within 6 months of enactment and final technical reports within 2 years. We now refer to this report as the LACPR or Louisiana Coastal Protection and Restoration Study or the "Category 5 Report".

Mr. Secretary and General, I understand that this report is now under further public review, but can you please detail for this subcommittee why is this report is nearly 2 years late? Additionally, please detail how the money appropriated for this report has been spent? Lastly, when the report is transmitted—will it contain specific recommendations for the authorizations of projects?

Answer. Inserted below is a letter that was forwarded on February 9, 2009 to the President of the Senate regarding the progress of the Louisiana Coastal Protection and Restoration (LACPR) Technical Report. It also discussed actions required to complete the technical report.

As indicated in the letter, the Corps has worked diligently to ensure that the report addresses the entire scope of issues required by statute, including developing a full range of flood control, coastal restoration, and hurricane protection measures without regard to normal policy considerations related to the economic justification of projects, as well as to submit a final technical report for protection from Category 5 storm events.

The Corps also has worked to coordinate its efforts with State and Federal agencies, obtain independent external peer review, and incorporate lessons learned from the Interagency Performance Evaluation Task Force.

DEPARTMENT OF THE ARMY,
OFFICE OF THE ASSISTANT SECRETARY,
Washington, DC, February 9, 2009.

Honorable JOSEPH R. BIDEN, JR.,
President of the Senate,
U.S. Capitol Building, Room S–212,
Washington, DC 20510–0012.

DEAR MR. PRESIDENT: This letter is to advise you of the current progress of the report for Louisiana Coastal Protection and Restoration (LACPR) that is being prepared in response to the Energy and Water Development Appropriations Act of 2006 and the Department of Defense, Emergency Supplemental Appropriations to Address Hurricanes in the Gulf of Mexico, and Pandemic and Influenza Act, 2006.

These statutes directed the Chief of Engineers to conduct a comprehensive hurricane protection analysis and design; to develop a full range of flood control, coastal

restoration, and hurricane protection measures exclusive of normal policy considerations for South Louisiana; and to submit a final technical report for "Category 5" protection. The final report was originally scheduled for completion in December 2007. However, as described in my letter to you of December 20, 2007, due to the magnitude and scope of the work being considered, the complexities of the study, and the necessity to provide a clear and fully informed report, additional time was needed to revise the draft technical report and to ensure its full coordination with State and Federal agencies, including critical independent external peer review by the National Academy of Sciences (NAS).

While this study was underway, we incorporated the extensive knowledge and lessons learned from the Interagency Performance Evaluation Task Force (IPET) which itself was conducted under the review of the American Society of Civil Engineers and the independent peer review of NAS. Many of the models and tools that were developed by the IPET team provided a critical foundation to this study. Included within this study will be a systems analysis of both LACPR and the Mississippi Coastal Improvement Program (MSCIP). This continued analysis will ensure that we maintain a systems perspective for the region.

The study authorization directed that the recommendations of this study not be constrained by normal policy considerations (i.e., not be constrained by the ratio of their projected costs to their projected benefits). U.S. Army Corps of Engineers (Corps) policy is to recommend to Congress a single plan that maximizes net economic benefits in meeting the study objectives. Without such a definitive discriminator the Corps' design recommendations could default to simply the most effective means of providing the required protection, but this approach undoubtedly would come at great cost, both to the Treasury and to the ecosystem. It is apparent, therefore, that decisions made by Congress regarding the activities to be authorized will need to be supported by a report that arrays the available information in a way that the relative advantages and disadvantages of the various courses of action can be readily displayed. An undertaking of such scope and complexity as providing comprehensive storm surge protection within a dynamic coastal and riverine environment and within an environmentally and socially-sensitive framework is an undertaking that requires supporting information of far greater scope and complexity than has ever been developed for other Civil Works projects.

Consequently, a new tool to support the decisionmaking process has been developed by the Corps. The "risk informed decision framework" was utilized in both Gulf Coast studies to array the various alternatives that are considered most likely to be implementable, along with the assessments of various stakeholders, in a way that communicates the relative advantages and disadvantages of each. As a result of this process, decisionmakers should be able to make a well-informed decision as to which alternatives can be knit into a holistic and systematic solution to the problems and are worthy of further pursuit.

Over the past year, the Corps has worked in partnership with the State of Louisiana and other Federal agencies to refine the final array of alternatives which would make the Louisiana coast more resilient to future storm events. Tremendous efforts have been undertaken by the Corps and our partners toward the production of the final report. Approximately 20 meetings were held across the Louisiana coast with stakeholders and our Federal partners. There was also a critical need to ensure that the Corps completed an independent external peer review by the NAS. The NAS has provided initial comments and will be completing a final review within the next few months. Its initial comments are being addressed in the revisions to the technical report.

In the coming months, the Corps will circulate draft and final reports, formerly coordinate the final report with the Governor of Louisiana and the Federal agencies, and undertake a final review process. The final report will include an array of alternatives with evaluation results for each alternative and a comparison of top-ranked plans based on input from stakeholders. This will include a ranking of alternatives that provide hurricane and storm risk reduction from an array of "Category 5" storm events. Due to the size and complexity of the Louisiana coastal system, a preliminary level of design and cost information is included, but a programmatic environmental impact statement will not be part of the submission package. The final technical report will provide a basis for sound, risk based, consideration of possible actions to manage storm surge related risks and will take into account previously authorized projects and those requiring further analysis.

The Corps advises me that it will be in a position to submit a final report that is responsive to congressional and administration directions to this office by August 31, 2009. The Corps will also provide an implementation framework with the report. Once the Corps provides the complete documentation for the LACPR study, my office and the Office of Management and Budget will evaluate the report and provide

an administration position on further recommendations. I am providing a copy of this letter to the Senate Subcommittees on Energy and Water Development, and Transportation and Infrastructure.

Very truly yours,

JOHN PAUL WOODLEY, JR.,
Assistant Secretary of the Army.

Since the 2005 authorization, the Corps has obligated and expended approximately $22,769,000 on the LACPR Project, as follows:

Planning and Project Management	$9,561,000
Engineering & Design	3,944,000
Socioeconomics and Analysis	2,919,000
Environmental Studies	1,005,000
Real Estate Investigations	52,000
Multi-Criteria Decision Analysis (MCDA)	849,000
Public Outreach	783,000
Other Federal Agencies	980,000
Report Development	535,000
Agency Technical Review (ATR)	765,000
External Peer Review	876,000
Dutch Shadow Plan	500,000
Total	22,769,000

In lieu of specific construction recommendations, the technical report recommends implementation options and a path forward beyond the technical report.

The report will require Congress and the administration to make tradeoffs with the input of other Federal agencies, the State, local government, other stakeholders, and the public. These decisions will involve billions of dollars and will impact the coast and its people over the next 50 to 100 years.

All of the final alternative plans may have social and economic impacts requiring further evaluation and stakeholder input. The Corps will implement recommended projects in the most expeditious manner available by maximizing the use of available construction and study authorities (i.e., modifications of on-going projects/studies, post-authorization change reports, or new authorizations).

Question. In WRDA 2007, the Congress authorized the Louisiana Coastal Area or LCA. This authorization provides —for the first time—authorization for coastal wetlands restoration in Louisiana. What is the status of this program in general and what is the timetable for creating a master plan under this program as required by the act? Has a task force been established? If not, why?

Answer. The authorization for the Louisiana Coastal Area as identified in the Chief's Report dated January 31, 2005 required additional investigations prior to the initiation of construction. Overall, 12 project investigations are underway with 10 of those investigations starting after the enactment of WRDA 2007. I am advised that the investigations for the features authorized in section 7006(e)(3) of WRDA 2007 are on track for completion of a Chief's Report by December 31, 2010 (as required by section 7006(e)(3)(B). The investigations for the features authorized by section 7006(e)(1) are scheduled to be completed by November 2011. The investigation for the Beneficial Use of Dredged Material Program authorized in section 7006(d) is scheduled to be completed by July 2010. The investigation for the Barataria Basin Barrier Shoreline feature authorized by section 7006(c) also is scheduled to be completed by July 2010, although issues remain to be resolved. The project management plans for the investigations for the other features that require submittal of a construction report, as outlined in section 7006(c), are being coordinated with the State of Louisiana.

WRDA 2007, title VII, section 7002 provides for the development of a Comprehensive Plan. Given the importance of and the extensive, ongoing efforts to implement the restoration plan authorized in title VII, no work will be initiated to develop a comprehensive plan until such time as funds are appropriated.

Section 7004 of WRDA 2007 establishes the Coastal Louisiana Ecosystem Protection and Restoration Task Force (Task Force), but to date, funds have not been appropriated to implement section 7004. In the interim, the Corps New Orleans District and Mississippi Valley Division have successfully engaged Federal and State agency representatives at the regional level throughout the study process for the Louisiana Coastal Protection and Restoration study and the Louisiana Coastal Area program. Similarly, Corps Headquarters has engaged Washington-level Federal Principals throughout the study process for these efforts. These meetings have been

an efficient and effective way to communicate and solicit input from the agencies. Until funds are appropriated for the Task Force, the Corps will continue to engage the Federal and State agencies through the regional working group and Federal Principals Group.

Question. The Corps of Engineers is currently re-evaluating Morganza to the Gulf Hurricane Protection project due to projected cost overruns. This situation is unacceptable. Congress has done its job by authorizing this project and the Corps should move quickly to sign the Record of Decision, remove any remaining obstacles and get to work. What is the status of this re-evaluation? Will the State and local government receive credit for the nearly $200 million they have appropriated for this project? In the long term, how with the Corps work with State and local partners to allow them to move forward with interim measures of protection on critical Federal projects and receive credit for this critical work?

Answer. Section 1001(24) of the Water Resources Development Act of 2007 (WRDA 2007) authorized 100-year level of risk reduction for Morganza to the Gulf based on the Chief of Engineer's Reports completed on August 23, 2002, and July 22, 2003. Due to changes in hydraulic conditions and design criteria established following Hurricanes Katrina and Rita in 2005, a revised project cost estimate was completed in October 2008. In this analysis the Corps applied the lessons learned and engineering design recommendations for improving the performance of hurricane and storm damage risk reduction systems that were identified by the Interagency Performance Evaluation Task Force (IPET). The results of the revised project cost estimate clearly show that the cost to provide post-Katrina 100-year level of risk reduction will exceed the authorized project cost by more than 20 percent, thereby exceeding the limit imposed by section 902 of WRDA 1986 and triggering the requirement for additional authorization. A Post Authorization Change (PAC) Report is being prepared to reaffirm the Federal interest and seek additional authorization. The PAC Report is scheduled for completion by December 2012. Initiation of construction of the Morganza to the Gulf project will be dependent upon additional Congressional authorization and appropriation of construction funds.

As is the case for all Work-In-Kind credit, the non-Federal sponsor's design and construction will be reviewed for compliance with the Hurricane and Storm Damage Risk Reduction System guidelines, and a credit determination will be made on a case-by-case basis for each project feature.

In order to maximize the amount of Work-In-Kind credit our State and local partners may receive, the Corps will continue to help our partners comply with the Hurricane and Storm Damage Risk Reduction System guidelines, considered the Federal standard. Specifically, the Corps will review and comment on the local sponsor's real estate acquisitions, relocations and engineering designs in a timely manner. The Corps will also conduct periodic field inspections on the local sponsor's construction sites, provide inspection reports, and work with the sponsor if any remedial actions are required to meet the Federal standard. In order for credit to be awarded, the project will have to be reauthorized, construction funds will have to be appropriated, a Record of Decision will have to be signed and a Project Partnership Agreement (PPA) will have to be executed.

For any work performed by the our State and local partners in advance of the execution of a project partnership agreement to be eligible to receive a credit, the reauthorization of the project must include a provision that authorizes the Government to provide credit to the sponsor for the reasonable and allocable costs of the work performed in advance of the execution of the project partnership agreement and that the provision of such credit shall be subject to a finding by the Government that the said work is compatible with the Federal project, is constructed to a design standard that is acceptable to the Chief of Engineers, is economically justified and environmentally acceptable.

Question. The Harbor Maintenance Trust Fund (HMTF) was created to provide the necessary funding to keep our harbors, ports and waterways safe and navigable; yet, the HMTF takes in far more revenues each year than it spends despite a backlog of approved projects. (NOTE: In fiscal year 2009, due to multiple supplemental appropriations bills including those for natural disasters, HMTF expenditures equaled revenues, but this is the rare exception, and our ports shouldn't be put in a position where they should have to depend on such supplementals simply to receive funding for necessary projects). Now that there is a substantial balance in the fund, don't you think annual expenditures should at least equal annual revenues? Do you think the HMTF should be restructured in order to more effectively use the funds collected?

Answer. The overall Operation and Maintenance (O&M) program is prioritized for all missions, including navigation, flood risk management, hydropower, etc. O&M funding is budgeted for the diverse Civil Works missions based on performance

metrics and priorities. The O&M budget includes funding for critical maintenance of the highest use navigation channels and harbors. If the HMTF funded activities were to be increased, other critical mission areas would be adversely impacted.

QUESTIONS SUBMITTED BY SENATOR ROBERT F. BENNETT

OZARK-JETA TAYLOR HYDROPOWER REHABILITATION

Question. I am aware that it is the Corps's policy, and that of this Congress, to enter into Continuing Contracts only when they are necessary for efficient construction. Congress has limited the Corps use of continuing contracts to insure that they are only used when necessary, and with the understanding that the Corps will budget these contracts efficiently through to completion. You have not budgeted for the continuation of the Ozark-Jeta Hydropower Rehab project, which will deliver clean, renewable energy into the foreseeable future when finished, even as you have budgeted extraordinary amounts for the Everglades where the benefits are much less tangible. Further, my understanding is that you require only $30 million to complete the contract and it will cost $20 million to terminate the contract. To not budget to continue this contract appears to be not only bad government, but also to contradict past Corps policy regarding budgeting for continuing contracts. Please provide the rationale for failing to budget to continue the work on the Ozark-Jeta Hydropower Rehab Continuing Contract?

Answer. The Ozark-Jeta Rehabilitation Contract was not funded this year because the decision point for allocation of funding to high-value projects was made on a performance basis within available resources. The Ozark-Jeta Rehabilitation project has a benefit-cost ratio (BCR) of 1.8, which fell below the 2.5 BCR funding threshold.

Question. The work for the Ozark-Jeta Hydropower Project is almost two-thirds complete. Not only has the Federal Government invested more than $44 million to date, the non-Federal sponsors for this project, the Southwestern Power Marketing Association, have invested $20 million of their money. By your estimate, it will cost $20 million to pay the contractor to terminate this contract. Do you have any plans to reimburse the SWPA or their rate payers for their out-of-pocket costs? Did you consider the impact of this decision on the rate payers?

Answer. As sponsors and signatories to the Project Cooperation Agreement for the project, the SWPA and/or their rate payers are subject to paying their share of the costs incurred by the project, even those for termination for convenience without reimbursement by the Corps or the Federal Government. The Army does not have authority to reimburse SWPA.

Question. I understand that at least one turbine has already been dismantled and that an additional turbine has been ordered. What do you plan to do with the turbine that has been ordered—let it rust?

Answer. The Army is currently working with the contractor to assess the project schedule to incorporate current funding constraints. Our goal is to develop a plan that will allow for beneficial use of all funded features of the project.

Question. How do you expect additional funds "to become available" if you don't budget for the project? Are you leaving it up to this subcommittee to fix this problem? Does it require a congressional add, which is disparaged by the administration, to correct this lapse in judgment on the Government's part?

Answer. The Army is looking at other options for funding of the project in fiscal year 2010. The Army is working with the Southwestern Power Administration, the agency in the Department of Energy responsible for marketing the power generated at Ozark, to identify "customer funding" to continue contractor activities. The Army is also assessing the potential to fund fiscal year 2010 scheduled work with ARRA funding. If neither of these possibilities work out, the project will be put in caretaker status subject to funds coming available.

Question. Mr. Secretary, How much energy will be lost as a result of not funding this project?

Answer. According to the Southwestern Power Administration, the amount and value of the lost energy due to forced outages at Ozark for the last 2 fiscal years is 82,420 MWh valued at $5.1 million in fiscal year 2007; and 153,550 MWh valued at $9.5 million in fiscal year 2008. That rate of loss would continue or increase.

Question. Mr. Secretary, What will happen to the Corps and contract workers when this project is terminated?

Answer. This project is being constructed concurrently with the Webbers Falls Powerhouse rehabilitation project. If the Ozark Powerhouse Rehabilitation work is suspended or terminated, Corps and contract workers will be shifted from Ozark to

Webbers Falls. At this time, the Corps does expect any employees will be terminated.

Question. Mr. Secretary, I notice that you have funded the Richard B. Russell Powerhouse Rehab project when it has a benefit-cost ratio of 1.9 which is lower than the BCR of Ozark-Jeta, AR project which is 2.4. Can you explain why these two projects which appear to be the same were treated differently in the budget?

Answer. While Richard B. Russell is a Hydropower project on the Savannah River in GA and SC, the item budgeted for fiscal year 2010 is an environmental mitigation piece of the project. The work essentially deals with environmental monitoring of the oxygen injection system. Funds are budgeted for procurement and fabrication of 50 percent of the Government furnished equipment associated with the underwater diffuser system. For the record, the Ozark-Jeta project has a current benefit to cost ratio of 1.8.

BUDGET REQUEST

Question. In your press release on the fiscal year 2010 budget you state that "The budget represents the prudent level of investment in the Nation's water infrastructure and in the restoration of its aquatic resources. I am proud to present it."

What exactly are you proud of? Is it the more than 100 on-going construction projects funded in fiscal year 2009 that are not addressed in this budget, or is it the $227 million decrease from what we provided in the fiscal year 2008 Omnibus?

Answer. I am proud of the fact that the fiscal year 2010 budget provided an increase of nearly 9 percent above previously budgeted levels for the Corps of Engineers water program. The budget includes $5.125 billion in new Federal funding for the Civil Works program, the highest budget ever proposed for the Civil Works program.

The fiscal year 2010 budget provides critical funding that will enable the Corps to continue to contribute to the Nation's efforts to revitalize the economy, and restore the environment.

Question. Is it prudent not to provide funding for projects that have been under construction for years?

Answer. Projects funded through the fiscal year 2010 budget are the highest performing projects in their respective categories, and it is important to fund these projects as efficiently as possible.

Question. What are we supposed to tell the project sponsors that are sharing in the costs of these projects?

Answer. The administration has made funding decisions based on the performance of the projects. As the higher performing projects are funded to completion, opportunities to consider other projects will expand.

Question. It will cost them more. It will cost us more. Again, how is this prudent?

Answer. By focusing available funding on the highest performing projects in their categories, those projects can be completed more efficiently and their benefits brought on line sooner.

QUESTIONS SUBMITTED BY SENATOR GEORGE V. VOINOVICH

Question. Should the Great Lakes Navigation System be funded as a "system" the way the Mississippi River System is?

Answer. The Great Lakes projects are individually authorized and are considered coastal projects. While there is some interdependence of the Great Lakes ports and harbors on each other, the Great Lakes system is non-linear and many Great Lakes ports and harbors can operate independent of other harbors. Conversely, the inland navigation facilities on the Mississippi River, Ohio River, and other inland waterways are linear and interdependent on each other, and a single closure in the system will stop all traffic. For other than short-haul movements, the commercial towing vessels must transit through many locks and dams to move from the point of origin to the destination point and all the inland navigation infrastructure along the way must be functional for the trip to occur.

THE AMERICAN RECOVERY AND REINVESTMENT ACT

Question. It is my understanding that the Corps used "geographic diversity" when allocating stimulus funds. However, the Great Lakes region, encompassing eight States, received only 2 percent of the $4.6 billion in civil works funding. Can you explain?

Answer. The geographic diversity element was considered in the sense that the entire United States was canvassed for projects. ARRA projects are funded in 49 States, the District of Columbia, and Puerto Rico.

When the bill was enacted, the USACE received $4.6 billion in American Recovery and Reinvestment Act (ARRA) funds in six different appropriation accounts. Each account has a purpose directed in statute and ARRA funding was directed or otherwise targeted to account capability. The projects selected represent a set of productive investments that will contribute to economic development and aquatic ecosystem restoration. The Civil Works projects will further these Recovery Act stated purposes of preserving and creating jobs and promoting recovery as well as to invest in transportation, environmental protection and other infrastructure that will provide long term economic benefits.

The Corps followed the Recovery Act's guidance which included commencing expenditures and activities as quickly as possible consistent with prudent management. The Corps made its allocation of Recovery Act construction funds based on the economic and environmental return of its ongoing projects. The projects will achieve the purposes of the Recovery Act to commence expenditures quickly by investing in infrastructure that will provide long term economic and environmental benefits to the Nation. Moreover, the projects are fully consistent with the President's direction to ensure that Recovery Act funds are spent responsibly and transparently.

The projects also meet the five criteria enumerated in the Congressional report accompanying the Recovery Act, namely that the projects:

—Be obligated/executed quickly;
—Result in high, immediate employment;
—Have little schedule risk;
—Be executed by contract or direct hire of temporary labor; and
—Complete a project phase, a project, an element, or will provide a useful service that does not require additional funding.

QUESTIONS SUBMITTED TO LIEUTENANT GENERAL ROBERT VAN ANTWERP

QUESTION SUBMITTED BY SENATOR MARY L. LANDRIEU

Question. A large amount of goods move in and out of our Nation's ports, and these ports play a vital role in our Nation's economy. Louisiana has some of the largest and most critical ports in our entire Nation. Navigable and safe ports are also essential to our Nation's security. Do you think the Army Corps of Engineers should take national security into account when it prioritizes funding for operations and maintenance projects? How will this new administration ensure that our ports are secure and maintained for this critical commerce?

Answer. The impacts of a potential waterway closure due to loss of channel dimensions and/or lock/structure failure and its criticality to the navigation infrastructure are considered and weighted along with economic, environmental, safety, and industry impact factors. In addition, as a response to the Maritime Transportation Security Act of 2002, Corps locks were assessed for criticality and risk reduction to infrastructure and security upgrades were implemented at critical locks and maintained through project operations and maintenance funds.

QUESTIONS SUBMITTED BY SENATOR ROBERT F. BENNETT

CIVIL WORKS PROGRAM

Question. In your role as the Chief of Engineers, what do you see as the major water resource challenges facing this Country in the future.

Answer. Some of the major challenges are in the area of developing new strategies to operate and manage existing water infrastructure in a sustainable manner that not only meets the Nation's contemporary water resources needs, but also adapts to changing conditions such as climate change and demographic shifts to ensure such resources are available for future generations. Competing water uses must be balanced to provide multiple benefits such as economic security, environmental health, social well-being, and public safety. For example, navigation projects must be designed and operated to not only safely and efficiently convey vessels and cargo to ports and waterways, but do so in an environmentally responsible manner. Flood risk management projects must simultaneously reduce flood risks and sustain healthy ecosystems. To address these competing demands, the Corps is beginning to undertake a new overarching strategy called Integrated Water Resources Man-

agement, which seeks to foster equitable, efficient management and sustainable use of water. There is much work to be done but it will lead to significant gains in these areas.

Question. What level of funding would be necessary to maintain the progress realized in the Civil Works Program through the enacted appropriations levels for the past couple of years?

Answer. This is truly a difficult and challenging question, in this time of significant funding for the Corps of Engineers Civil Works program. The Corps is currently working with over $20 billion that have been provided through a variety of appropriations, including not only regular Energy and Water appropriations, but also the American Reinvestment and Recovery Act and emergency supplemental funding. That is an unprecedented amount of money for the Corps of Engineers.

Question. If the administration's budget proposal is enacted, what will be the impact on meeting the Army Corps' O&M backlog? The construction backlog?

Answer. The fiscal year 2010 budget does not reduce the magnitude of the O&M and construction backlog. However, the budget is the appropriate mix of Construction and O&M funding and will enable the Corps to meet essential construction, operation, maintenance, and rehabilitation requirements in the Civil Works program. The O&M backlog and the Construction backlog do not represent a prioritization of work within either of the two accounts or between the accounts. The priority of work in the backlog varies widely.

Question. What is the percentage of the Nation's commerce that come into or leaves this Country that goes through a Corps built and maintained harbor?

Answer. The Corps of Engineers has 299 deep draft coastal harbor channels. Virtually all the waterborne cargo passes through a Corps navigation project, and anecdotal evidence indicates the vast majority of all import and export commerce passes through them. The Corps of Engineers doesn't track waterborne commerce in a way that enables me to provide a more specific answer to your question.

Question. Could you characterize the proportion of the discretionary budget of the Federal Government that is directed toward building and maintaining this Country's water infrastructure today versus 30 years ago?

Answer. Multiple agencies, including the Department of the Interior (Bureau of Reclamation), were provided resources for building and maintaining the Nation's water infrastructure. The Corps of Engineers, in fiscal year 1979, was provided 1 percent of the discretionary budget of the Federal Government for civil works projects and programs.

In fiscal year 2009, 1.07 percent of the Federal Government's discretionary budget was provided for the Corps of Engineers. However, given the magnitude of changes in the Nation and in Federal programs, it is not clear that these percentages are meaningful.

Question. Could you provide a historical perspective on the value of the Nation's inland waterways for national security and economic security?

Answer. Navigation has been very important to national security and economic security for over 200 years. The benefits of navigation accrue to the Nation as a whole, with 31 States directly served by the 12,000 mile commercial inland waterways. This helps to explain the major Federal interest in our Inland Marine Transportation System (IMTS).

The IMTS is a major transportation mode and the Nation's industrial and agricultural sectors would be profoundly affected without an efficient, effective and safe Inland Marine Transportation System. The waterway system annually handles well over 600 million tons of cargo valued at over $112 billion. This includes energy commodities such as coal; petroleum and related products; construction materials; grain and other farm products, which move by waterways to ports for export; industrial and agricultural chemicals; forest products; and manufactured goods.

The waterways play an important role is the movement of military equipment, supplies, fuel, and many defense-related raw materials and finished products. Over the years since World War II the use of the waterway system for national security purposes has shifted from rapid mobilization to a more lengthy mobilization. The waterway system now plays a role in the long-term or advance movement of military supplies, cargo, equipment, fuel, and industrial materials. With a longer mobilization scenario there is increased consideration of civil and industrial as well as military transportation needs. The interpretation of national defense transportation needs now includes three components: traditional military mobility, industrial mobility to support a conflict, and support for a mobilized civil economy. This paradigm places additional emphasis on the use of the inland waterways.

Question. How much unobligated funding did the Corps carry over from fiscal year 2008 to fiscal year 2009?

Answer. Unobligated funding carried over in the accounts receiving annual appropriations is as follows.

[In millions of dollars]

Investigations	92
Construction	1,461
Operation & Maintenance	432
Mississippi River and Tributaries	95
Formerly Utilized Sites Remedial Action Program	5
Flood Control and Coastal Emergency	3,516
Regulatory Program	12
Expenses	1
TOTAL	5,614

These figures do not include funds appropriated in Public Law 110–252 and not available for until fiscal year 2009, or funds appropriated in Public Law 110–329 that were not available until fiscal year 2009.

Question. To what do you attribute this large carryover?

Answer. About $4.4 billion of the total is supplemental funds appropriated to respond to emergency events. Often, obligations for project repairs and restoration activities following emergency events extend beyond the fiscal year in which the emergency events occur. In particular, about $3.5 billion of the supplemental funds carried over are Construction funds and Flood Control and Coastal Emergency funds being used in the program to protect the New Orleans metropolitan area, which is scheduled for completion in fiscal year 2011.

About $1.2 billion is regularly appropriated funds being carried over on a variety of projects. This level of carryover is not unexpected, given that funds by and large are remaining on the projects for which they were provided, with minimal reprogramming compared to years before fiscal year 2006.

Question. Do you anticipate another large carry over balance from fiscal year 2009 to fiscal year 2010?

Answer. In fiscal year 2009 the Corps received, in addition to regular appropriations of $5.4 billion, supplemental funding of $9.3 billion under Public Laws 110–252, 110–329, and 111–32, plus $4.6 billion of funding under the American Recovery and Reinvestment Act, 2009, Public Law 111–5. Of the supplemental funding, $5.8 billion is for the New Orleans metropolitan area, and much of the rest is for repairs and restoration activities that can extend into fiscal year 2010.

In addition, just under one-half of the Recovery Act funding will be obligated in fiscal year 2009. Therefore, there will be significant carryover into fiscal year 2010.

QUESTIONS SUBMITTED BY SENATOR GEORGE V. VOINOVICH

GREAT LAKES

Question. The Corps has dredged at less than the "break-even" line for virtually every year in the last decade for the Great Lakes. The only year, fiscal year 2008, in the last decade when the Corps dredged above the break-even point occurred because Congress added significant funding for that purpose. The Corps responded with a proposed administration Great Lakes budget for fiscal year 2009 that drastically cut the enacted amount. Please explain why there is so much resistance to dredging at or above the break-even point? Is it common in other regions to hit the break-even level of dredging only occasionally over an extended period of years?

Answer. The President's fiscal year 2010 budget for navigation Operation and Maintenance for the Great Lakes is a $4 million increase over the fiscal year 2009 program. Competition for Federal funds is very keen and gets tighter each year. Our Operation and Maintenance (O&M) funding requirements continue to grow as the infrastructure ages, newly constructed projects are added to our inventory, and costs increase. The Corps budgets for many worthwhile operation and maintenance needs across the entire spectrum of Civil Works projects by prioritizing projects based on maximizing benefits. In navigation, the focus is on harbors and waterways that have high volumes of commerce.

Question. The 2008 Army Corps document, Great Lakes Navigation System: Economic Strength to the Nation, describes the Great Lakes as having a dredging backlog that has "grow[n] to an unprecedented level in major navigation channels and harbors." How can the Corps ever address the estimated $200 million Great Lakes dredging backlog when the Corps keeps dredging at less than the break-even level?

Answer. The Corps has not been able to keep pace with annual channel sedimentation and within a relatively short period (e.g., 5 years) cannot address prior years' accumulations (backlog) under historical funding levels. In fiscal year 2008 the Corps reduced the backlog in dredging quantity from 18 million cubic yards to 17 million cubic yards. Once the Corps completes the dredging funded by the fiscal year 2009 Omnibus and Recovery Act appropriations, the backlog will be reduced to 15.3 million cubic yards. These appropriations enabled us to address the backlog dredging needed to move toward a high performing Navigation system.

The Corps could address the dredging backlog by planning other possible alternative control measures including higher efficiencies and a Demonstration Regional Commercial Efficiency Dredging Program. While the Corps always seeks to execute our programs in the most efficient manner possible, efficiencies addressing the dredging process are currently under review. For example, working with the States and other agencies toward less restrictive environmental windows to increase the time available to dredge in particular harbors will help reduce costs. The Corps plans to work with dredging contractors to find ways to reduce costs and plan to work with States to explore reducing restrictions on open water disposal and thus reduce filling rates for expensive Confined Disposal Facilities.

The Corps will renew emphasis on beneficial use of dredged material and to open a dialog with State agencies for a scientifically-driven review of open water disposal policies to ensure that the environmental protections are achieved at the least cost to the taxpayers. A technical plan "Demonstration Regional Commercial Efficiency Dredging Program" using highly efficient, more technically advanced equipment to augment the typical annual dredging process will be prepared. This is the most promising prospective remedial action to address the dredging backlog but must be worked in concert with the other potential efficiency improvements. Solutions will be planned considering other competing national needs which have historically challenged resourcing backlog projects in the Great Lakes; however our goal is unwavering to meet the needs of waterborne commerce on the Great Lakes by making steady progress in reducing the dredging backlog.

Question. Does the Corps consider the "source of funds" when making budget decisions? For example, shouldn't a project funded by industry via the Harbor Maintenance Trust Fund receive a higher priority than one funded by the taxpayers or cost shared by the taxpayer? Why doesn't the Corps spend what it collects from the Harbor Maintenance Trust Fund on eligible projects?

Answer. The Corps of Engineers has a number of cost-sharing authorities for the Civil Works program. The source of funds is just one of many factors considered in the budget development process. The Corps of Engineers' overall Operation and Maintenance (O&M) program is prioritized for all missions, including navigation, flood risk management, hydropower, etc. Funding is budgeted for the diverse Civil Works missions based on various metrics and priorities within available resources,. and other critical mission areas would be adversely impacted if the funding for those activities were reduced to accommodate additional funding for HMTF funded activities.

Question. The Corps uses different metrics to prioritize projects. Would it make sense to use the same metric for all parts of the country? Would transportation rate savings be a more appropriate metric than tons or ton-miles? Should the same metric be used for domestic transportation systems and a different metric for import/export systems? Should all tons be treated equally or should a domestic ton that creates value for Americans on both ends of the trip be treated differently from one that imports products while exporting jobs.

Answer. Harbors and waterways are vital components of the Nation's transportation system. The Corps funds many worthwhile maintenance needs across the entire spectrum of Corps of Engineers Civil Works projects by prioritizing projects based on maximizing benefits. In navigation, the focus is on harbors and waterways that have high volumes of commerce. Funding is also based on other factors, particularly those that serve as critical harbors of refuge, subsistence harbors, facilitate U.S. Coast Guard search and rescue operations, supply energy needs to communities, and those that play an important role in national security and defense. The Corps is developing the necessary tools to use a risk-informed, asset management based approach to prioritizing funding and to evaluate the Federal return on investment. These tools will help in making better funding decisions than tons or ton-miles. In the mean time, the approach outlined above assists in making the best use of constrained resources and provides for commercial goods to reach the market and contribute to the economic well being of the Nation.

QUESTIONS SUBMITTED TO HON. MICHAEL L. CONNOR

QUESTIONS SUBMITTED BY SENATOR BYRON L. DORGAN

RURAL WATER

Question. In prior years I have talked about the drought situation in the West particularly as it relates to North Dakota. As we know, that is not the situation this year. However, can you talk about the drought situation in the West and what we should expect based on current models?

Answer. Without significant snow pack or substantial rainfall, current drought conditions are expected to continue. Precipitation outlooks are generally unreliable beyond 3 months, and Reclamation itself does not forecast weather or drought conditions. Reclamation tracks current drought conditions based on information provided by other agencies focused on weather, including the National Oceanic and Atmospheric Administration's Climate Prediction Center (http://www.cpc.noaa.gov/), and the Drought Monitor, managed by the National Drought Mitigation Center (http://www.drought.unl.edu/dm/monitor.html).

Reclamation is working, together with other agencies, to promote the development of climate science and tools that will allow us to evaluate the impacts of climate change on water supplies. Reclamation has formed a Federal Climate Change and Western Water Group (CCAWWG) dedicated to providing scientific and research collaboration in support of Western water management as climate changes.

Question. There are a number of projects in the fiscal year 2009 Energy and Water Act that were not included in the President's fiscal year 2010 budget request. Can you provide us the capability amounts needed for those projects?

Answer. All rural water projects are included in the President's fiscal year 2010 budget request.

Question. I am happy to see that you have included all of the currently funded rural water projects in your budget. Although some are funded at very low levels. How did you arrive at the funding decisions for these projects?

Answer. Rural water projects included in the fiscal year 2010 President's budget request followed the criteria established by Reclamation which first provide for the required O&M component and then for projects nearest to completion and projects that serve on-reservation needs.

Question. How are we ever going to make progress on completing these projects, at these low budget levels? Inflation is going to increase the project cost faster than the funding we are investing.

Answer. Reclamation is making significant progress in funding rural water projects throughout North and South Dakota and Montana. ARRA funds in the amount of $200 million were allocated to rural water projects. The Mid-Dakota rural water project was completed in fiscal year 2006 and Mni Wiconi is scheduled to be completed by 2013.

TITLE XVI

Question. Title XVI programs are not well supported by the administration. Can you explain what the issues are with this program? It seems the program would be a good fit with Reclamation's mission of bringing water and power to the west.

Answer. The title XVI Water Reclamation and Reuse Program is an important part of Reclamation's mission and is a key element of Reclamation's Water Conservation Initiative to address 21st century water challenges. Projects funded through the title XVI program enable water to be reused, thereby improving efficiency, providing flexibility during water shortages, and diversifying the water supply. In addition to the fiscal year 2010 request, $135 million of funding under the American Recovery and Reinvestment Act of 2009 has been allocated to title XVI projects.

Question. What modifications do you believe could be made to the title XVI program that would make it more acceptable to the administration?

Answer. Reclamation recognizes that water reuse is an essential tool in stretching limited water supplies in the West. Under the President's budget request, the title XVI program will be part of a Water Conservation Initiative—along with the Challenge Grant program and Basin Study program—to address increasing water demands and decreasing water supplies due to extended droughts and climate change. Reclamation looks forward to working with the subcommittee to make the title XVI program as effective as possible as part of this coordinated approach to addressing 21st century water challenges.

Question. How much of a backlog currently exists in the currently authorized title XVI program?

Answer. There are currently 53 authorized title XVI projects, including new projects authorized as a result of the Omnibus Public Land Management Act of 2009 (Public Law 111–11).

AGING INFRASTRUCTURE

Question. The recently passed Lands Bill gave Reclamation the authority to address rehabilitation of its aging infrastructure. Prior to the passage of this legislation this rehabilitation work would have been a non Federal responsibility. Recognizing that this is a relatively new authority, has Reclamation established guidance for how this program is to be implemented?

Answer. Reclamation is currently developing guidance regarding the implementation of this program. Similar programs designed to assist Reclamation project beneficiaries in financing the reimbursable costs of extraordinary maintenance and rehabilitation work have been implemented by Reclamation in the past, and we are drawing on that experience in developing implementation guidance.

Question. Has Reclamation evaluated the condition of this infrastructure so that this work could be prioritized in a meaningful manner?

Answer. Reclamation periodically evaluates the condition of its facilities through existing review programs. The recommendations resulting from the reviews are the basis for prioritization of funding for identified needs.

Question. The language in the lands bill makes this work reimbursable over a period not to exceed 50 years. Will this be affordable to the non-Federal sponsors that most need this assistance?

Answer. Current law requires the non-Federal sponsors to pay for their allocated portion of this work in advance or repay costs within the current year when work is performed. Allowing repayment over a term of up to 50 years will greatly ease the burden these entities have faced in the past in advancing or repaying the reimbursable costs that would be allocated to reimbursable project purposes. Reclamation would continue to pay the costs that would be allocated to non-reimbursable project purposes. However, given that some of the major repair work needed will be very costly, and that interest will be assessed on the reimbursable obligations, some project sponsors will still face challenges in repaying these costs. It is important to remember that non-Federal sponsors, in many cases, are responsible for repaying their allocated portions of the capital in addition to operations and maintenance costs of the Federal facilities. This law allows more flexibility to make payments over time, thereby reducing or minimizing long term Federal involvement.

Question. With much of Reclamation's infrastructure more than 50 years old, this problem is only going to increase. Has Reclamation developed contingencies to address failures of this infrastructure?

Answer. Assuming that the reference to failures is in the context of not being able to continue water deliveries, this would pose a public policy question regarding the costs and benefits associated with major Federal investment in recapitalizing this infrastructure, as addressed in responses to Questions 12 and 13.

Question. Would a cost shared Federal recapitalization of infrastructure that has exceeded its economic life make sense to consider?

Answer. Reclamation believes that the Omnibus Public Land Management Act (Public Law 111–11) provides the authority to undertake such a program, and plans to consider the appropriateness of funding requests to supports these efforts on a project-by-project basis.

Question. What would be required to establish a program like this in Reclamation?

Answer. In order to establish an effective program to address aging infrastructure under the authority of the Omnibus Public Land Management Act, Public Law 111–11, Reclamation will need to establish procedures for allocating costs among reimbursable and non-reimbursable project purposes, set standards for appropriate repayments terms within the prescribed limits, and prioritize the use of available funds among its many aging facilities.

QUESTIONS SUBMITTED BY SENATOR PATTY MURRAY

ODESSA SUBAREA SPECIAL STUDY

Question. Commissioner Connor, I am disappointed that the Odessa Subarea Special Study, which was included in the fiscal year 2009 President's budget request, has been eliminated in the fiscal year 2010 President's budget request. As you know, the Columbia Basin Project is a critical tool for farmers in my home State of Washington. Securing a reliable surface water supply for the producers is impor-

tant to ensuring the continuation of agriculture in Central Washington while protecting our groundwater supplies. Can you tell me why this project was eliminated in the President's budget request?

Answer. Reclamation recognizes the importance of Columbia Basin water issues; however, faced with significant competing demands for aging infrastructure, satisfying Endangered Species Act regulatory requirements on operating projects, and other high priority water issues throughout the 17 Western States, no funding was included in the fiscal year 2010 President's budget. Reclamation also understands the importance, specifically, of the Odessa Subarea Special Study (Study). Reclamation has partnered with the State of Washington (State) to investigate the possibility of continuing development of the Columbia Basin Project to deliver project surface water to lands currently using ground water in the Odessa Subarea. Reclamation will continue to work with the State to bring the Study to completion as soon as possible. The State has identified the declining Odessa Subarea aquifer as the highest priority issue to address in the Columbia River Basin. The State will continue to fund the study in fiscal year 2010 and fiscal year 2011.

Question. It is my understanding that the environmental impact statement analysis of the alternatives identified in the appraisal-level investigation is underway, and the State of Washington and the Bureau are working together to complete this work. When do you anticipate completion of the feasibility study? Are you still on track for completion in 2011?

Answer. Reclamation anticipates that the study may need to be extended. Reclamation and the State of Washington Department of Ecology (Ecology) are jointly preparing an environmental impact statement (EIS) to meet the National Environmental Policy Act and State Environmental Policy Act requirements. The draft EIS is currently scheduled for release to the public in spring 2010, with the final EIS scheduled for spring 2011.

Question. Now that the appraisal-level investigation has been completed and the path forward has become more clear, an increase in the annual funding level will be needed to make sure the study is completed in a timely fashion. Unlike this year, can we expect to see future requests from the Bureau to reflect this?

Answer. There will be a continued level of commitment from Reclamation to complete the study in fiscal year 2011. The State has indicated a continued level of commitment in 2010 and 2011.

WASHINGTON STATE ARRA FUNDED PROJECTS

Question. Commissioner Connor, as you know, my State has many ready to go construction projects within the Bureau's purview, and as such was a beneficiary of Recovery Act funding, which I am thrilled about. Can you please provide an update on these projects?

Answer. We too are pleased that so many worthy projects in the State of Washington received Recovery Act funding. The following is an update of those projects:

The following contracts and work have been awarded:

—Leavenworth National Fish Hatchery Complex—an Indefinite Delivery/Indefinite Quantity (IDIQ) task order was awarded for the design of a water supply replacement system for the intake facility. Amount $780,000.

—Leavenworth National Fish Hatchery Complex—IDIQ task order was awarded for survey work for the repair of the adult holding pond. Amount $33,000.

—Columbia/Snake River Habitat Projects hired a three-person crew to work on the Methow Habitat Project Evaluation to meet monitoring requirements. Amount $130,000.

The following contracts are out for solicitation:

—Roza Roller Gates solicitation was issued with an estimated award of early October 2009 and construction projected to begin late October 2009. Estimated cost $4.9 million.

—Weber Siphon Complex solicitation was issued with an estimated award of late September 2009 and construction projected to begin late October 2009. Estimated cost is $49 million.

—Potholes Supplemental Feed Route—Pinto Dam and Brooks Lake solicitation was issued with an estimated award of mid-September 2009 and construction projected to begin mid-October 2009. Estimated cost is $3.1 million.

—Grand Coulee Maintenance items have been advertised for bid on E–BUY with an estimated award date of mid-August 2009. Estimated amount is $890,000.

The following items are either in the review stage or being prepared:

—Remaining Grand Coulee Maintenance items being reviewed for ARRA compliance requirements in our Denver office.

—Umatilla Project—Modifications and improvements on water delivery system being reviewed for ARRA compliance requirements in our Denver office.
—Sunnyside Division Board of Control—the financial assistance agreement to the Sunnyside Board of Control for piping three large laterals is expected to be signed in mid-September.
—Columbia/Snake River Habitat Projects—the financial assistance agreement to the Methow Salmon Recovery Foundation for two fish habitat improvement projects is expected be signed in early September.

Question. As you know, the Bureau owns billions of dollars worth of irrigation infrastructure all across the West, and the infrastructure is aging and in need of significant investment to maintain efficient operation. We have authorized and directed the Bureau to develop a Federal loan guarantee program to assist operators of Reclamation projects in securing low interest loans to encourage investment in Federal infrastructure.

Can you please tell me the status of this program?

Answer. This program has not yet been implemented. A proposed rule for the program has been published and comments were received. We will continue to keep Congress informed about the status of the program.

Question. Do you think that this program is successful in encouraging local project operators to make these kinds of investments in our Federal facilities?

Answer. The program has not been implemented, but we will continue to keep Congress informed about its status.

Question. Are there other ways to encourage this investment?

Answer. Section 9603 of the Omnibus Public Land Management Act of 2009 (Public Law 111–11) was enacted to assist Reclamation project beneficiaries in paying for extraordinary operation and maintenance costs. Public Law 111–11 allows repayment of extraordinary O&M costs allocated to the authorized reimbursable purposes of the project within 50 years, with interest.

QUESTIONS SUBMITTED BY SENATOR ROBERT F. BENNETT

QUAGGA MUSSELS

Question. Quagga Mussels are becoming more of a problem in western waters and are affecting Reclamation projects. How much funding is included in Reclamation's budget to address the control of Quagga Mussels?

Answer. In fiscal year 2009, Reclamation-wide appropriated funding for addressing the control of invasive mussels (both Quaqqa and Zebra mussels) includes just over $2.0 million. This funding encompasses activities related to the prevention of spread, early detection and rapid response for new infestations, control and management, research, and outreach and education. The fiscal year 2010 appropriated budget request totals nearly $3.5 million. In addition to appropriated funding, there are also direct or contributed funds and in-kind services to be provided by various partners and customers estimated to be nearly $375,000 and $475,000 in fiscal year 2009 and fiscal year 2010, respectively. Reclamation also received $4.5 million in ARRA funding for monthly testing of 60 Reclamation reservoirs for presence of mussel larvae. This activity will continue through 2010.

Question. What are the costs to Reclamation to deal with Quagga Mussels at Reclamation projects?

Answer. Reclamation is continually working with its regional and area offices to consolidate invasive mussel related cost information. Appropriated Reclamation funding expenditures in fiscal year 2008 and fiscal year 2009 are estimated to total approximately $3.5 million and reflect Reclamation-wide costs to deal with invasive mussels to date. Future costs are expected to escalate as invasive mussels continue to spread throughout Reclamation in the 17 Western States.

Question. Does Reclamation have a research and development program to study Quagga Mussels?

Answer. Reclamation's Research and Development (R&D) Office has made invasive mussels a top priority. Zebra and Quagga mussel research under Reclamation's Science and Technology Program was started in 2008 to address both existing and anticipated mussel impacts at Reclamation facilities throughout the Western United States. The emphasis is on monitoring, early detection, control, and mitigation to maintain Reclamation's water and hydropower operations. The goal is broad application of promising facilities protection technologies and strategies. Specific investigations seek to improve early detection methods, infrastructure coatings to prevent mussel settlement, mussel resistant fish screens, use of filters and Ultraviolet (UV) light systems, development of a bacterial product (*Pseudomonas fluorescens*) to

kill mussels, control using natural predators, addressing post-infestation rapid die-off impacts, and assessing mussel impacts in river and reservoir environments.

Question. How much funding has Reclamation included in the fiscal year 2010 budget to study these invasive species?

Answer. Reclamation's fiscal year 2010 R&D Office budget request includes $1.49 million for invasive mussel research.

DESALINATION RESEARCH AND DEVELOPMENT

Question. What research and development plans does Reclamation have for the Brackish Groundwater National Desalination Research Facility?

Answer. In general, the work at this facility will focus on improvement and testing of technologies for the treatment of inland brackish groundwater and disposal of concentrate, with special emphasis on the use of renewable energy to drive such processes.

Research funds for the Brackish Groundwater National Desalination Research Facility (BGNDRF), appropriated to Reclamation under the Desalination Act of 1979, were earmarked to New Mexico State University in fiscal year 2008 ($3.365 million) and fiscal year 2009 ($2.0 million). For fiscal year 2010, we requested $1.6 million for O&M of the BGNDRF, and $2.133 million for research on advanced water treatment technologies, some of which will occur at the facility.

Research to date at BGNDRF has included work with Sandia National Laboratories and a private sector company looking at an innovative concentrate disposal method and testing of new membranes developed by a university through an Office of Naval Research grant. Also underway is concentrate disposal testing by Veolia Water and electro-dialysis testing with New Mexico State University and General Electric. Other projects are in the discussion stages.

The facility will provide all the requirements for researchers working with desalination systems, concentrate management issues, renewable energy/desalination hybrids, and rural systems.

Question. Will the funding budgeted allow for meaningful research at the facility?

Answer. Historically, Reclamation has ensured that research appropriations produce the highest quality products by defining the research objectives to address the highest-priority questions, and funding research through an open, competitive, peer reviewed process. These have been the administration's standards for research administration.

This approach will be used to administer research at the BGNDRF facility for those appropriations that Reclamation controls. The amounts requested in the President's 2010 budget are sufficient to undertake important work advancing the treatment of brackish groundwaters.

Reclamation's ability to ensure meaningful research is limited to the extent that the funds appropriated for this research are earmarked without an open, competitive process.

Question. What other advanced water treatment options are showing promise for impaired groundwater?

Answer. Many technologies exist to treat a range of brackish waters. Reclamation focuses its research on technologies that may represent a significant breakthrough in either cost reduction or effectiveness of treatment. Currently, two of the most promising technologies that Reclamation is developing are: (1) a truly chlorine-resistant thin-film composite reverse osmosis membrane that will allow pre-treatment with chlorine to prevent bio-fouling without the degradation of the membrane, and (2) a more efficient cellulose-triacetate membrane that is naturally chlorine resistant. Both technologies will likely be tested at the BGNDRF.

Reclamation is also working with other Government agencies, universities, nonprofits, and the private sector. Not only are there new membrane formulations being created and tested by Reclamation and others, innovative work is continuing on the development of cost effective concentrate disposal, reduced energy consumption/lower CO_2 footprint/renewables, reduced fouling, and alternative desalination technologies such as forward osmosis, membrane distillation, electro-dialysis, thermal technologies and others.

Question. Do you see any potential for Reclamation becoming involved in the construction of desalination plants? Why?

Answer. Historically, Reclamation has focused upon research and development of advanced water treatment technologies up through pilot scale testing and demonstration, and moving those technological advances to the private sector for commercialization. Given the very large global industry around design and construction of desalination plants, there does not appear to be a need for Reclamation to enter into this domain. However, Reclamation may be able to play a role in providing de-

signs or reviewing designs for systems that are not a focus of the mainstream design and construction industry, for example for small-scale plants that are part of a Reclamation Rural Water project, or applications on Indian lands, or applications that are otherwise integrated with Reclamation projects.

Question. You have only budgeted about $500,000 for drought assistance in fiscal year 2010. Is that funding sufficient to address the drought issues that are anticipated next year?

Answer. Reclamation prepares its budgets 2 years in advance. Consequently, we are unable to forecast this kind of emergency. However, we make every effort to address the greatest need with the funds available and to put our efforts into funding on-the-ground activities.

The amount requested for Drought Program funding in fiscal year 2010 is primarily the result of a relatively flat overall budget for Reclamation and increasing costs associated with site security, dam safety, project rehabilitation, and operation and maintenance, to name just a few. Reclamation has many important programs that need to be funded, and has made its best effort to develop a budget that adequately balances the competing needs for these different programs.

In addition to the $500,000 requested for drought assistance in fiscal year 2010, Reclamation recently announced $40 million in funding available under the American Recovery and Reinvestment Act (ARRA) of 2009 to projects that will address the impacts of drought in California. The $40 million in ARRA funding will be used to fund drought projects beginning this summer and continuing throughout 2010.

In addition to our Drought Program, Reclamation also addresses competing demands for finite water supplies through the Water Conservation Initiative. Reclamation has requested $46 million for the Water Conservation Initiative in 2010, which includes funding for the title XVI, Challenge Grant, and Basin Study Programs.

Question. In the fiscal year 2010 budget, the rural Water Program authorized in 2006 appears to be finally getting out of the evaluation and rule making phase into actually starting to address the water needs in western States. Can you update us on the status of this program?

Answer. The Rural Water Supply Act required that the Department of the Interior develop programmatic criteria for the new program and publish them in the Federal Register through a rulemaking process. In November 2008, the Department published an interim final rule (Rule) establishing comprehensive programmatic criteria governing eligibility, the prioritization of projects for funding, and the evaluation of studies completed under the program. The Rule became effective on an interim basis on December 17, 2008, and the 60-day public comment period ended on January 16, 2009. The Rule will be implemented upon completion of a set of guidelines or internal directives ("Directives and Standards") describing how the program will be implemented by Reclamation. The Directives and Standards will describe key aspects of program implementation, such as how Reclamation will receive and review applications, how Reclamation will review completed studies, and will specify the required content of appraisal and feasibility studies completed or reviewed under the program. By establishing uniform requirements for program implementation, the Directives and Standards will help ensure that the program is implemented consistently, effectively and transparently across the organization.

QUESTIONS SUBMITTED TO REED MURRAY

QUESTIONS SUBMITTED BY SENATOR ROBERT F. BENNETT

Question. Mr. Reed, The budget for CUPCA is flat when compared to fiscal year 2009. Is this funding level sufficient to continue to make progress on this critical project?

Answer. The President's 2010 budget for CUPCA is sufficient to continue CUP construction and implementation of CUP mitigation and conservation activities.

Question. What is your total funding capability for CUPCA in fiscal year 2010?

Answer. The President's 2010 budget for CUPCA represents the funding capability of the CUPCA program.

Question. What will this additional capability accomplish?

Answer. Since the President's 2010 budget represents the CUPCA programs funding capability the CUPCA budget justification documents adequately describe the proposed 2010 accomplishments.

SUBCOMMITTEE RECESS

Senator DORGAN. This hearing is recessed.

[Whereupon, at 11:50 a.m., Thursday June 18, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 2010

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

NONDEPARTMENTAL WITNESSES

[CLERK'S NOTE.—At the direction of the subcommittee chairman, the following statements received by the subcommittee are made part of the hearing record on the Fiscal Year 2010 Energy and Water Development Appropriations Act.]

DEPARTMENT OF DEFENSE—CIVIL

DEPARTMENT OF THE ARMY

CORPS OF ENGINEERS—CIVIL

PREPARED STATEMENT OF THE RED RIVER VALLEY ASSOCIATION

Mr. Chairman and members of the subcommittee, I am Wayne Dowd, President, and pleased to represent the Red River Valley Association, 629 Spring St., Shreveport, Louisiana. Our organization was founded in 1925 with the express purpose of uniting the citizens of Arkansas, Louisiana, Oklahoma and Texas to develop the land and water resources of the Red River Basin.

The Resolutions contained herein were adopted by the Association during its 84th Annual Meeting in Shreveport, Louisiana, on February 19, 2009, and represent the combined concerns of the citizens of the Red River Basin area as they pertain to the goals of the Association. A summary of the civil works projects and requested funding is included in this testimony.

The President's fiscal year 2010 budget included $5.1 billion for the civil works programs. It is $350 million more than proposed in fiscal year 2009 and $300 million less than what Congress enacted in the fiscal year 2009 Omnibus bill, $5.4 billion. The problem is also how the administration distributes funds. A few projects received the full "Corps Capability" to the detriment of many projects that receive no funding. Even though this is one of the largest administrative budgets, the $5.1 billion level does not come close to the real needs of our Nation. A more realistic funding level to meet the existing needs of the civil works program is $8 billion for fiscal year 2010. The traditional civil works programs remain at the low, unacceptable level as in past years. These projects are the backbone to our Nation's infrastructure for waterways, flood prevention, water supply and ecosystem restoration. We remind you that civil works projects are a true "jobs program" in that up to 85 percent of project funding is contracted to the private sector; 100 percent of the construction, as well as much of the architect and engineering work. Not only do these projects provide jobs, but provide economic development opportunities for our communities to grow and prosper, creating permanent jobs.

We want to point out that we appreciate the funding Congress enacted in the fiscal year 2009 Omnibus Bill; however, it is $200 million less than appropriated in fiscal year 2008. We encourage Congress to increase the "water" share of the total Energy and Water bill closer to 20 percent to reach the $8 billion capability.

Another proposal allocates O&M funding by watershed regions and eliminates funding by individual project. We do not accept this concept since you will loose ownership and identity of each project; therefore, lose grass root support. If this was

done, due to reprogramming constraints, then reprogramming should be addressed. Major reprogramming issues are with CG projects, not with O&M projects. Fund O&M by project, not watershed basins.

We have great concerns over the issue of "earmarks". Civil Works projects are not earmarks! Civil Works projects go through a process; reconnaissance study, feasibility study, benefit to cost ratio test, EIS, peer review, review by agencies, public review and comment, final Chief of Engineer approval, authorization by all of Congress in a WRDA bill and signed by the President. WRDA 2007 added an independent review of major projects. No other Federal program goes through such a rigorous approval process. Each justified project "stands alone", are proven to be of national interest and should be funded by project. For most projects there is local sponsor cost sharing during the feasibility study, construction and for O&M. Those who have contributed, in most cases—millions of dollars—to the process, must have the ability to have a say for their projects to get funded. That voice is through their Congressional delegation. We believe that earmarks are not in the national interest, but it does not pertain to the civil works program. For civil works it is an issue of priority of projects to be funded and who will determine that, OMB or Congress! We hope Congress keeps their responsibility to set civil works priorities and to determine how its citizen's tax dollars are spent.

The President's budget proposes eliminating the current fuel tax to fund the Inland Waterways Trust Fund (IWTF) and replace it with a barge lock-use fee. This change creates an unfair tax to industries on waterways with locks versus waterways without locks. The needs of the IWTF should be analyzed and determine what increase to the existing fuel tax would maintain the necessary income flow to keep projects funded from the Inland Water Trust Fund. The lockage fee proposal is unfair to tributary waterways with locks and we request it not be implemented.

I would now like to comment on some of our specific requests for the future economic well being of the citizens residing in the four State Red River Basin regions. It is noted that at the time for testimony submission the details of the President's fiscal year 2010 budget have yet to be released.

Navigation.—The J. Bennett Johnston Waterway is living up to the expectations of the benefits projected. We are extremely proud of our public ports, municipalities and State agencies that have created this success. This upward "trend" in usage will continue as new industries commence operations. A major power company, CLECO, is investing $1 billion in its Rodemacher Plant near Boyce, Louisiana, on the lower Red River and has started moving over 3 million tons of "petroleum coke" and limestone, by barge, in the 4th quarter 2008. These projects are a reality and there are many more industries considering using our Waterway.

You are reminded that the Waterway is not complete, 6 percent remains to be constructed, $121 million. We appreciate Congress' appropriation level in fiscal year 2009 of $7,656,000. There is a capability for $21 million of work, but we realistically request $12 million to keep the project moving toward completion, "J. Bennett Johnston Waterway (CG)".

Now that the J. Bennett Johnston Waterway is reliable year round we must address efficiency. Presently a 9-foot draft is authorized for the J. Bennett Johnston Waterway. All waterways below Cairo, Illinois are authorized at 12-foot, to include the Mississippi River, Atchafalaya River, Arkansas River and Gulf Intracoastal Waterway. A 12-foot channel would allow an additional one-third capacity, per barge, which will greatly increase the efficiency of our Waterway and further reduce transportation rates. This one action would have the greatest, positive impact to reduce rates and increase competition, bringing more industries to use waterborne transportation. We request a 1-year reconnaissance study be funded to evaluate this proposal, at a cost of $100,000. Fact: Approximately 95 percent is already at 12-foot year round.

The feasibility study to continue navigation from Shreveport-Bossier City, Louisiana, into the State of Arkansas will be completed in CY 2010. This region of SW Arkansas and NE Texas continues to suffer major unemployment and this navigation project, although not the total solution, will help revitalize the economy. Due to the time lapsed in the study the "freight rates" calculated a number of years ago they must be re-evaluated this year. We request funding of $100,000 to conduct the re-evaluation of freight rates, "Navigation into SW Arkansas".

Flood Prevention.—What will happen when we ignore our levee systems? We know the Red River levees in Arkansas do not meet Federal standards, which is why we have the authorized project, "Red River Below Denison Dam, TX, AR & LA". Now is the time to bring these levees up to standards, before a major flood event, which will occur.

We continue to consider flood control a major objective and request you continue funding the levee rehabilitation projects ongoing in Arkansas. Five of 11 levee sections have been completed and brought to Federal standards.

The levees in Louisiana have been incorporated into the Federal system; however, they do not meet current safety standards. These levees do not have a gravel surface roadway, threatening their integrity during times of flooding. It is essential for personnel to traverse the levees during a flood to inspect them for problems. Without the gravel surface the vehicles will cause rutting, which can create conditions for the levees to fail. A gravel surface will insure inspection personnel can check the levees during the saturated conditions of a flood.

Appropriations of $15 million will construct one more levee section in Lafayette County, AR and continue the rock surfacing of levees in Louisiana, "Red River Below Denison Dam, AR & LA".

Bank Stabilization.—One of the most important, continuing programs, on the Red River is bank stabilization in Arkansas and North Louisiana. We must stop the loss of valuable farmland that erodes down the river and interferes with the navigation channel. In addition to the loss of farmland is the threat to public utilities such as roads, electric power lines and bridges; as well as increased dredging cost in the navigable waterway in Louisiana. These bank stabilization projects are compatible with subsequent navigation into Arkansas and we urge that they be continued in those locations designated by the Corps of Engineers to be the areas of highest priority. We appreciated the Congressional funding in past fiscal years and request you fund this project at a level of $11 million in fiscal year 2010, "Red River Emergency Bank Protection".

Water Quality.—The Assistant Secretary of the Army (Civil Works), in October 1998, agreed to support a re-evaluation of the Wichita River Basin tributary of the project. The re-evaluation report was completed and the Director of Civil Works signed the Environmental Record of Decision. The plan was found to be economically justified. Then the ASA (CW) directed that construction would not proceed until a local sponsor was found to assume 100 percent of the O&M for the project. The 2007 WRDA bill included language that clarified that all aspects of this project will be at full Federal expense, to include O&M.

Over the past years there has been a renewed interest by the Lugart-Altus Irrigation District to evaluate construction of Area VI, of the Chloride Control Project, in Oklahoma. They have obtained the support of many State and Federal legislators, as well as a letter from the Oklahoma Governor in support of a re-evaluation report.

Total request for the "Chloride Control Project": $9,000,000 for the Texas and Oklahoma areas.

Water Supply.—Lake Kemp, just west of Wichita Falls, TX, is a major water supply for the needs of this region. Due to siltation the available storage of water has been impacted. A reallocation study is needed to determine water distribution needs and raising the conservation pool. Total O&M of $664,000 is requested for fiscal year 2010 ($214,000 is required for the base annual O&M, $300,000 for the study and $150,000 for service bridge and gate repair).

A water re-allocation study has been completed for Lake Texoma. It will provide for an additional 600,000 acre-feet for municipal use. The release of the study has been delayed at the Corps HQ for over a year. Congress needs to request that this re-allocation study be approved and released.

Studies.—We have a number of General Investigation (GI) studies that have been funded and have local sponsors prepared to cost share feasibility studies. Some of those important studies include: Bossier Parish Flood Control Study, LA—$350,000; Cross Lake Water Supply Study, LA—$100,000; SE Oklahoma Water Resource Study, OK—$500,000; SW Arkansas Study, AR—$100,000; Washita River Basin, OK—$500,000 and Wichita River Basin, TX—$100,000. These studies are important to have projects ready for future construction.

Operation & Maintenance.—Full O&M capability levels are not only important for our Waterway project but for all our Corps projects and flood control lakes. The backlog of critical maintenance only becomes worse and more expensive with time. The "2007 Summer Flood of Record" was devastating to the recreation industry at Lake Texoma, on the main stem Red River, as well as a number of other Oklahoma lakes. We urge you to appropriate funding to address this serious issue, either through an emergency supplemental or the appropriation bill. We request that the Corps O&M projects be funded at the expressed, full Corps capability.

American Recovery and Reinvestment Act of 2009.—The original administrative submission did not include civil works funding. We want to thank Congress for including $4.6 billion in the "stimulus" package for civil works projects, especially in the O&M account. These additional funds will be important to address our long list of backlog needs.

Thank you for the opportunity to present this testimony and project details of the Red River Valley Association on behalf of the industries, organizations, municipalities and citizens we represent throughout the four State Red River Valley region. The Civil Works program directly relates to national security by investing in economic infrastructure. If waterways are closed companies will not relocate to other parts of the country—they will move over seas. If we do not invest now there will be a negative impact on our ability to compete in the world market threatening our national security.

RED RIVER VALLEY ASSOCIATION FISCAL YEAR 2010 APPROPRIATIONS—CIVIL WORKS [1]

[Dollars in thousands]

	Fiscal Year 2009 Approp Omnibus	RRVA Fiscal Year 2010 Request	President Fiscal Year 2010 Budget	Local Sponsor Requirements
Studies (GI):				
Navigation into SW Arkansas: Feasibility		$100		(ARRC)
Red River Waterway, LA–12' Channel, Recon.		100		(RRWC)
Bossier Parish, LA	$191	350		(Bossier Levee)
Cross Lake, LA Water Supply Supplement	229	100		(Shreveport)
SE Oklahoma Water Resource Study: Feasibility.	311	500		(OWRB)
SW Arkansas Ecosystem Restoration: Recon Study.	143	184		(?)
Cypress Valley Watershed, TX		100		(?)
Sulphur River Basin, TX		1,000		(Sulphur Auth)
Washita River Basin, OK	191	500		(L)
Wichita River Basin above Lake Kemp, TX: Recon.		100		(L)
Red River Above Denison Dam, TX & OK: Recon.		100		(L)
Red River Waterway, Index, AR to Denison Dam.		44		(?)
Mountain Fork River Watershed, OK & AR, Recon.				(?)
Walnut Bayou, Little River, AR		100		(ANRC)
Red River Waterway, Index to Denison, Bendway Weir.				(?)
Construction General (CG):				
Red River Waterway: J.B. Johnston Waterway, LA.	7,656	21,000		(RRWC)
Chloride Control Project, TX & OK	2,201	9,000		N/A
Red River Below Denison Dam; AR & LA	2,105	11,000		(Levee Districts)
Bowie County Levee, TX				(Levee Districts)
Red River Emergency Bank Protection	2,817	15,000		(Levee Districts)
Big Cypress Valley Watershed, TX: section 1135.		1,450		(Jefferson)
Palo Duro Creek, Canyon, TX: section 205		100		(Canyon, TX)
Millwood, Grassy Lake, AR: section 1135	([2])	350		(?)
Little River County/Ogden Levee, AR, PED		300		(ASWC)
McKinney Bayou, AR, PED				
Miller County Levee, AR, section 1135				(Miller Levee)
Operation and Maintenance (O&M):				
J. Bennett Johnston Waterway, LA	9,797	16,230		
Lake Kemp, TX—Total Need	198	664		
Basic Annual O&M		214		
Reallocation Study		300		
Service Bridge & Gate Repair		150		
Lake Texoma, TX & OK—Total Need	6,164	9,393		
Basic Annual O&M		6,393		
Suppl. EIS		1,000		
Backlog Maintenance		2,000		

RED RIVER VALLEY ASSOCIATION FISCAL YEAR 2010 APPROPRIATIONS—CIVIL WORKS [1]—Continued

[Dollars in thousands]

	Fiscal Year 2009 Approp Omnibus	RRVA Fiscal Year 2010 Request	President Fiscal Year 2010 Budget	Local Sponsor Requirements
Chloride Control Project, TX & OK	1,348	5,824		

[1] Depending on final Stimulus funding RRVA fiscal year 2010 requests may change. Details of the President's fiscal year 2010 budget have NOT yet been released.
[2] YES.

NOTE: Local Sponsor Column—Sponsor indicated in ( ); (?) indicates No Sponsor identified and need one to continue (L) indicates Sponsor not required now but need one for feasibility; N/A—No Sponsor required.

PREPARED STATEMENT OF THE NATURE CONSERVANCY

Mr. Chairman and the members of the subcommittee, thank you for the opportunity to present The Nature Conservancy's recommendations for fiscal year 2010 appropriations for the U.S. Army Corps of Engineers (Corps) and Bureau of Reclamation.

The Nature Conservancy's recommendations represent a priority set of efforts that are both individually important and collectively designed to demonstrate innovations in restoration to help guide future resource allocation. Further, if done well, ecosystem restoration projects pay dividends through services such as provision of more reliable and higher quality water, natural flood attenuation, sustaining commercial fisheries, and supporting economically-important outdoor recreation. Moreover, the Nation's resiliency to climate change will be substantially dictated by the health of our ecosystems. In short, we believe the public investments we are requesting now will pay far larger dividends for decades to come.

CORPS CONSTRUCTION PRIORITIES

Continuing Authorities Program.—We thank the subcommittee for continuing its strong support of the section 1135: Project Modifications for Improvement of the Environment and section 206: Aquatic Ecosystem Restoration programs. However, demand for these programs continues to outstrip funding. The Conservancy requests that the programs be fully funded by appropriating $40 million for section 1135 and $50 million for section 206.

The Conservancy seeks funding for two section 1135 projects. The Spunky Bottoms project (IL) is a model floodplain restoration and reconnection effort on the Illinois River that needs $400,000 to complete a feasibility study in fiscal year 2010; the Conservancy is the non-Federal cost share partner. Additional dollars will be necessary for the planning, specifications, construction and monitoring phases, totaling approximately $7.5 million. The Chain Bridge Flats project (D.C.) needs $100,000 to complete a reconnaissance report to restore a globally rare habitat along the Potomac River.

The Conservancy also seeks funding for three section 206 projects: Emiquon Preserve (IL), a floodplain restoration and reconnection project that needs $600,000 to complete a feasibility study, sign a project partnership agreement, and begin design; Camp Creek (OR), a headwaters stream restoration project that needs $575,000 to sign a PCA and complete construction; and Navajo Reservation Implementation (NM), which needs $510,000 for restoration on the San Juan River. The Conservancy is the cost share partner for Emiquon and Camp Creek.

We continue to be concerned about the subcommittee's guidance for these programs. The prioritization requirements and "no new starts" rule in the fiscal year 2009 report block the implementation of important conservation priorities that enjoy strong support from their local communities. We urge the subcommittee to adopt a more flexible approach. Appropriating the requested amounts will help address the backlog in these programs, as will funds from the American Recovery and Reinvestment Act.

Estuary Restoration Program.—The Estuary Restoration Program is a national, multi-level, multi-agency strategy to restore our Nation's estuaries that benefits fish, shellfish and wildlife; improves surface and groundwater resources; provides flood control; and enhances recreational opportunities. The Conservancy supports $10 million for the Estuary Restoration Program in fiscal year 2010.

Upper Mississippi River Navigation and Ecosystem Sustainability Program.—The Navigation and Ecosystem Sustainability Program (NESP) is a dual purpose author-

ity for integrated management of the Upper Mississippi River (UMR) system's habitat and navigation facilities. All activities implemented under the existing Environmental Management Program (EMP) can be transitioned into NESP, but it is critical to fund both programs until the transition is complete. While the Corps has the capability to execute a $50 million budget for NESP in fiscal year 2010 for ecosystem restoration and navigation projects, and we support this funding level, we also recognize the current budgetary constraints and acknowledge that a more realistic NESP fiscal year 2010 new start request should be $35 million. The Conservancy also supports $33.2 million for EMP in fiscal year 2010.

Missouri River Fish and Wildlife Recovery Program (MRRP).—Under this program, the Corps has completed 30 projects in the lower Missouri basin States to assist in the recovery of three listed species, restoring more than 40,000 acres of habitat. New authority was provided in WRDA 2007 for the expenditure of funds in the upper basin States and for the Intake Dam project on the Yellowstone River in Montana. Construction of fish passage and screens at Intake Dam is a priority for the recovery of the endangered pallid sturgeon and other warm-water fish. The Conservancy supports $85 million for the MRRP in fiscal year 2010, including sufficient funding to continue progress on the design and construction of fish passage and screens at Intake Dam.

South Florida Everglades Ecosystem Restoration Program.—Corps flood control projects, coupled with agricultural and urban development, have degraded one of the most diverse and ecologically rich wetlands ecosystems in the world. WRDA 2007 authorized construction of the first projects under the Comprehensive Everglades Restoration Plan (CERP). We place priority on funding the restoration of the Kissimmee River, a project that is almost 75 percent complete and already a restoration success story. The Conservancy requests $300 million for the South Florida Ecosystem Restoration Program in fiscal year 2010.

Puget Sound and Adjacent Waters.—The Puget Sound and Adjacent Waters Program provides funding for early action projects to restore Puget Sound and its watershed. The Conservancy requests $3.5 million for Puget Sound and Adjacent Waters in fiscal year 2010. Identification of these early action projects is informed by the Puget Sound Nearshore Ecosystem Restoration project (in the Investigations account), for which the Conservancy requests $1.5 million in fiscal year 2010.

Hamilton City Flood Damage Reduction and Ecosystem Restoration.—This project will increase flood protection for Hamilton City, CA and surrounding agricultural lands and restore approximately 1,500 acres of riparian habitat. The PED phase for this project will be complete in fiscal year 2009, the non-Federal sponsor is in place and the project received construction authorization in WRDA 2007. The Conservancy supports $15 million in fiscal year 2010 to complete the first phase of construction.

Chesapeake Bay Oyster Recovery.—Eastern oyster populations in the Chesapeake Bay have been decimated from historical levels by a century of overfishing, disease and pollution. This project will help move the oyster population towards sustainable levels. The requested appropriation will create more than 60 acres of additional oyster habitat. The Conservancy supports $4 million in fiscal year 2010 for this program.

SUSTAINABLE RIVERS PROJECT

The Sustainable Rivers Project (SRP) is an initiative launched by the Corps that recognizes the urgent need to update decades-old water management practices to meet society's needs today and in the coming decades. The SRP is developing and demonstrating innovative approaches to reservoir operations that restore critical ecosystems and valuable ecosystem services, while continuing to provide for (and often improving) water supply and flood risk management. These innovative approaches also offer substantial promise for social and ecological adaptation to climate change. The SRP currently involves work in 8 river basins containing 36 Federal reservoirs, as well as training and development of next-generation decision support tools for water management. The Conservancy requests $3 million for the Corps' Institute for Water Resources to support engineering and scientific needs of current and new SRP sites.

Savannah Basin Comprehensive Water Resources Study.—The Savannah River basin is experiencing tremendous growth, and recent droughts have highlighted the need to comprehensively address water use issues in the basin. The reconnaissance phase of this study evaluated water management in the reservoirs and indicated that future needs may not be met under current management practices. The feasibility phase will consider a new set of rules that could meet future demands while

protecting more than 200 miles of river and tens of thousands of acres of wetlands. The Conservancy supports $250,000 in fiscal year 2010.

Willamette River Floodplain Restoration Study.—The Corps and the Conservancy are working together to identify ecological flow requirements downstream of Corps dams, and to incorporate those flows into dam operations. Initial efforts have focused on the Middle and Coast Forks of the Willamette, in conjunction with a study to identify floodplain habitat restoration opportunities, and implementation and monitoring of flow releases are ongoing. Flow analysis has begun in additional tributaries, with the ultimate goal of system-wide changes in dam operation and floodplain management to meet ecological goals. The Conservancy supports $150,000 in fiscal year 2010 to continue this study.

Connecticut River Watershed Study.—This project will restore 410 miles of river flow and thousands of acres of natural habitat in the Connecticut River Basin. The basin is a priority landscape for the Conservancy due to its high quality tributary systems, unique natural communities and multitude of ESA-listed species. The study identifies dam management modifications for environmental benefits while maintaining beneficial human uses. We support $450,000 in fiscal year 2010 for this study.

Bill Williams River—Alamo Dam.—Numerous Federal, State and private partners have invested significant funding in determining the flow needs of downstream ecosystems and working with the Corps to change operations at Alamo Dam to provide these flows. This request will provide additional baseline information about the River and continue long-term monitoring to guide future management actions on rivers across the southwestern U.S. The Conservancy supports an Operations and Maintenance appropriation for Alamo Dam in fiscal year 2010 that includes $250,000 for these purposes.

OTHER CORPS INVESTIGATION PRIORITIES

Thames River Basin Watershed Study.—The Thames River Basin ecosystem, including its tributaries to Long Island Sound, depends on naturally variable water flow, good water quality and suitable habitat. This study will determine what research and measures are necessary to improve the management of water control structures in the basin. We support $100,000 in fiscal year 2010 to complete the reconnaissance phase.

Middle Potomac River Watershed Comprehensive Study.—This study will develop a comprehensive, multi-jurisdictional sustainable watershed management plan for the Middle Potomac River watershed, balancing the ecological functions and services provided by the river with the human demands upon it. To support the completion of the watershed assessment, we support $844,000 in fiscal year 2010.

Yellowstone River Corridor Comprehensive Study.—Funding this ongoing study of economics, fisheries, and wetlands studies will help ensure that the longest free-flowing river in the lower 48 States maintains its natural functions while supporting irrigation and other economic uses of its waters. The Conservancy supports $750,000 for fiscal year 2010.

Lake Champlain Canal Feasibility Study.—Invasive species are the most significant threat to the native biodiversity of Lake Champlain in New York and Vermont. Several new invaders are poised to enter Lake Champlain through the Champlain Canal in coming years, and an invasive species dispersal barrier is urgently needed. The Corps is authorized to study the feasibility of such a barrier and to construct and operate it. The Conservancy supports $500,000 for the feasibility study in fiscal year 2010.

Susquehanna River Basin Low Flow Management and Environmental Restoration.—Drought conditions, combined with current and projected demands for water use, have the potential to impact natural ecosystems in the Susquehanna River basin and the upper Chesapeake Bay. This appropriation will fund a basin-wide study to investigate low flow conditions and establish ecologically based goals and standards for low flow management. The Conservancy supports $285,000 in fiscal year 2010 for this project.

Navajo Reservation Watershed Management, Restoration and Development.—The San Juan River watershed is severely impacted by water withdrawals, flow regulation at Navajo Dam and runoff from petroleum extraction and agriculture. This project will formulate a conservation strategy for the watershed within the Navajo Nation. The Conservancy supports $315,000 in fiscal year 2010 for this project.

Pecos River Environmental Management Planning.—The Pecos River below Santa Rosa Dam is severely affected by flow regulation, irrigation, water withdrawals and runoff, preventing native vegetation from regenerating and causing frequent drying. This project will help develop a comprehensive strategy that identifies key conserva-

tion targets, critical threats and practical actions to address them. The Conservancy supports $840,000 in fiscal year 2010 for this project.

CORPS EXPENSES

Mid-Atlantic River Basin Commissions.—We applaud the subcommittee for restoring Federal funding to the Delaware, Potomac, and Susquehanna River Basin Commissions in fiscal year 2009. They are essential to advancing and coordinating the water management and conservation interests of the Federal Government, the affected States, and the Conservancy. We support $2,365,000 for the Commissions in fiscal year 2010.

BUREAU OF RECLAMATION

Upper Colorado River Endangered Fish Recovery and San Juan River Basin Recovery Programs.—These programs take a balanced approach to restore four endangered fish species in the Colorado River system while allowing water use to continue in the arid West. A full appropriation will fund work on remaining major capital projects, including the completion of fish screens at the Hogback Diversion Dam and Tusher Wash Dam. The Conservancy supports $3.2 million in fiscal year 2010 for these Programs.

Platte River Recovery Implementation Program.—An agreement between the Governors of Wyoming, Nebraska and Colorado and the Secretary of the Interior sets forth a plan to restore five endangered or threatened species in the Platte River basin. The Conservancy supports $14,038,500 for this recovery effort in fiscal year 2010.

Over the course of the past 10 years, restoration funding through the Corps has frequently focused on a select set of large-scale programs. These programs have been essential to restoring and maintaining some of America's most precious and imperiled ecosystems. At the same time, the role of smaller-scale projects should not be underestimated for their cumulative benefit and power as demonstrations to guide broader-scale efforts. We encourage the subcommittee to address the needs of these critical projects while continuing to support large-scale programs.

All of the restoration projects supported in this testimony will create the same kinds of on-the-ground jobs created through the American Recovery and Reinvestment Act. The restored wetland and water resources resulting from these projects will also contribute ongoing value to local and regional economies through the important ecosystem services provided by healthy waterways and wetlands.

Thank you for the opportunity to present our comments on the Energy and Water Appropriations bill.

PREPARED STATEMENT OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

Mr. Chairman and members of the subcommittee, the American Society of Civil Engineers (ASCE) welcomes the opportunity to provide our views on the budget estimates for the U.S. Army Corps of Engineers (USACE or the Corps) and the U.S. Bureau of Reclamation (Bureau) for fiscal year 2010.

In its recent report on the concurrent resolution for fiscal year 2010, the House Budget Committee said that the United States faces two significant deficits: the first, a budget in deficit this year alone by $1.752 trillion, according to the Office of Management and Budget (OMB); the second, an economy running at 6.8 percent, or $1 trillion, below its potential.

These are daunting numbers, and Congress confronts a major challenge in funding the operations of the Government in light of the depressed economy and the continuing Federal deficits.

But ASCE believes the Nation faces a third deficit—one that is as important as the first two. The United States must manage a continuing infrastructure investment deficit. Federal outlays for basic public works systems have declined relative to gross domestic product (GDP) over the past several decades.

In its 2009 Report Card for America's Infrastructure, ASCE reported that the Nation needs to invest approximately $2.2 trillion over the next 5 years to maintain the Nation's total infrastructure in good condition.

Even with current and planned investments from Federal, State, and local governments in the next 5 years, the "gap" between the overall need and actual spending will total more than $1 trillion by 2014.

Within the Nation's general water resources alone, ASCE identified a 5-year funding gap of more than $20 billion.

Nowhere is the infrastructure investment deficit more acute than in our waterways. Of the 257 locks still in use on the Nation's inland waterways, 30 were built in the 19th century and another 92 are more than 60 years old. The average age of all federally owned or operated locks is nearly 60 years, well past their planned design life of 50 years. The cost to replace the present system of locks is estimated at more than $125 billion.

CONGRESS SHOULD APPROPRIATE $7 BILLION FOR THE U.S. CORPS OF ENGINEERS CIVIL WORKS PROGRAM IN FISCAL YEAR 2010

The U.S. Army Corps of Engineers has one of the Federal Government's largest environmental responsibilities. The Corps provides ecosystem restoration, constructs sustainable facilities, regulates waterways and manages natural resources, and cleans up contaminated military bases.

Forty-one States, 16 State capitals and all States east of the Mississippi River are served by commercially navigable waterways. The U.S. inland waterway system consists of 12,000 miles of navigable waterways in four systems that connect with most of the States in the United States. The entire system contains 257 locks. The waterways include the Mississippi River, the Ohio River Basin, the Gulf Intercoastal Waterway, and the Pacific Coast systems.

Three-quarters of the Nation's inland waterways (9,000 miles) are within the Mississippi River system. The next largest segment is the Ohio River system (2,800 miles). The Gulf Coast Intercoastal Waterway system is 1,109 miles, and the Columbia River system is only 596 miles long, the shortest of the four major systems.

The network includes nearly 11,000 miles of the "fuel-taxed inland waterway system." Commercial waterway operators on these designated waterways pay a fuel tax, deposited in the Inland Waterways Trust Fund, which funds half the cost of new construction and major rehabilitation of the inland waterway infrastructure.

Because of their ability to move large amounts of cargo, the inland waterways are a strategic economic and military resource. A recent analysis by the U.S. Army War College concluded that "the strategic contributions of these inland waterways are not well understood. The lack of adequate understanding impacts decisions contributing to efficient management, adequate funding, and effective integration with other modes of transportation at the national level. Recommendations demonstrate that leveraging the strategic value of U.S. inland waterways will contribute to building an effective and reliable national transportation network for the 21st century."

The current system of inland waterways lacks resilience in that waterway usage is increasing but facilities are aging and many are well past their design life of 50 years. Recovery from any event of significance would be harmed by the age and deteriorated condition of the system. Future investment must focus on life-cycle maintenance, system interdependencies, redundancy, security, and recovery from natural and man-made hazards.

In spite of inadequate budgets in recent years, the Corps continues to keep the waterways functioning. It will open new twin 1,200-foot locks on the Ohio River to replace a single, shorter lock built in 1921. The Corps is currently constructing new, larger locks in several States, including Illinois, Kentucky, Louisiana, Pennsylvania, and West Virginia.

The Corps also is embarking on major renovations of several older locks. These projects represent a $3.5 billion investment in modernizing the Nation's inland waterways. They also include significant investments in environmental restoration and management.

The Corps is bringing new technology online to make waterways navigation safer. The latest innovation is called "real-time current and velocities." This system alerts waterways users to the real-time speed of wind and currents on inland waterways. A total of six systems will be completed by the end of 2009.

In addition to the infrastructure mentioned above, the Corps has major responsibilities in other areas. It protects coastlines; develops flood-reduction and hydropower projects; oversees 4,300 recreation areas at 420 lakes in 43 States; and operates 134 multiple-purpose projects that contain storage for water supply in 26 States and Puerto Rico.

The USACE also shares responsibility among Federal, State and local agencies, and private landowners for raising awareness and understanding of the risks associated with living and working behind levees.

The fiscal year 2009 appropriation for the Corps of Engineers is $5.4 billion, but the construction backlog for the Corps tops $60 billion nationwide. Even with the addition of $4.6 billion for fiscal year 2009 through the American Recovery and Reinvestment Act, the investment deficit on our waterways remains at an estimated $20.5 billion through 2014.

The President's budget proposal for fiscal year 2010 is $5.1 billion. Despite the difficult budget climate and the dismal economic picture, we urge an appropriation of $7 billion in fiscal year 2010 to begin the long overdue process of rebuilding America's water resources infrastructure.

CONGRESS SHOULD APPROPRIATE $1.3 BILLION FOR THE U.S. BUREAU OF RECLAMATION IN FISCAL YEAR 2010

The Bureau of Reclamation's mission is to "manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public." The Bureau is the Nation's largest wholesale water supplier; it administers 348 reservoirs with a total storage capacity of 245 million acre-feet of water. It provides water to more than 31 million customers and supplies 20 percent of western farmers with water to irrigate 10 million acres of farmland.

In addition, the Bureau is the Nation's second largest producer of hydroelectric power, generating more than 40 billion kilowatt-hours of energy each year—an amount equivalent to the energy provided by 80 million barrels of crude oil. In the 100 years since Reclamation's creation, the Federal Government has invested almost $21 billion in original development costs for its infrastructure and other facilities.

The Bureau operates 348 dams and reservoirs, 58 hydropower generation facilities, more than 8,000 miles of canals, more than 24,000 miles of water distribution laterals, and more than 13,000 miles of drains. ASCE notes that most of Reclamation's major dams, reservoirs, hydroelectric plants, and irrigation systems are 50 or more years old. In December 2007, the Bureau calculated that nearly 80 of the 348 dams (approximately 23 percent) are 90 to 100 years old or older.

The Bureau has identified an estimated $3 billion in total infrastructure investment needs over the next 20 years.

We concur with former Commissioner Robert Johnson, who informed Congress in 2008 that, although the Bureau and its more than 350 operating partners have successfully operated and maintained the infrastructure to date, the aging process will inevitably lead to increased pressure on budgets and user rates to keep infrastructure service and reliability corresponding with past levels. The Bureau and its partners anticipate a steady increase in infrastructure repair needs that will continue to grow over time, the Bureau said last April.

The fiscal year 2009 appropriation was $1.1 billion, the same as fiscal year 2008, for dams, canals, water treatment and conservation, and rural water projects. The fiscal year 2010 proposal is $1.020 billion. Congress should appropriate $1.3 billion for the U.S. Bureau of Reclamation in fiscal year 2010, with the bulk of the increase set aside for infrastructure renewal under the Bureau's 5-year capital improvement plan.

PREPARED STATEMENT OF THE BOARD OF LEVEE COMMISSIONERS FOR THE YAZOO-MISSISSIPPI DELTA

U.S. ARMY CORPS OF ENGINEERS MISSISSIPPI RIVER & TRIBUTARIES PROJECT FISCAL YEAR 2010 REQUEST—$500 MILLION

As the front line flood protection provider for the approximately 300,000 Mississippians who reside within the 10 counties of our levee district, the Yazoo-Mississippi Delta Levee Board humbly requests that you allocate adequate funding to fully fund the Mississippi River and Tributaries Project (MR&T) at the Corps of Engineers' capability level for the 2010 fiscal year—$500 million.

And yes, we do know that is a lot of money. Even in this time—one which many of us believed we'd never see—of trillion dollar deficits and untold trillions in evaporated wealth, we do indeed know that $500 million is a lot of money.

We know that these are perilous times for our Nation, times in which the collective wisdom and sound judgment of you men and women will be nothing less than critical to our well being as a people. We know there are simply fiscal limits and we know that priorities must be and will be set.

But we also know that flood control is nothing less than vital to America's heartland. In many cases, such as our part of the Mississippi Delta, flood control is the primary factor allowing those who live there to live there. The heartland produces much of the food and fiber which allows us to feed and clothe not only our Nation, but much of the world. But there can be no food, there can be no fiber if the most fertile soils this side of the Nile delta were to be under water—were to be again inundated by the same water which created them.

The Mainline Mississippi River Levee System, truly one of the world's greatest engineering marvels, is literally all that stands between the human beings who live

and produce and prosper up and down, along either side of the Mississippi River—the largest, most powerful and often most fickle flowing waterway on the North American continent. Our levees are strong, true and tested, but like all the creations of man, they must be maintained; they must be vigilantly strengthened and repaired from the ravages of the power they contain every day.

We ask that the MR&T's levees be funded at levels of $69.972 million for construction, $61.2 million for channel improvements, $13.522 million for levee maintenance and $79.309 million for channel maintenance.

There are many projects, many efforts within the flood control umbrella that is the MR&T, and there are many who will speak to you on behalf of them, but for our people, for the lives and livelihoods of those we are dedicated to protect, there is only this levee board to speak. And so we now will.

For us there must remain one overriding priority—the Upper Yazoo Project. Ladies and Gentlemen, this effort designed to protect thousands from chronic flooding along the Yazoo/Coldwater river system, is perhaps the least controversial flood control project in the Nation, favored not only by our citizenry but the environmental community, as well. It is designed and it is demonstratively effective within its completed reaches. It need only be adequately funded to provide long awaited relief to those who have suffered for many years.

We ask that you provide the Corps capability funding level of $24.4 million in 2010.

We also ask that this collective Congress provide funding for the following projects affecting our district and its people at the 2010 capability levels:

CONSTRUCTION	
Backwater	$325,000
Main Stem	$25,000
MS Delta Headwaters	$25 million
Big Sunflower River	$2.18 million
Reformulation Study	$3 million
MAINTENANCE	
Revetments and Dikes	$58.2 million
Sardis Lake	$14.483 million
Arkabutla Lake	$13.793 million
Enid Lake	$12.69 million
Grenada Lake	$13.231 million
Greenwood	$1.85 million
Yazoo City	$550,000
Yazoo Main Stem	$3.154 million
Yazoo Tributaries	$953,000
Big Sunflower	$4.311 million
Yazoo Backwater	$905,000

Thank you for your careful consideration of our requests and we trust that once again, as has been so critical for our people on so many occasions over the years, the old adage will once again be validated: "The President proposes, but the Congress disposes."

PREPARED STATEMENT OF THE CALIFORNIA STATE COASTAL CONSERVANCY

SUMMARY

On behalf of the California State Coastal Conservancy, I want to thank the subcommittee for this opportunity to present our priorities for fiscal year 2010 and, at the same time, express our appreciation for your support of the Conservancy's projects in past years. The Conservancy respectfully requests needed funding for the following critical U.S. Army Corps of Engineers projects during fiscal year 2010. All of these requests reflect Corps of Engineers capability for the individual projects: $18 million for the Matilija Dam Ecosystem Project (Construction General); $7,750,000 for Napa River Salt Marsh Project (Construction General); $18,500,000 for the Hamilton Bel-Marin Keys Wetland Restoration Project (Construction General) and $2,800,000 for the South San Francisco Bay Shoreline Study (General Investigations).

CONSERVANCY BACKGROUND

The California Coastal Conservancy, established in 1976, is a State agency that uses entrepreneurial techniques to purchase, protect, restore and enhance coastal resources while providing public access to the shore. We work in partnership with local governments, other public agencies, nonprofit organizations, and private landowners to accomplish these goals.

To date, the Conservancy has undertaken more than 950 projects along the 1,100 mile California coastline and around San Francisco Bay, resulting in completed projects in every coastal county and all 9 San Francisco Bay Area counties. Through these projects, the Conservancy: protects and improves coastal wetlands, streams, and watersheds; works with local communities to revitalize urban waterfronts; assists local communities in solving complex land-use problems; and protects agricultural lands and supports coastal agriculture, to list a few of its main activities.

Since our establishment in 1976, the Coastal Conservancy has: helped build more than 300 access ways and trails opening more than 80 miles of coastal and bay lands for public use; assisted in the completion of over 100 urban waterfront projects; and joined in partnership endeavors with more than 100 local land trusts and other nonprofit groups, making local community involvement an integral part of the Coastal Conservancy's work.

MATILIJA DAM ECOSYSTEM RESTORATION PROJECT—CORPS OF ENGINEERS, LOS ANGELES DISTRICT

In fiscal year 2010 we are seeking $18,500,000 in Construction funding for the Army Corps of Engineers Construction General account to finalize design and begin the removal of the Matilija Dam in Ventura County, California. Approximately $1 million will be utilized to finalize design activities and the remaining $14 million in Corps capability will be used to advance construction of the project. Of that amount, approximately $7,500,000 would be designated for construction activities associated with the high-flow bypass of the dam with the remaining $5,500,000 being utilized for the building of levees downstream from the site.

The Matilija Dam Ecosystem Restoration Project, authorized in Public Law 110–114, is a project of vital importance and consists of the removal of the no longer needed or functional 200-foot tall Matilija Dam, located on a tributary to the Ventura River. The dam is currently unusable as sediment has filled in its reservoir. Completion of the project will reopen 17.3 miles of unimpeded habitat for the endangered steelhead trout and other aquatic species. In addition, the project will restore over 2,800 acres of habitat that will support a wide variety of native species, including 25 special status species while replenishing area beaches by allowing sand (now trapped behind the Dam) to flow to coastal beaches upon the Dam's removal.

The removal of Matilija Dam will also provide extensive economic benefits in addition to the environmental benefits that will be accrued. Specifically, over the life of the project we can expect an increase in California's economic output of $250 million and the creation of 1,500 jobs for the $100 million investment in the construction of the project. In the more immediate future (3 years) there would be an economic benefit of $150 million and the creation of over 900 jobs making the project a sound investment in California and the Nation's economy.

This project is one of the largest dam removal projects in the Country and enjoys broad support from many local, State and Federal agencies. To remove the dam, 6 million cubic yards of sediments will be moved or recontoured and a high flow sediment bypass system will be constructed at a water diversion downstream. In addition, a silt removal system will be installed along the diversion canal. Furthermore, levees will be built in several places along the river channel to protect property from flooding due to the expected increases in stream channel elevation in the first years after removal of the dam. The project also involves removal of invasive plants and the installation of replacement water wells.

NAPA RIVER SALT MARSH—CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT

For fiscal year 2010, we are seeking $8 million in construction funds to continue to advance this critical project that is nearly two-thirds complete. The only remaining work is that which was authorized for construction in Public Law 110–114 and must be undertaken by the U.S. Army Corps of Engineers. The funds requested would allow the Corps of Engineers to complete design and begin construction of their portion of the Napa River Salt Marsh Project which includes the restoration of Ponds 6–8. It is important to note that the project can be completed quickly as it only requires a total of $13 million to construct the Ponds 6–8 improvements over an estimated 2-year construction period.

Substantial funding during the current fiscal year is essential to ongoing project success as the local sponsors have spent their full share and have no additional State or local funds dedicated to the project to continue its implementation. State and local partners expended their share on completion of Phases I and II of the project. Phase I involved opening 3,000 acres of salt ponds (Ponds 3, 4, and 5) to full tidal action in 2006 and is the largest tidal restoration project in the San Francisco Bay to date. Phase II involved the restoration of 1,700 acres (Ponds 1/1A, and 2) to managed ponds for waterfowl and shorebirds in 2007. Without Federal funding this fiscal year, the project will continue to be halted, benefits will continue to be delayed and project costs will increase greatly.

The project is part of a larger environmental restoration effort to restore the Nation's second largest estuary the San Francisco Bay, and its watershed, to its natural state. This restoration effort is expected to improve the environmental sustainability of the Estuary while providing great scenic and recreational values for the local community. Federal funds are critically required for the completion of the project whose extensive benefits to the region include: providing extensive wetland habitat in San Francisco Bay; the beneficial use for recycled water in the North Bay; improved open space and recreational opportunities; and resolving urgent issues associated with deterioration of the site's levee, water control structures, and water quality.

Our request reflects Corps capability and funding will be utilized to complete design of Ponds 6–8. In addition, funding will initiate design of the recycled water pipeline, an item expressly included by Congress in the project's authorization. Funds will also be used to secure necessary permits and approvals and begin construction of Ponds 6–8.

The 10,000 acre Napa River Salt Marsh was purchased by the State of California from Cargill in 1994 and is managed by the California Department of Fish and Game. The State Coastal Conservancy has been the non-Federal sponsor working with the Corps on the Feasibility Study. The Corps' Feasibility Study was completed and the Chief's Report was signed in December 2004.

HAMILTON BEL-MARIN KEYS WETLAND RESTORATION PROJECT—CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT

In fiscal year 2010, the California State Coastal Conservancy is seeking $18,500,000 in Construction funding for the Hamilton Bel-Marin Keys Wetland Restoration Project. The project was authorized by Congress in 1999 (Public Law 106–53) and our request reflects Corps capability for the project.

This project is of critical importance as it will provide nearly 700 acres of restored tidal and seasonal wetlands at a former Army base and provides much needed habitat for several threatened and endangered species; as well as, shorebirds and waterfowl migrating along the Pacific Flyway. Because the project requires large volumes of dredged sediment for completion, this project will result in a greatly reduced need to dispose of sediment in the Bay and Pacific Ocean, which has direct benefits to aquatic life. Furthermore, the project also beneficially uses dredged material from the San Francisco Bay which provides for increased navigation and maritime commerce, a much needed economic stimulus for the region. In addition to the extensive environmental and maritime navigation benefits, the project will also serve as a key driver for the regional economy as implementation and full funding is expected to bring approximately 304 jobs to Marin County, California.

The project was provided full funding in the Omnibus Appropriations Act of 2009 and as a result work is currently underway. As a result of this significant commitment, the majority of the required site preparation has been completed on the former Army Airfield, including the construction of miles of levees. The main runway and taxiways are now in the process of being buried under millions of cubic yards of clean dredged sediment. Subsequently, the easterly levee will be breached allowing tidal waters to once again flood the site. Significant progress has been made as over 2.4 million cubic yards being delivered to Hamilton as of January 2009. To complete the Airfield portion of the project an additional 5 million cubic yards of sediment is needed. Under the current schedule it is expected that completion of the Airfield portion of the project will occur between 2013 and 2015. Following completion of the Airfield, the Corps will work on the adjacent Antenna field and Bel-Marin Keys V property for a total project area of nearly 2,500 acres.

The project enjoys broad support from environmental groups, labor and maritime interests as well as local government in Marin County. Key supporters include the San Francisco Bay Joint Venture, the County of Marin, the Port of Oakland, the Bay Planning Coalition, the Bay Institute, the Save San Francisco Bay Association, the National Audubon Society, and many others.

SOUTH SAN FRANCISCO BAY SHORELINE STUDY—CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT

The Conservancy is seeking $2,800,000 in Investigations funding to continue the Feasibility Study for this groundbreaking project that will provide tidal and fluvial flood protection to the south San Francisco Bay Area. The study was initiated in fiscal year 2005 and has been ongoing thanks to the support of the subcommittee. In fact, in the Omnibus Appropriations Act of 2009 the project received $2,800,000 representing full capability for the project.

This project is of national significance as it will provide tidal and fluvial flood protection for the south San Francisco Bay Area, including Silicon Valley, protecting approximately 42,800 acres, 7,400 homes and businesses, and significant urban infrastructure, including major highways, hospitals and airport facilities. In addition, the project is being pursued in conjunction with the 2nd largest wetlands restoration project occurring in the United States and as such will provide extensive habitat for federally endangered species and migratory waterfowl.

To continue to advance this important study it is imperative that local interests and the Federal Government work together to ensure a reliable funding stream for the project. To that end, continued Federal funds are necessary to keep the project on schedule as the Conservancy's co-local sponsor for the project, the Santa Clara Valley Water District, will be approaching voters in 2012 to secure local funding for the construction of the recommended project. When this occurs, the District needs to have a deliverable product that they can showcase to voters given the fact that California's Proposition 13 requires that any new taxation be approved by a two-thirds majority of voters.

During fiscal year 2010 we are seeking $2,800,000 in accordance with Corps of Engineers capabilities for the project during the current fiscal year. Funds in fiscal year 2010 are expected to be used for the following activities: Hydrology, Hydraulics and Coastal Analysis—$1 million; Economics Analysis—$250,000; Plan Formulation—Alternatives Development $250,000; Habitat Evaluation Analysis—$150,000; NEPA—EIS Development—$400,000; Engineering & Design/Geotech—$200,000; Project Management—$400,000 and Surveys & Mapping—$150,000.

The project enjoys substantial support among Federal, State and local agencies with the following agencies serving as active project partners: California State Coastal Conservancy; California Department of Fish and Game; U.S. Fish and Wildlife Service; U.S. Army Corps of Engineers, NOAA, U.S. Geological Survey; Santa Clara Valley Water District; Alameda County Flood Control and Water Conservation District; Hewlett, Packard, and Moore Foundations and the Goldman Fund. The project is also supported by the San Francisco Bay Joint Venture, the city of San Jose, The Bay Institute, Save the Bay, the Bay Trail Program, the National Audubon Society, and many other local governments, environmental groups, community groups, businesses, and recreation organizations.

PREPARED STATEMENT OF THE SANTA CLARA VALLEY WATER DISTRICT

SUMMARY

This statement urges the subcommittee's support for a fiscal year 2010 appropriation of $100,000 to initiate a Reconnaissance Study of the Coyote Creek Watershed.

STATEMENT OF SUPPORT—COYOTE CREEK WATERSHED STUDY

Background.—Coyote Creek drains Santa Clara County's largest watershed, an area of more than 320 square miles encompassing most of the eastern foothills, the city of Milpitas, and portions of the Cities of San Jose and Morgan Hill. It flows northward from Anderson Reservoir through more than 40 miles of rural and heavily urbanized areas and empties into south San Francisco Bay.

Prior to construction of Coyote and Anderson Reservoirs, flooding occurred in 1903, 1906, 1909, 1911, 1917, 1922, 1923, 1926, 1927, 1930 and 1931. Since 1950, the operation of the reservoirs has reduced the magnitude of flooding, although flooding is still a threat and did cause damages in 1982, 1983, 1986, 1995, and 1997. Significant areas of older homes in downtown San Jose and some major transportation corridors remain susceptible to extensive flooding. The federally-supported lower Coyote Creek Project (San Francisco Bay to Montague Expressway), which was completed in 1996, protected homes and businesses from storms which generated record runoff in the northern parts of San Jose and Milpitas.

The proposed Reconnaissance Study would evaluate the reaches upstream of the completed Federal flood protection works on lower Coyote Creek.

Objective of Study.—The objectives of the Reconnaissance Study are to investigate flood damages within the Coyote Creek Watershed; to identify potential alternatives for alleviating those damages which also minimize impacts on fishery and wildlife resources, provide opportunities for ecosystem restoration, provide for recreational opportunities; and to determine whether there is a Federal interest to proceed into the Feasibility Study Phase.

Study Authorization.—In May 2002, the House of Representatives Committee on Transportation and Infrastructure passed a resolution directing the Corps to ". . . review the report of the Chief of Engineers on Coyote and Berryessa Creeks . . . and other pertinent reports, to determine whether modifications of the recommendations contained therein are advisable in the interest of flood damage reduction, environmental restoration and protection, water conservation and supply, recreation, and other allied purposes . . .".

Fiscal Year 2006 Administration Budget Request and Funding.—The Coyote Watershed Study was one of only three "new start" studies proposed for funding nationwide in the administration fiscal year 2006 budget request. Congress did not include funding for the study in the final fiscal year 2006 appropriations bill, or in any subsequent bills.

Fiscal Year 2009 Funding.—Congress did not appropriate any funding to the project in fiscal year 2009.

Fiscal Year 2010 Funding Recommendation.—It is requested that the Congressional Committee support an appropriation of $100,000 to initiate a multi-purpose Reconnaissance Study within the Coyote Creek Watershed.

SUMMARY

This statement urges the subcommittee's support for a fiscal year 2010 appropriation of $2.25 million to complete the General Reevaluation Report, update of environmental documents, and commence design work for the Berryessa Creek Flood Protection Project element of the Coyote/Berryessa Creek Project.

STATEMENT OF SUPPORT—COYOTE/BERRYESSA CREEK PROJECT—BERRYESSA CREEK PROJECT ELEMENT

Background.—The Berryessa Creek Watershed is located in northeast Santa Clara County, California, near the southern end of the San Francisco Bay. A major tributary of Coyote Creek, Berryessa Creek drains 22 square miles in the city of Milpitas and a portion of San Jose.

On average, Berryessa Creek floods once every 4 years. The most recent flood in 1998 resulted in significant damage to homes and automobiles. The proposed project on Berryessa Creek, from Calaveras Boulevard to upstream of Old Piedmont Road, will protect portions of the cities of San Jose and Milpitas. The flood plain is largely urbanized with a mix of residential and commercial development. Based on the U.S. Army Corps of Engineers (Corps) 2005 report, a 1 percent or 100-year flood could potentially result in damages exceeding $179 million. Benefit-to-cost ratios for the six project alternatives being evaluated range from 2:1 to 7.3:1.

Study Synopsis.—In January 1981, the Santa Clara Valley Water District (District) applied for Federal assistance for flood protection projects under section 205 of the 1948 Flood Control Act. The Water Resources Development Act of 1990 authorized construction on the Berryessa Creek Flood Protection Project as part of a combined Coyote/Berryessa Creek Project to protect portions of the cities of Milpitas and San Jose.

The Coyote Creek element of the project was completed in 1996. The Berryessa Creek Project element proposed in the Corps' 1987 feasibility report consisted primarily of a trapezoidal concrete lining. This was not acceptable to the local community. The Corps and the District are currently preparing a General Reevaluation Report which involves reformulating a project which is more acceptable to the local community and more environmentally sensitive. Project features will include setback levees and floodwalls to preserve sensitive areas (minimizing the use of concrete), appropriate aquatic and riparian habitat restoration and fish passage, and sediment control structures to limit turbidity and protect water quality. The project will also accommodate the city of Milpitas' adopted trail master plan. Estimated total costs of the General Reevaluation Report work are $6.5 million, and should be completed in 2009.

Fiscal Year 2009 Funding.—Congress appropriated $138,000 to the project in fiscal year 2009.

Fiscal Year 2010 Funding Recommendation.—Based on the continuing threat of significant flood damage from Berryessa Creek and the need to complete the General Reevaluation Report, it is requested that the Congressional Committee support

an appropriation of $2.25 million for the Berryessa Creek Flood Protection Project element of the Coyote/Berryessa Creek Project.

PREPARED STATEMENT OF THE CALAVERAS COUNTY WATER DISTRICT

PROJECT REQUESTS

	Amount
NEW HOGAN WATER DISTRIBUTION SYSTEM (Construction General—section 219)	$600,000
COSGROVE CREEK FLOOD CONTROL PROJECT (Construction General—section 205)	200,000
CALAVERAS COUNTY REGIONAL WATER/WASTEWATER AND RECYCLED WATER FACILITIES PROGRAM—PHASE II (Construction General—section 5039)	600,000

OVERVIEW

On behalf of the Calaveras County Water District, I want to thank the subcommittee for this opportunity to present our priorities for fiscal year 2010 and, at the same time, express our appreciation for your support of the District's projects in recent years. The Calaveras County Water District is respectfully seeking the following requests before the Senate Energy and Water Development Appropriations Subcommittee from the U.S. Army Corps of Engineers during fiscal year 2010. We are seeking $600,000 from the Corps of Engineers Construction General Account section 219 for our New Hogan Water Distribution System request; $200,000 from the Corps of Engineers Construction General Account section 205 for the Cosgrove Creek Flood Control Project; and $600,000 from the Corps Construction General Account section 5039 for the Calaveras County Regional Water/Wastewater and Recycled Water Facilities Program Phase II.

As background, our agency, the Calaveras County Water District (CCWD) was founded in the fall of 1946 and was organized under the laws of the State of California as a public agency for the purpose of developing and administering the water resources in Calaveras County. Therefore, CCWD is a California Special District and is governed by the California Constitution and the California Government and Water Codes. CCWD is not a part of, or under the control of, the County of Calaveras. CCWD was formed to preserve and develop water resources and to provide water and wastewater service to the citizens of Calaveras County.

Under State law, CCWD, through its board of directors, has general powers over the use of water within its boundaries. These powers include, but are not limited to: the right of eminent domain, authority to acquire, control, distribute, store, spread, sink, treat, purify, reclaim, process and salvage any water for beneficial use, to provide sewer service, to sell treated or untreated water, to acquire or construct hydroelectric facilities and sell the power and energy produced to public agencies or public utilities engaged in the distribution of power, to contract with the United States, other political subdivisions, public utilities, or other persons, and subject to the California State Constitution, levy taxes and improvements.

NEW HOGAN WATER DISTRIBUTION PROJECT

CCWD is seeking $600,000 in fiscal year 2010 for the New Hogan Water Distribution Project, a multi-phased project that will improve the region's water supply, significantly increase and protect water quality and provide significant environmental restoration that will greatly increase habitat for local wildlife while increasing recreational opportunities for the local community. The project will construct infrastructure to convey surface water to existing and expanding agricultural acreage in western Calaveras County. The area currently relies on a diminishing groundwater supply, which is experiencing water quality problems and has been identified by the State as an overdrafted groundwater basin. The project will include monitoring facilities to continually evaluate the region's sensitive groundwater basin and its response to conjunctive use operation and will also include enhanced modeling tools that evaluate the effectiveness of planned or proposed facilities for expanding conjunctive use in the region.

The project will provide a sustainable water supply for the western Calaveras County region experiencing declining groundwater levels, water quality deterioration, expanding agriculture, significant population growth, and the continuing threat of drought. Infrastructure will be built to convey surface water from existing reservoirs and water rights and entitlements permitted or contracted by the Calaveras County Water District to areas at greatest risk for groundwater supply

problems. Through introduction of surface water planned decades ago, the Calaveras County Water District will introduce conjunctive use to increase water supply reliability for all surface water and groundwater users within the western Calaveras County region. The project will benefit all of California as it will minimize the losses of naturally occurring springs and will improve stream-flow conditions for river tributaries of the Sacramento-San Joaquin River Delta, which provides two-thirds of the State of California with water. Finally, water conservation and wastewater recycling are critical elements that can reduce demands or stretch existing water supplies. Assessment of public outreach and environmental documentation needs will also be performed, as identified in a project management plan.

Cost Breakdowns for this project in fiscal year 2010 are listed as follows: Negotiation Project Partnership Agreement (PPA) and initial planning, design, and construction contract $50,000; develop Calaveras-Mokelumne Master Plan Concept $50,000; water supply and demand analysis $75,000; alternatives formulation and analysis $175,000; environmental program development $75,000; development of institutional partnerships and public outreach, $100,000; development of Feasibility Report $75,000.

COSGROVE CREEK FLOOD CONTROL PROJECT

CCWD, in conjunction with Calaveras County, is seeking $200,000 in the Construction General section 205 account for the Cosgrove Creek Flood Control Project. The project will address flooding that occurs along the lower reaches of the creek, as well as flooding that occurs on Spring Creek. Flooding in these areas impacts over 400 people and 100 structures located in the 100-year floodplain. The project will attenuate peak flows, address the beneficial use of peak flows, stabilize creek banks, improve natural conditions favorable to wetlands and riparian habitat, and increase recreational opportunities in the area. In addition to providing critical flood control for the region, the project will provide a number of ancillary benefits including; the beneficial use of flood flows including sprayfields, conjunctive use of recycled water and wetlands restoration. Further, the project will provide additional riparian habitat and much-needed recreational opportunities through the creation of hiking/riding trails and numerous athletic fields for use by the local community.

CALAVERAS COUNTY REGIONAL WATER/WASTEWATER AND RECYCLED WATER FACILITIES PROGRAM—PHASE II

CCWD third and final priority for fiscal year 2010 is a request for $600,000 to support the Calaveras County Regional Water/Wastewater and Recycled Water Facilities Program Phase II, a multi-phase, collaborative project to investigate strategic opportunities to correct water and wastewater utility deficiencies along the Highway 4 corridor in the Stanislaus River Watershed of Calaveras County.

Utility regionalization and improved coordination are needed to support sustainable practices in the Sierra Nevada foothill communities. This project would create partnerships between local, State, and Federal agencies so that infrastructure improvements, replacement needs, and growth decisions can be coordinated in a manner that respects connections between water, wastewater, land use, and development within the watershed thereby greatly enhancing the utilization and safeguarding of our region's water resources.

To accomplish these objectives CCWD will partner with Calaveras County, the city of Angels, Murphys Sanitary District, Union Public Utility District, and the Utica Power Authority. Through the identification of particular problem areas and collaboration with our local partners a "living" model will be developed to examine strategies for regionalizing water and wastewater facilities. A technical team consisting of project partners will develop preliminary concept plans based on shared goals, objectives, and priorities. Information will be circulated among all stakeholders and strong community involvement plan will be put forth that will incorporate the suggestions of the public and interested non-governmental organizations. This original model will then be further refined to evaluate concepts achieving maximum beneficial use to ensure a sustainable, cost-effective concept plan emerges for regional watershed implementation.

Cost breakdowns for this critical project in fiscal year 2010 are listed as follows: Negotiation of PPA and Initial planning, design, and construction contract $50,000; development of regional water/wastewater and recycled water master plan concept $50,000; summary of existing facilities and regulatory setting $50,000; evaluation of wastewater and water supply needs $75,000; formulation and evaluation of alternatives $200,000; development of institutional partnerships and public outreach $100,000; and reparation of Feasibility Study $75,000.

PREPARED STATEMENT OF THE IZAAK WALTON LEAGUE OF AMERICA

The Izaak Walton League of America appreciates the opportunity to submit testimony concerning appropriations for fiscal year 2010 for programs under the jurisdiction of the subcommittee. The League is a national, nonprofit organization founded in 1922. We have nearly 37,000 members and 270 community-based chapters nationwide. Our members are committed to advancing common sense policies that safeguard wildlife and habitat, support community-based conservation, and address pressing environmental issues. The following pertains to programs administered by the U.S. Army Corps of Engineers.

CORPS OF ENGINEERS, OPERATIONS AND MAINTENANCE, UPPER MISSISSIPPI RIVER

The League supports strong financial efforts for ecosystem restoration for the Upper Mississippi River (UMR). We have supported the Environmental Management Program (EMP) since its inception and continue to support this vital restoration program. EMP should be fully funded at its authorized level of $33.2 million and the current restriction for starting new EMP projects should be lifted. It is important to note that even this level of investment can serve only to slow the pace of UMR degradation, not achieve net restoration.

The League has also strongly expressed its opinion that the large-scale navigation modifications included in the Recommended Plan for the Upper Mississippi Navigation and Ecosystem Sustainability Program (NESP), as authorized by the Water Resources Development Act of 2007, have not been justified by the Corps and should not be pursued. Previous reviews from the National Academy of Sciences and the Assistant Secretary of the Army, Civil Works found that the navigation construction component of NESP was not economically justifiable.

The League has strong roots in the Upper Mississippi River region. Protecting the basin has been a key issue for our members since we led the fight to create the Upper Mississippi River Fish and Wildlife Refuge in 1924. The League has spearheaded efforts to reform the lock and dam navigation system to ensure that flows and habitat remain as natural as possible. We also work to promote sustainable agriculture practices and implement farm conservation programs to reduce polluted runoff. Our testimony reflects many decades of experience on the Upper Mississippi River and our direct 15-year involvement with the Upper Mississippi River—Illinois Waterway (UMR–IWW) navigation study.

The Upper Mississippi River is one of the most complex ecosystems on earth. It provides habitat for 50 species of mammals, 45 species of reptiles and amphibians, 37 species of mussels, and 241 species of fish. The need for ecosystem restoration is unquestionable. As the Corps correctly stated in its study of navigation expansion, this ecosystem is "significantly altered, is currently degraded, and is expected to get worse." Researchers from the National Academy of Sciences have determined that river habitat is disappearing faster than it can be replaced through existing programs such as the Corps' Environmental Management Program, which was authorized at $33.2 million annually by Congress in 1999, but has never received full appropriations. As habitat vanishes, scientists warn that many species will decline and some will disappear.

Our Nation relies on a healthy Mississippi River for commerce, recreation, drinking water, food supply and power. More than 12 million people annually recreate on and along the Upper Mississippi River spending $1.2 billion and supporting 18,000 jobs. More people recreate on the Upper Mississippi than visit Yellowstone National Park. Notably, barge traffic has remained static on the river for more than two decades with real declines in recent years.

The Water Resources Development Act of 2007 authorizes the Navigation and Ecosystem Sustainability Program (NESP) for the Upper Mississippi River. NESP allocates $2.2 billion for new navigation-related construction and $1.7 billion for ecosystem restoration over an initial 15-year project phase. Included in the $2.2 billion is over $256 million for small-scale and non-structural navigation projects that we fully support. However, we have consistently opposed the unnecessary spending of tax dollars on the economically unsound new locks, a position further bolstered by the continuing annual declines in barge traffic on the UMR.

In assembling the UMR–IWW navigation study, the Corps recognized the critical need for UMR ecosystem restoration work and encouraged Congress to invest approximately $130 million annually in Upper Mississippi River habitat restoration efforts. With this demonstrated need in mind, the League strongly encourages the subcommittee to prioritize investment in ecosystem restoration. Appropriating significant funding for restoration will provide near-term economic stimulus in communities along the UMR and long-term conservation and economic benefits for the region and the Nation.

The administration's budget does not request funding for NESP. The League supports increasing fiscal year 2010 NESP navigation funding to adequately cover the cost of initiating small-scale and non-structural navigation projects only. We strongly support increasing total ecosystem restoration funding incrementally, in an efficient and effective manner, to reach the total $130 million investment as soon as feasible.

CORPS OF ENGINEERS, OPERATIONS AND MAINTENANCE, MISSOURI RIVER

For fiscal year 2010, we urge the subcommittee to provide at least $70 million as the President has specifically requested for ecosystem restoration along the Missouri River. We believe it is essential to provide this minimum amount because the final fiscal year 2009 appropriation is significantly below the request and the Corps identified approximately $26 million in restoration projects that could commence quickly to stimulate local economies, but these were not fully funded by the American Recovery and Reinvestment Act. In addition, through the Missouri River Recovery Program, the Army Corps has identified $105 million in projects, which have been designed and approved, that it could implement next fiscal year. With at least $70 million, the Corps and U.S. Fish and Wildlife Service could begin important ecosystem restoration efforts that will produce long-term ecological and economic benefits, as well as provide economic stimulus throughout fiscal year 2010 by allowing the agencies to move forward with shovel-ready projects.

The Missouri River basin encompasses land in 10 States and covers one-sixth of the continental United States. The Missouri, America's longest river, is one of the most altered ecosystems on earth. While recovery and restoration efforts have begun, much more needs to be done. League members, especially those in Iowa, Nebraska and South Dakota, want to see the recovery efforts continue and expand.

The Corps, Fish and Wildlife Service and many State agencies have been working on restoring habitat for fish and wildlife species along the river. This work is critical for the Interior Least Tern and Pallid Sturgeon, which are listed as endangered under the Endangered Species Act, and the Piping Plover, which is listed as threatened. Moreover, the positive impacts of restoration extend to all fish and wildlife throughout the region.

A recent study conducted by the Fish and Wildlife Service near Lisbon Bottoms in Missouri showed that over twice as many fish species were utilizing the created shallow water habitat (SWH) areas as the main channelized section of the river. A Corps' study has shown that the emergent sandbar habitat (ESH) projects have had tremendous response from nesting terns and plovers. These habitat restoration projects are working with the river—not against it.

These projects have also been a boon for recreation along portions of the river. Anglers, hunters, boaters and others have been using some of these areas proving the old adage "if you build it, they will come." Although the majority of the population lives in the lower basin, most recreational spending is currently occurring in the upper basin because facilities and opportunities are more abundant. These developed habitat projects are bringing people back to the river in the lower Missouri basin.

In addition to boosting the economy through tourism, restoration projects can provide near-term economic stimulus in small communities throughout the region. As Congress and the administration considered the stimulus package earlier this year, the Corps identified $26 million in restoration projects that could commence this spring and summer in Nebraska, Iowa, South Dakota and other basin States. In general, these projects involved removing barriers to fish passage on the Yellowstone River in Montana as well as restoring and creating habitat for terns, plovers and pallid sturgeon in the middle and lower basin. To perform this work, the Corps would contract with local construction companies, which would create or maintain jobs and inject dollars into the local economy through purchases of materials, fuel, food and lodging. Although these projects were not funded by the Recovery Act, with an appropriation of at least $70 million, the Corps could implement some of them next year. Doing so could help propel economic recovery at the community level at a time when we hope the national economy will also be improving.

The League encourages the subcommittee to provide at least $70 million for recovery and restoration efforts along the Missouri River. Benchmarks have been set by the Biological Opinion establishing goals for habitat restoration. With adequate funding and a lot of hard work on the ground, we can meet these goals and restore critical segments of America's longest river.

We appreciate the opportunity to submit testimony and look forward to working with the subcommittee to strengthen the investment in ecosystem restoration and recovery along the Upper Mississippi and Missouri rivers.

PREPARED STATEMENT OF THE LITTLE RIVER DRAINAGE DISTRICT

Dear Congressman Visclosky, my name is Dr. Sam M. Hunter, DVM of Sikeston, Missouri. I am a veterinarian, landowner, farmer and resident of Southeast Missouri.

I am the President of the Little River Drainage District, the largest such entity in the Nation. Our District serves as an outlet drainage and flood control District to parts of seven counties in Southeast Missouri. We provide flood control protection to a sizable area of Northeast Arkansas as well. Our District is solely tax supported by more than 3,500 private landowners in Southeast Missouri.

My remarks will be directed toward the Mississippi River and Tributaries Project (MR&T) and the St. Francis River Basin portion of the MR&T. Those funds when properly expended are investments yielding a return of substantial benefits to the American taxpayer throughout this Nation. They are used to prevent flooding to much of our valuable farmland, to industrial sites, and to upgrade our ever aging locks and dam system on our navigable streams which will prevent unscheduled lock closures, modernize our hydro-electric plants, and restore some of our environmental assets. MR&T authorized by Congress in 1928 and still not completed is returning back to our Nation $25 for every $1 expended. What a good investment!!

We are pleased to learn of the recent passage of the Omnibus bill for fiscal year 2009 and the Stimulus bill. The Omnibus bill provides $375 million for the MR&T Project for fiscal year 2009. The stimulus funding will likewise provide additional funds to improve much needed work on this excellent project. The Corps has a stated capability exceeding both amounts and will be able to execute those funds promptly.

Many jobs will be realized and many products will be purchased throughout the entire Mississippi Valley and the watershed which discharge into this system. We must put people back to work and this should help in some small way. However, there still remains room for more funding. This District supports the request of the Mississippi Valley Flood Control Association for funding levels at $500 million for the MR&T Project. This project as well as all of the subsidiary projects within are returning back to the U.S. Treasury a minimum of $6 for each $1 invested.

We believe Congress needs to intervene and reverse the trend of OMB, and of past administrations. We have not seriously invested in our waterway infrastructure for decades but we MUST. Local economies will be affected positively by these investments. Local labor will be used as well as local businesses who will provide needed materials. This would be a major boost to our economy. Each year OMB and recent administrations have submitted low budget amounts for this worthwhile project and we have had to rely on Congress to "fix" the problem. You should not be burdened with this task. Someone needs to inform OMB what projects need funding which are assets to our Nation and not a liability.

We must prioritize projects and eliminate projects that are not returning benefits back to this Nation. We must have our Federal Government live up to the commitments they have made to the citizens of this Nation. Private interests have made many investments based upon faith in the Federal Government following through on what it promised and what they had been told would be provided to them within a reasonable period of time. If a project is to be funded entirely by the Federal Government as directed by Congress then we must fulfill that obligation. If local interest is to provide a portion of the cost then local interest must meet that mandate as well. However, we do not need to hold any projects up because local interests are not financially able to meet their cost sharing needs provided that project returns a benefit back to this Nation. Let us move forward with a plan and let us work that plan and rebuild and bring our waterway infrastructure into the 21st century properly.

Investing in our waterways is a great way to stimulate the economy, which currently is very much needed, and at the same time be building and making investments into a system for the future which will return back more dollars than expended. We petition you to give this vital industry of our Nation a strong endorsement and do all you can to ensure our waterways system and carriers stay competitive with our foreign competitors.

I have the following comments for your benefit and consideration:

STIMULUS BILL FUNDING

The Corps stated a capability to execute $12–$15 billion yet were only allocated $4.6 billion. This amount is gratefully appreciated but is a mere "down payment" to improve and upgrade our deteriorated infrastructure. Thousands of jobs could be generated should the Corps capability be met. The Corps continues the premier en-

gineering and construction arm of the Federal Government. We need to let them do what they do best.

INFRASTRUCTURE

The current administration stated often during its campaign and after that a genuine concerted priority would be to invest in this country's future, namely, its infrastructure.

Our Federal road systems are crumbling! We must not wait for bridges to fail before we act. We need to move forward across our entire Nation upgrading our Federal highway system in its entirety. This will take long term commitments not just a "stimulus" now and then. We need to put a plan in place, work the plan and fund it properly.

Are we truly interested in fuel independence—a cleaner environment—a better economy? If we are why don't we have someone step forward and be a champion for our "waterways" system? We have locks and dams which are an average of 50 years old. Parts are having to be fabricated since they are no longer manufactured. Tows are having to be broken up to pass because our locks and dams are too short and not modernized. Many undue delays are occurring. This does not permit our carriers to compete fairly with the foreign shipping industry. We must start a concerted effort to improve this part of our Nation's infrastructure.

Locks, dams, hydropower, recreation, flood control, water supplies and all other benefits from the construction, operation and maintenance of these features on our rivers benefit our entire Nation not just a few. It is a national asset and it must be operated and funded as a national benefit. Private industry can not and will not operate this system fairly and in the best interest of our Nation.

Environmentally moving goods and freight throughout our Nation via water is much cleaner, less intrusive and far more environmentally acceptable than highways or rail. Noise pollution, air pollution, land pollution are substantially less when we move the mass amount of goods possible by water.

Fuel efficiency comparison is a "no brainer"! For instance 1 gallon of fuel moves 155 tons of freight by truck, 413 tons of freight by rail and 576 tons of freight by water. What part of this do we not understand? Why can't we realize such an endeavor would reduce much of our fuel needs and take much pressure off our highway system?

Economically investing wisely in our waterways effects much of our Nation—not just a regional portion. Consider it being possible to board a waterborne vessel at the Port of New Orleans, Louisiana and one can touch 36 States of this Nation and 6 provinces in Canada without ever getting onto land. Over 75 percent of our population lives along water. Only two of our major cities are not on water, namely, Atlanta, Georgia and Denver, Colorado. With the many ports throughout the Mississippi Valley, which network many more people inland, it is evident many local economies will be benefitted when investments are made in our water infrastructure.

We seem to be ready, willing and capable of improving the infrastructure of other Nations at the expense of our taxpayers but seem reluctant to do the same for our Nation. It is far past time to reward the American taxpayer with a return for the money he provides each year and stop using those funds to benefit those Nations who are our enemies.

It has been estimated our waterway infrastructure needs $100–$120 billion to modernize, upgrade and be made functional. Lets start now by setting a 10 year goal to modernize that system and then plan to meet that goal and exceed same when possible. Currently we are spending $13–$15 billion per month to fight terrorism in Iraq and Afghanistan which is more spent in 1 year of what is needed to bring our waterways up to a finished plan. Perhaps we could cut the 10 year plan to even 5 years by eliminating much of that funding. Lets try!

I wish to thank you very much for your time and kind attention and for taking the time to review the above. We would be very appreciative of anything this subcommittee can do to help us improve our environment, improve our livelihood, and improve the area in which we live and work which ultimately is good for America. We are also very appreciative of all this subcommittee has done for us in the past. We trust you will hear our pleas once more and act accordingly.

PREPARED STATEMENT OF MAYOR SARA PRESLER, CITY OF FLAGSTAFF, ARIZONA

Chairman Dorgan, Ranking Member Bennett, and distinguished members of the subcommittee, thank you for allowing me to testify on behalf of the city of Flagstaff, Arizona in support of $23 million in the Army Corps of Engineers budget for the

Rio de Flag flood control project in fiscal year 2010. The Rio de Flag flood control project is critically important to the city, to northern Arizona, and, ultimately, to the Nation.

As you may know, Mr. Chairman, with this subcommittee's help over the last several fiscal years, Rio de Flag received more than $15 million to continue construction on this important project. We are extremely grateful that the subcommittee boosted this project well above the President's request every year, and we would appreciate your continued support for this project in fiscal year 2010.

Furthermore, the amount of money invested in this project by the Federal Government—approximately $54 million (authorized by WRDA)—will be saved exponentially in costs to the Federal Government in the case of a large and catastrophic flood, which could be more than $450 million. It will also promote economic growth and redevelopment along areas that are currently underserved because of the flood potential.

Like many other projects under the Army Corps's jurisdiction, Rio de Flag received no funding in the President's fiscal year 2010 budget, although the Corps has expressed a capability of $23 million to continue construction on the project and unwavering commitment to the project. We are hopeful that the subcommittee will fund the Rio de Flag project at $23 million when drafting its bill in order to keep the project on an optimal schedule.

Flooding along the Rio de Flag dates back as far as 1888. The Army Corps has identified a Federal interest in solving this long-standing flooding problem through the Rio de Flag, Flagstaff, Arizona—Feasibility Report and Environmental Impact Study (EIS). The recommended plan contained in this feasibility report was developed based on the following opportunities: (1) flood control and flood damage reduction; (2) environmental mitigation and enhancement; (3) water resource management; (4) public recreation; and (5) redevelopment opportunities. This plan will result in benefits to not only the local community, but to the region and the Nation.

The feasibility study by the Corps of Engineers has revealed that a 500-year flood could cause serious economic hardship to the city. In fact, a devastating 500-year flood could damage or destroy approximately 1,500 structures valued at more than $450 million. Similarly, a 100-year flood would cause an estimated $100 million in damages. In the event of a catastrophic flood, over half of Flagstaff's population of more than 60,000 would be directly impacted or affected.

In addition, a wide range of residential, commercial, downtown business and tourism, and industrial properties are at risk. Damages could also occur to numerous historic structures and historic Route 66. The Burlington Northern & Santa Fe Railway (BNSF), one of the primary east-west corridors for rail freight, could be destroyed, as well as U.S. Interstate 40, one of the country's most important east-west interstate links. Additionally, a significant portion of Northern Arizona University (NAU) could incur catastrophic physical damages, disruptions, and closings. Public infrastructure (e.g., streets, bridges, water, and sewer facilities), and franchised utilities (e.g., power and telecommunications) could be affected or destroyed. Transportation disruptions could make large areas of the city inaccessible for days.

Mr. Chairman, the intense wildfires that have devastated the West during the last several years have only exacerbated the flood potential and hazard in Flagstaff. An intense wildfire near Flagstaff could strip the soil of ground cover and vegetation, which could, in turn, increase runoff and pose an even greater threat of a catastrophic flood.

In short, a large flood could cripple Flagstaff for years. This is why the city believes it is important to ensure that this project remains on schedule and that the Corps is able to utilize its expressed capability of $23 million in fiscal year 2010 for construction of this flood control project.

In the city's discussions with the Corps, both the central office in Washington and its Los Angeles District Office also believe that the Rio de Flag project is of the utmost importance and both offices believe the project should be placed high on the subcommittee's priority list. We are hopeful that the subcommittee will consider this advice and also place the project high on its priority list and fully fund the project at $23 million for fiscal year 2010.

It is important to note that the city has secured the necessary property rights to begin construction, and the city is prepared to assume the costs for the non-Federal portion of the cost-sharing agreement.

The city of Flagstaff, as the non-Federal sponsor, is responsible for all costs related to required Lands, Easements, Rights-of-Way, Relocations, and Disposals (LERRD's). The city has already secured the necessary property rights to begin construction in 2004. Implementation of the city's Downtown and Southside Redevelopment Initiatives ($100 million in private funds) are entirely dependent on the successful completion of the Rio de Flag project. The Rio de Flag project will also pro-

vide a critical missing bike/pedestrian connection under Route 66 and the BNSF Railroad to replace the existing hazardous at grade crossings.

Mr. Chairman, the Rio de Flag project is exactly the kind of project that was envisioned when the Corps was created because it will avert catastrophic floods, it will save lives and property, and it will promote economic growth. In short, this project is a win-win for the Federal Government, the city, and the surrounding communities.

In conclusion, the Rio de Flag project should be considered a high priority for this subcommittee, and I encourage you to support full funding of $23 million for this project in the fiscal year 2010 Energy and Water Development Appropriations bill. Thank you in advance for your consideration.

PREPARED STATEMENT OF THE BOARD OF MISSISSIPPI LEVEE COMMISSIONERS

Mr. Chairman and members of the subcommittee, this statement is prepared by Peter Nimrod, Chief Engineer for the Board of Mississippi Levee Commissioners, Greenville, Mississippi, and submitted on behalf of the Board and the citizens of the Mississippi Levee District. The Board of Mississippi Levee Commissioners is comprised of seven elected commissioners representing the counties of Bolivar, Issaquena, Sharkey, Washington, and parts of Humphreys and Warren counties in the Lower Yazoo Basin in Mississippi. The Board of Mississippi Levee Commissioners is charged with the responsibility of providing protection to the Mississippi Delta from flooding of the Mississippi River and maintaining major drainage outlets for removing the flood waters from the area. These responsibilities are carried out by providing the local sponsor requirements for the congressionally authorized projects in the Mississippi Levee District. The Mississippi Levee Board and the Mississippi Valley Flood Control Association support an appropriation of $500 million for fiscal year 2010 for the Mississippi River and Tributaries Project. This is the minimum amount that we consider necessary to allow for an orderly completion of the remaining work in the Valley and to provide for the operation and maintenance, as required, to prevent further deterioration of the completed flood control and navigation work.

It is apparent that the administration loses sight of the fact that the Mississippi River and Tributaries Project provides protection to the Lower Mississippi Valley from waters generated across 41 percent of the Continental United States. These waters flow from 31 states and 2 provinces of Canada and must pass through the Lower Mississippi Valley on its way to the Gulf of Mexico. We will remind you that the Mississippi River and Tributaries Project is one of, if not the most cost effective project ever undertaken by the United States Government. The foresight of the Congress in their authorization of the many features of this project is exemplary.

The many projects that are part of the Mississippi River and Tributaries Project not only provide protection from flooding in the area, but the award of construction contracts throughout the Valley provides assistance to the overall economy of this area. The employment of the local workforce and purchases from local vendors by the contractors help stabilize the economy in one of the most impoverished areas of our country.

Thanks to the additional funding provided by the Congress over the last several years over and above the administration's budget, work on the Mainline Mississippi River Levee Enlargement Project is continuing. Of the original 69 miles of deficient levees in the Mississippi Levee District, 23.2 miles of work has been completed, 12.2 miles are currently under contract, and another 4.7 miles will be awarded in late Summer, 2009. We are requesting $69.972 million for construction on the Mainline Mississippi River Levees in the Lower Mississippi Valley Division which will allow the Vicksburg and Memphis districts to keep existing contracts on schedule and award contracts to avoid any future unnecessary delays in completing this vital project. We are all well aware that the Valley some day will have to endure a Project Flood, we just don't know when. We must be prepared.

The President's fiscal year 2010 budget did not include funding for any construction projects within the Yazoo Basin. This action is especially difficult to understand during a time when our Nation needs an economic boost. These are all projects authorized and funded so wisely by the Congress. All of these projects are encompassed in the footprint of the Delta Regional Authority, an area recognized by the Congress as requiring special economic assistance to keep pace with the rest of our great Nation. We can not lose sight of the fact that all of these projects are required to return more than a dollar in benefits for each dollar spent.

The Final Report for the Yazoo Backwater Project was released in late 2007. The Yazoo Backwater Project will provide economic and environmental benefits to parts

of six counties in the south Mississippi Delta. This project will build a pump that will evacuate floodwater that is generated over 4,093 square miles in the Mississippi Delta. The pump will lower the 100-year flood event by 4.5 feet thereby reducing urban and rural structural damages, providing benefits to the remaining agricultural lands, and reducing the frequency and duration of floods. Reforestation easements will be purchased on up to 55,600 of existing agricultural land which will provide benefits in every environmental category—wetlands, terrestrial, aquatics, and waterfowl resources as well as vastly improving water quality. The recommended plan for the Yazoo Backwater Project will balance economics with the environment. This is a model project that should be the standard for future public works projects in the United States. On August 31, 2008, EPA wrongly used it's authority under section 404(c) of the Clean Water Act (CWA) to veto the Yazoo Backwater Project even though it is exempt by section 404(r) of the CWA. We are requesting this project be funded by the Congress in the amount of $5 million. These funds will allow the Corps to begin acquisition of the reforestation easements and initiate the award of the pump supply contract.

The Draft Supplemental Environmental Impact Statement for the Big Sunflower River Maintenance Project will be released next year. This maintenance project will restore flood control capacities to 130 miles of channels by removing sediment that has built up over the past 40 years since the channels were originally improved. Our request for $5.591 million will allow right-of-way acquisition to continue and for the award of the first dredging contract. The residents in the Mississippi Delta continue to suffer damages from flooding while they wait for this maintenance project to reach their area.

Work on the Delta Headwaters Project has proven effective in reducing sediments to downstream channels. To discontinue this project will only diminish water quality by increasing sediment, reducing the level of protection to the citizens of the Delta and increasing required maintenance. We are requesting $25 million to continue this project.

The Upper Yazoo Project is critical to the Delta. The Corps of Engineers operates four major flood control reservoirs on the bluff hills overlooking the Mississippi Delta. These reservoirs hold back heavy spring rains and must have adequate outlet channel capacity to pass this excess runoff during the summer and fall months. Without completion of the Upper Yazoo Project, the Corps is forced to hold flood water from the previous spring, thereby reducing the ability to provide protection from the current year's flood water. We urge the Congress to provide $24.5 million allowing construction to continue and the award of additional channel enlargement items.

Maintenance of completed works can not be over looked. The four flood control reservoirs over looking the Delta have been in place for 50 years and have functioned as designed. Required maintenance must be performed to avoid any possibility of failure during a flood event. We are asking for $13.793 million for Arkabutla Lake, $12.69 million for Enid Lake, $13.231 million for Grenada Lake, and $14.483 million for Sardis Lake.

We are requesting $13.522 million for Maintenance of the Mainline Mississippi River Levees in the Lower Mississippi Valley Division which will provide for repair of levee slides, slope repair, and repair of the gravel maintenance roadway which is so vital to access during high water.

The Environmental Protection Agency (EPA) has been given too much power under section 404(c) of the Clean Water Act (CWA) which allows EPA to veto Congressionally authorized projects. During the early 1990s, due to abuse of the 404(c) power by EPA, Congress considered removing this authority from EPA. EPA has again invoked this veto power on the Yazoo Backwater Project. EPA is saying that you can't lower the water level with a flood control project! By killing this project with 404(c) veto authority, EPA is drawing a line in the sand over the future of flood control in our great Nation. EPA has vetoed the Yazoo Backwater Project even though it was approved, authorized and funded by Congress and exempt from a 404(c) veto by 404(r). It is now time to again take up this issue and remove the 404(c) veto power from EPA before they kill another flood control project that has been authorized by Congress.

As Members of the Congress representing the citizens of our Nation who live with the Mississippi River everyday, you clearly understand both the benefits provided by this resource, and the destructive force that must be controlled during a flood. On behalf of the Mississippi Levee Board, I can not express enough, our appreciation for your efforts in providing adequate funding over the last several years that has allowed construction to continue on our much needed projects and thank you in advance for your kind consideration of our requests for fiscal year 2010.

DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

PREPARED STATEMENT OF DAVE FREUDENTHAL, GOVERNOR, STATE OF WYOMING

Dear Chairman Dorgan and Senator Bennett, I am requesting your support for an appropriation of $3,569,000 to the Bureau of Reclamation included in the President's fiscal year 2010 recommended budget in the Upper Colorado Region budget line item entitled "Endangered Species Recovery Implementation Program." This budget line-item designates $1,950,000 for construction and construction management activities for the San Juan River Basin Recovery Implementation Program; $1,219,000 for construction and construction management activities for the Upper Colorado River Endangered Fish Recovery Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy.

The Upper Colorado and San Juan recovery programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Federal Endangered Species Act. Since 1988, these programs have provided ESA section 7 compliance (without litigation) for nearly 1,800 Federal, tribal, State and privately managed water projects depleting more than 3 million acre-feet of water per year. These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. Substantial non-Federal cost-sharing funding exceeding 50 percent is embodied in both programs.

The Department of the Interior recognized these programs with the Department of the Interior's Cooperative Conservation Award in April 2008 as national model efforts demonstrating that collaborative conservation partnerships can successfully work to recover endangered species while addressing water needs to support growing western communities in a manner that fully respects State water law and interstate river compacts.

We request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation, as authorized and directed by Public Law 106–392, as amended, in these two region-wide cooperative recovery programs. The State of Wyoming thanks you for the past support and assistance of your subcommittee; it has greatly facilitated the success of these multi-state, multi-agency programs.

PREPARED STATEMENT OF JON M. HUNTSMAN, JR., GOVERNOR, STATE OF UTAH

Dear Chairman Dorgan and Senator Cochran, this letter serves to respectfully request your support for an appropriation of $3,569,000 to the Bureau of Reclamation included in the President's fiscal year 2010 recommended budget in the Upper Colorado Region budget line item entitled "Endangered Species Recovery Implementation Program," This budget line-item designates $1,950,000 for construction and construction management activities for the San Juan River Basin Recovery Implementation Program; $1,219,000 for construction and construction management activities for the Upper Colorado River Endangered Fish Recovery Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy.

The Upper Colorado and San Juan recovery programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Federal Endangered Species Act. Since 1988, these programs have provided ESA section 7 compliance (without litigation) for neatly 1,800 Federal, tribal, State and privately managed water projects depleting more than 3 million acre-feet of water per year. These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power, and environmental interests. Substantial non-Federal cost-sharing funding exceeding 50 percent is embodied in both programs.

The Department of the Interior recognized these programs with the DOI's Cooperative Conservation Award in April 2008 as national model efforts demonstrating that collaborative conservation partnerships can successfully work to recover endangered species while addressing water needs to support growing western communities in a manner that fully respects State water law and interstate river compacts.

Utah requests the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation as authorized and directed by Public Law 106–392, as amended, in these two region-wide cooperative recovery programs. On behalf of the State of Utah, I thank you for the past

support and assistance of your subcommittee; it has greatly facilitated the success of these multi-state, multi-agency programs.

PREPARED STATEMENT OF BILL RICHARDSON, GOVERNOR, STATE OF NEW MEXICO

Dear Chairman Dorgan and Senator Cochran, I am requesting. your support for an appropriation of $3,569,000 to the Bureau of Reclamation included in the President's fiscal year 2010 recommended budget in the Upper Colorado Region budget line item entitled "Endangered Species Recovery Implementation Program." This budget line-item designates $1,950,000 for construction and construction management activities for the San Juan River Basin Recovery Implementation Program; $1,219,000 for construction and construction management activities for the Upper Colorado River Endangered Fish Recovery Program: and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy.

The requested fiscal year 2010 appropriation for to San Juan River Recovery Program will be used for construction of critically needed fish passage structures in critical habitat on the San Juan River as well as providing for program management and development.

The Upper Colorado and San Juan recovery programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Federal Endangered Species Act. Since 1988, these programs have provided ESA section 7 compliance (without litigation) for nearly 1,800 Federal, tribal, State and privately managed water projects depleting more than 3 million acre-feet of water per year. These highly successful cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. Substantial non-Federal cost-sharing funding exceeding 50 percent is embodied in both programs.

The Department of the Interior recognized these programs with the Department of the Interior's Cooperative Conservation Award in April 2008 as national model efforts demonstrating that collaborative conservation partnerships can successfully work to recover endangered species while addressing water needs to support growing western communities in a manner that fully respects State water law and interstate river compacts.

We request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation, as authorized and directed by Public Law 106–392, as amended, in these two region wide cooperative recovery programs. The State of New Mexico thanks you for the past support and assistance of your subcommittee; it has greatly facilitated the success of these multi-state, multi-agency programs.

PREPARED STATEMENT OF BILL RITTER,. JR., GOVERNOR, STATE OF COLORADO

Dear Chairman Dorgan and Senator Bennett, I am requesting your support for an appropriation of $3,569,000 to the Bureau of Reclamation included in the President's fiscal year 2010 recommended budget in the Upper Colorado Region budget line item entitled "Endangered Species Recovery Implementation Program." This budget line-item designates $1,950,000 for construction and construction management activities for the San Juan River Basin Recovery Implementation Program; $1,219,000 for construction and construction management activities for the Upper Colorado River Endangered Fish Recovery Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy.

These programs are long-standing partnerships among the States of Colorado, New Mexico, Utah and Wyoming, Indian tribes, Federal agencies, and water, power and environmental interests. These programs are successful and collaborative efforts that merit continued support by the Federal Government as a model method to recover threatened and endangered species, while allowing water development to occur in a manner that complies with the Endangered Species Act.

The Department of the Interior recognized these programs with the Department of the Interior's Cooperative Conservation Award in April 2008 as national models demonstrating that collaborative conservation partnerships can successfully work to recover endangered species while addressing water needs to support growing western communities in a manner that fully respects State water law and interstate river compacts. Since 1988, these programs have provided ESA compliance (without litigation) for nearly 1,800 Federal, tribal, State and privately managed water projects depleting more than 3 million acre-feet of water per year. Substantial non-Federal cost-sharing funding exceeding 50 percent is embodied in both of these programs as authorized by Public Law 106–392, as amended.

The past support and assistance of your subcommittee has greatly facilitated the success of these multi-state, multi-agency programs. On behalf of the State of Colorado, I thank you for that support and I request the subcommittee's assistance, for fiscal year 2010 funding, to ensure the Bureau of Reclamation's continuing and vitally important financial participation in these regional cooperative recovery programs.

PREPARED STATEMENT OF THE WYOMING WATER ASSOCIATION (WWA)

Dear Chairman Dorgan and Senator Bennett, on behalf of the members of the Wyoming Water Association, I am requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation I seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended, and is included in the President's recommended budget for fiscal year 2010 within the Bureau of Reclamation's "Endangered Species Recovery Implementation Program" budget line-item.

Founded in 1933, the Wyoming Water Association (WWA) is a Wyoming non-profit corporation and voluntary organization of private citizens, elected officials, and representatives of business, government agencies, industry and water user groups and districts. The Association's objective is to promote the development, conservation, and utilization of the water resources of Wyoming for the benefit of Wyoming people. The WWA provides the only statewide uniform voice representing all types of water users within the State of Wyoming and encourages citizen participation in decisions relating to multi-purpose water development, management and use.

The Wyoming Water Association is a participant in the Upper Colorado River Endangered Fish Recovery Program. That program, and its sister program within the San Juan River Basin, are ongoing partnerships among the States of Colorado, New Mexico, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Federal Endangered Species Act. The Department of the Interior continues to recognize these programs as national models demonstrating that collaboratively partnerships can successfully work to recover endangered species while addressing water needs to support growing western communities in a manner that fully respects State water law and interstate compacts. Since 1988, these programs have provided ESA section 7 compliance (without litigation) for over 1,600 Federal, tribal, State and privately managed water projects depleting more than 3 million acre-feet of water per year.

The requested fiscal year 2010 appropriation will allow the San Juan River Recovery Implementation Program to complete a fish passage facility on the San Juan River and to initiate planning and design for a proposed similar structure in a following year. The funding for the Upper Colorado Recovery Program will be used for pre-construction efforts prior to the anticipated award of a contract in fiscal year 2011 to construct a fish screen to avoid entrapment and a water conservation and canal automation project to provide additional water supplies for the endangered fishes. Substantial non-Federal cost-sharing funding exceeding 50 percent is being provided for the capital construction projects benefiting the endangered fish and their habitats associated with both of these successful programs.

The past support and assistance of your subcommittee has greatly facilitated the success of these multi-state, multi-agency programs. On behalf of the members of the Wyoming Water Association, thank you for that support. We again request the subcommittee's assistance, with regard to fiscal year 2010 funding, to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE SOUTHERN UTE INDIAN TRIBE

Dear Chairman Dorgan and Senator Bennett, on behalf of the Southern Ute Indian Tribe, I am requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation ("Reclamation") within the budget line item entitled "Endangered Species Recovery

Implementation Program" for the Upper Colorado Region. The funding designation the Tribe seeks on behalf of Reclamation is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, the Southern Ute Indian Tribe, the Ute Mountain Ute Indian Tribe, the Navajo Nation, and the Jicarilla Apache Nation, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

The tribe appreciates the subcommittee's past support and requests the subcommittee's assistance for fiscal year 2010 funding to ensure Reclamation's continuing financial participation in these vitally important programs.

Prepared Statement of the Fort Peck Reservation Rural Water System (Public Law 106–382), Assiniboine and Sioux Rural Water System, and the Dry Prairie Rural Water System

BUREAU OF RECLAMATION

Fiscal Year Budget Request

The Fort Peck Assiniboine and Sioux Tribes and Dry Prairie Rural Water respectfully request fiscal year 2010 appropriations of $44,649,000 for the Bureau of Reclamation rural water program. The project is 22 percent complete. It has progressed well subject to available funds.

Fiscal year 2010 funds will be used to construct critical elements of the Fort Peck Reservation Rural Water System, Montana, (Public Law 106–382, October 27, 2000). The amount requested is based on need to build Phase II of the regional water treatment plant, pipelines to connect with the Town of Poplar and Dry Prairie systems on the east and west sides project. The request is within capability to spend funds in fiscal year 2010 and is set out in Table 1. The Schedule of Activities and Cash Flow analysis to build the major features of the regional system (water treatment plant and common pipelines) is included as Attachment A and demonstrate capability to use funds.

TABLE 1.—FISCAL YEAR 2010 FUNDING REQUEST FORT PECK RESERVATION RURAL WATER SYSTEM (PUBLIC LAW 106–382)

Project Feature	Federal	Non-Federal	Total
Fort Peck Tribes			
Water Treatment Plant:			
Phase I, Clear Well Wash Water Recovery	.....	.....	.....
Phase II, Main Treatment	$20,317,000	.....	$20,317,000
Pipelines:			
Water Treatment Plant to Poplar	10,763,000	.....	10,763,000
Water Treatment Plant to Wolf Point	.....	.....	.....
FP OM Buildings	558,000	.....	558,000
Subtotal	31,638,000	.....	31,638,000
Dry Prairie			
Big Muddy to Plentywood	4,739,000	$1,496,000	6,235,000
Fort Kipp	219,000	69,000	288,000
Porcupine Creek to Opheim:			
St. Marie to Nashua	4,619,000	1,458,000	6,077,000
St. Marie to Opheim	3,434,000	1,084,000	4,518,000
Subtotal	13,011,000	4,107,000	17,118,000
Total	44,649,000	4,107,000	48,756,000

Funding Status and Needs

As shown in Table 2 below, the project will be 22 percent complete at the end of fiscal year 2009. Construction funds remaining to be spent after fiscal year 2009 will total $225.061 million within the current authorization (in October 2008 dollars). Administrative costs of extending the project completion to fiscal year 2015 and construction costs outside the authorized ceiling increase remaining costs to $245.969 million before considering inflation. Inflation at 7.5 percent over the next 6 years, the average rate over the last 5 years in Reclamation construction projects, is expected to increase remaining project costs to $314.001 million if the project is completed in fiscal year 2015. An average $52.33 million annually is required to complete the project by 2015 considering all factors. The project is seeking an amendment of Public Law 106–382 in this session of Congress to extend the project completion to December 31, 2015.

TABLE 2.—FUNDING STATUS AND NEEDS

Total Federal Funding Authority (October 2008 $)	$289,110,000
Federal Funds Expended Through Fiscal Year 2009	$64,049,000
Percent Complete	22.15
Amount Remaining After Fiscal Year 2009:	
Total Authorized (October 2008 $)	$225,061,000
Overhead Adjustment for Extension to Fiscal Year 2015 and Other	$245,969,000
Adjusted for Inflation to Fiscal Year 2015 at 7.46 Percent Annually	$314,001,000
Years to Complete	6
Average Annual Required to End in Fiscal Year 2015 (Need Extension of Public Law 106–382)	$52,333,000
Fiscal Year 2010 Amount Requested	$44,649,000

The request ($44.649 million) is less than the average annual appropriations needed to complete the project in fiscal year 2015 ($52.333 million annually), and is within the capability of the project to use funds for construction. The request will create an estimated 350 full-time equivalent (FTE) construction jobs in an area of Montana with low per capita income and high unemployment.

Cost indexing from fiscal year 1998 reflecting inflation increased the cost of the project from $176 million to $289 million, an increase of $113 million. (See Attachment D). Increases in the level of appropriations are needed to outpace inflation, which averaged 3.35 percent for pipelines in the first 5 years of the project, 7.46 percent over the last 5 years and 13.80 percent last year.

Funding Has Not Been Adequate to Serve Any Tribal Users

The sponsor tribes and Dry Prairie greatly appreciate the previous appropriations from the subcommittee that have permitted building the Missouri River intake (the water source), stages of the water treatment plant in multiple contracts, the Culbertson to Medicine Lake pipeline and branches serving rural users outside the Fort Peck Indian Reservation. However, funds have not been adequate to complete the water treatment plant, pipeline to Poplar and other features as proposed for fiscal year 2010. Service to tribal users and communities within the Fort Peck Indian Reservation is dependent upon completion of those facilities and has not been possible. No water has been delivered on the Fort Peck Indian Reservation.

Proposed Activities

Public Law 106–382 (October 27, 2000) authorized the project, which includes all of the Fort Peck Indian Reservation in Montana and the Dry Prairie portion of the project outside the Reservation in Roosevelt, Sheridan, Daniels and part of Valley County.

Fort Peck Indian Reservation

On the Fort Peck Indian Reservation the tribes have used appropriations from previous years to:

—Construct the Missouri River raw water intake, a critical feature of the regional water project. The raw water pump station has been constructed, and the raw water pipeline between the Missouri River and the water treatment plant has been constructed to within 2 miles of the water treatment plant.

—The sludge lagoons at the water treatment plant have been completed.

—Phase I of the regional water treatment plant is under construction and will be completed in fiscal year 2009 with funds appropriated previously.

The regional water treatment plant was divided into three construction phases over the past several years. This segregation of the project in smaller contracts increased the cost of the project significantly but was necessary due to inadequate

funding to bid the project as a single unit, which would normally be the case. Rather than one contractor, there will ultimately be three contractors. Three sets of plans and specifications were required to coordinate new construction contracts with pieces already built. The Bureau of Reclamation approved the plans and specifications for the entire plant 4 years ago. Capability to use funds has not been an issue.

The remaining phase of the water treatment plant has been advertised for construction in contemplation of adequate funding in fiscal year 2010 ($20.317 million) to complete this essential component of the project. The bid opening is scheduled for April 7, 2009. American Recovery and Reinvestment Act (ARRA) of 2009 funds would offset the requirement for fiscal year 2010 appropriations. The project clearly meets the expectation of Congress for ARRA, but at the time of this writing, the availability of ARRA funds was not known.

The request for fiscal year 2010 includes funds for construction of the essential pipelines from the water treatment plant to the community of Poplar (but not to Wolf Point). The pipeline to Poplar is a regional transmission pipeline east of the water treatment plant to serve the Fort Peck Indian Reservation and to eventually connect to Dry Prairie facilities east of the Reservation. The tribes will have capability to build the pipeline to Wolf Point in fiscal year 2010, which is a regional transmission pipeline west of the water treatment and serves the west sides of the Fort Peck Indian Reservation and Dry Prairie.

The pipeline project from the water treatment plant to Poplar will provide a water supply from the Missouri River to replace groundwater contaminated by "brine" from oil drilling operations. The brine contamination is the subject of EPA orders against the responsible oil company. The replacement supplies will serve the community of Poplar and the surrounding rural area where wells have been contaminated. More wells are threatened. There is urgency in completing the regional project to Poplar before the advancing plume of contamination reaches existing community wells. Projections of the date that contamination will reach the Poplar community wells range from imminent danger to as much as a decade, but the anxiety of the tribes' leadership and membership cannot be overcome without completing the water treatment plant and connecting the regional pipeline to Poplar in fiscal year 2010. This is a critical timeframe for the tribes. The staff and members of the subcommittee are urged to review this matter with the tribes and Bureau of Reclamation to clarify the urgency of completing necessary project facilities and alleviating the threat of contamination of the public water supply for the tribes' headquarters community of Poplar. (See Attachment E).

The Bureau of Reclamation can confirm that the use of funds proposed for fiscal year 2010 is within the project's capability to spend (see Attachment A).

Dry Prairie

Dry Prairie has used previous appropriations to construct over 200 miles of distribution pipelines from the community of Culbertson, an interim water source to be replaced when the regional water treatment plant and transmission pipeline have been completed on the Fort Peck Indian Reservation. The distribution system serves the communities of Froid and Medicine Lake and over 200 rural homes, farms and ranches. Pipelines were sized to serve the area north of the Missouri River, south of the Canadian border and between the Fort Peck Indian Reservation and the North Dakota border (see general location map, Attachment B) as funds are made available and water sources are expanded.

The request for fiscal year 2010 funds of $13.011 million, supplemented by a non-Federal cost share of $4.107 million, will be used to complete pipelines starting in fiscal year 2009 to rural services on the west side of the Dry Prairie project between the communities of St. Marie and Nashua. An existing water treatment plant owned by the Boeing Co. at the former Glasgow Air Force Base will provide an interim water supply to serve the west side project until the regional water treatment plant of the tribes is complete and pipelines from Wolf Point to Nashua are constructed. The facilities constructed on the west side of the project are the same facilities required after connection of the regional water treatment plant. Therefore, no duplication of facilities are associated with the interim project.

Dry Prairie will also assist the Assiniboine and Sioux Tribes in building pipelines from Culbertson on the east side of the project to the Reservation boundary to serve the tribal community of Fort Kipp with an interim water supply. The tribes are building facilities within the Reservation with fiscal year 2009 funding.

Dry Prairie proposes to extend interim water supply capability between Culbertson and Plentywood with fiscal year 2010 funding. These facilities will be served from the tribes' regional water treatment plant when the plant and interconnecting main transmission pipelines are completed to Culbertson.

Master Plan

The project master plan is provided for review as Attachment C. The request for fiscal year 2010 is shown in relation to the project components that remain to be completed after fiscal year 2009.

Administration's Support

The project has reached 22 percent completion over a period of 9 years and needs greater funding support to complete the project in 2015. The administration's budget included the project in fiscal year 2007 at the $5.0 million level but has not supported funds for the project since that time. The previous administration's support for the rural water program has diminished to include the Mni Wiconi and Garrison projects only. Congressional support is needed for the broader program of projects under construction.

The tribes and Dry Prairie have worked extremely well and closely with the Bureau of Reclamation since the authorization of the project in fiscal year 2000. The Bureau of Reclamation has participated, reviewed and commented on the Final Engineering Report, and all comments were incorporated into the report. Agreement was reached on final presentation. OMB reviewed the Final Engineering Report prior to its submission to Congress in the final step of the approval process. The Commissioner, Regional and Area Offices of the Bureau of Reclamation have been consistently in full agreement with the need, scope, total costs, and the ability to pay analysis that supported the Federal and non-Federal cost shares. There have been no areas of disagreement or controversy in the formulation or implementation of the project.

The Bureau of Reclamation collaborated with the tribes and Dry Prairie to conduct and complete value engineering investigations of the Final Engineering Report (planning), the Culbertson to Medicine Lake pipeline (design), the Poplar to Big Muddy River pipeline (design), the Missouri River intake (design) and the Regional Water Treatment plant (design). Each of these considerable efforts has been directed at ways to save construction and future operation, maintenance and replacement costs as planning and design proceed. Agreement with Reclamation has been reached in all value engineering sessions on steps to save Federal and non-Federal costs in the project.

The Bureau of Reclamation conducted independent review of the final plans and specifications for the Missouri River raw water intake, the regional water treatment plant and the Culbertson to Medicine Lake Project. The Agency participated heavily during the construction phases of those projects and concurred in all aspects of construction from bidding through the completion of construction. The regional water treatment plant is under construction, and the Bureau of Reclamation is providing sound oversight.

Cooperative agreements have been developed and executed between the Bureau of Reclamation and the tribes and between Bureau of Reclamation and Dry Prairie. Those cooperative agreements carefully set out goals, standards and responsibilities of the parties for planning, design and construction. All plans and specifications are subject to levels of review by the Bureau of Reclamation pursuant to the cooperative agreements. The sponsors collaborate to undertake activities that assure proper oversight and approval by the Bureau of Reclamation. Each year the tribes and Dry Prairie, in accordance with the cooperative agreements, develop a work plan setting out the planning, design and construction activities and the allocation of funding to be utilized on each project feature.

Clearly, the Fort Peck Reservation Rural Water System is well supported by the Bureau of Reclamation. Congress authorized the project with a plan formulated in full cooperation and collaboration with the Bureau of Reclamation, and major project features are under construction with oversight by the Agency.

SUPPLEMENTAL BACKGROUND

Local Project Support

The Fort Peck Tribes have supported the project since 1992 when they conceived it and sought means of improving the quality of life in the region. The planning was a logical step after successful completion of an historic water rights compact with the State of Montana. This compact was the national "ice breaker" that increased the level of confidence by other tribes in Indian water right settlement initiatives. The tribes did not seek financial compensation for the settlement of their water rights but sought development of meaningful water projects as now authorized.

The 1999 Montana Legislature approved a funding mechanism from its Treasure State Endowment Program to finance the non-Federal share of project planning and construction. Demonstrating support of Montana for the project, there were only

three votes against the statutory funding mechanism in both the full House and Senate. The 2001 through 2007 Montana Legislatures have provided all authorizations and appropriations necessary for the non-Federal cost share. (The 2009 legislature is in session and is expected to continue strong project support).

Dry Prairie support is demonstrated by a financial commitment of all 14 communities within the service area to participate in the project. Rural support is strong, with about 70 percent of area farms and ranches intending to participate as evidenced by their intent fees of $100 per household.

Need for Water Quality Improvement

The Fort Peck Indian Reservation was previously designated as an "Enterprise Community", underscoring the level of poverty and need for economic development in the region. The success of economic development within the Reservation will be significantly enhanced by the availability of higher quality, safe and more ample municipal, rural and industrial water supplies that this regional project will bring to the Reservation, made more necessary by persistent drought in the region. Outside the Fort Peck Indian Reservation, the Dry Prairie area has income levels that are higher than within the Reservation but lower than the State average.

The feature of this project that makes it more cost effective than similar projects is its proximity to the Missouri River. The southern boundary of the Fort Peck Indian Reservation is formed by the Missouri River for a distance of more than 60 miles. Many of the towns in this regional project are located 2 to 3 miles from the river, including Nashua, Frazer, Oswego, Wolf Point, Poplar, Brockton, Culbertson, and Bainville. As shown on the enclosed project map, a transmission system outside the Fort Peck Indian Reservation will deliver water 30 to 40 miles north of the Missouri River. Therefore, the distances from the Missouri River to all points in the main transmission system are shorter than in other projects of this nature in Reclamation's Great Plains Region.

ATTACHMENT A

SCHEDULE OF ACTIVITIES AND CASH FLOW - NO STIMULUS

$1,000, OCTOBER 2008 $

Activity	Total Construction Cost
Fort Kipp	
Easement Acquisition	
Cultural Resource Surveys	
Hazardous Waste Surveys	
Permitting	
Design	
Reclamation Review	
Amend Plans and Advertisement for Bid	
Bid Opening	
Notice of Award	
Notice to Proceed	
Construction	1,112,000
222,400 / 222,400 / 222,400 / 222,400 / 222,400	
WTP	
Wash Water Recovery Basin, Clear Well and Site Work (Contracted)	
Advertise for Bid/Agreement	
Bid Opening	
Notice of Award	
Notice to Proceed	
Construction	15,151,000
1,000	
Main Treatment (P&S Approved by USBR)	
Re-Review by Reclamation	
Advertise for Bid/Agreement	
Bid Opening	
Notice of Award	
Notice to Proceed	
Construction	27,000,000
1,125,000	
WTP to Poplar/Wolf Point Pipeline and Intake Extension	
Establish Preliminary Route	
Permission to Survey	
Easement Acquisition	
Engineering Survey and Investigations	
Cultural Resource Surveys	
Hazardous Waste Surveys	
Permitting	
Design	
Reclamation Review	
Amend Plans and Advertisement for Bid	
Bid Opening	
Notice of Award	
Notice to Proceed	
Construction	17,000,000
1,545,455	
Poplar and Wolf Point	

ATTACHMENT A

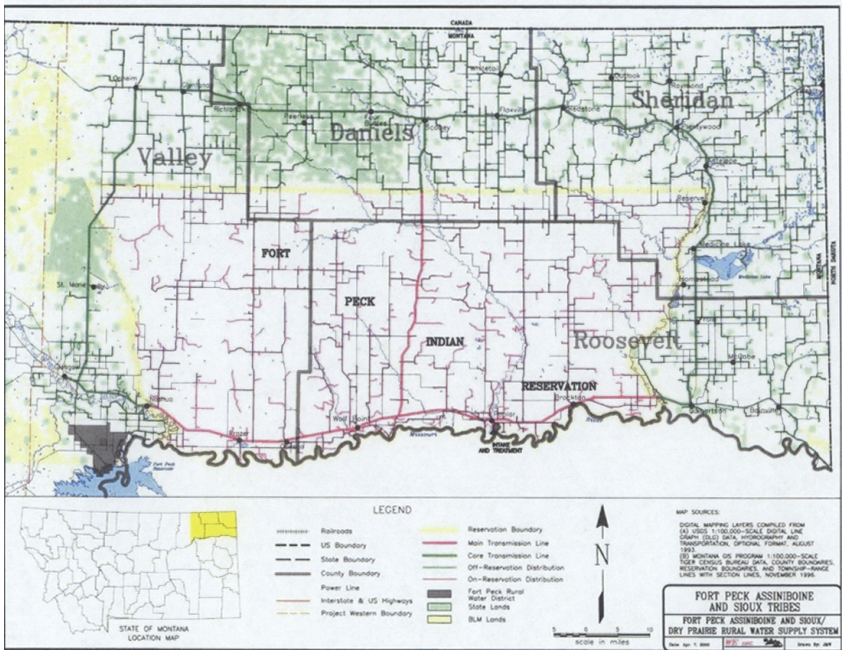
SCHEDULE OF ACTIVITIES AND CASH FLOW - NO STIMULUS

$1,000, OCTOBER 2008 $

Activity	2008 Sep	Oct	Nov	Dec	2009 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2010 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2011 Jan	Feb	Mar	Apr	May	Jun	Aug	Sep	Total Construction Cost
Valley County																																					
Establish Preliminary Route																																					
Easement Acquisition																																					
Engineering Survey and Investigations																																					
Cultural Resource Surveys																																					
Hazardous Waste Surveys																																					
Permitting																																					
Design																																					
Reclamation Review																																					
Amend Plans and Advertisement for Bid																																					
Bid Opening																																					
Notice of Award																																					
Notice to Proceed																																					
Construction																																					4,751,000
																593,875	593,875				593,875	593,875	593,875	593,875	593,875	593,875											
Poplar to Bid Muddy/Wolf Point to Porcupine/Medicine Lake to Plentywood																																					
Establish Preliminary Route																																					
Easement Acquisition																																					
Engineering Survey and Investigations																																					
Cultural Resource Surveys																																					
Hazardous Waste Surveys																																					
Permitting																																					
Design																																					
Reclamation Review																																					
Amend Plans and Advertisement for Bid																																					
Bid Opening																																					
Notice of Award																																					
Notice to Proceed																																					
Construction																																					18,567,375
																					929,369	929,369	929,369	929,369	929,369	929,369	929,369	929,369				929,369	929,369	929,369	929,369	929,369	

Delivery to May

ATTACHMENT B
LOCATION MAP



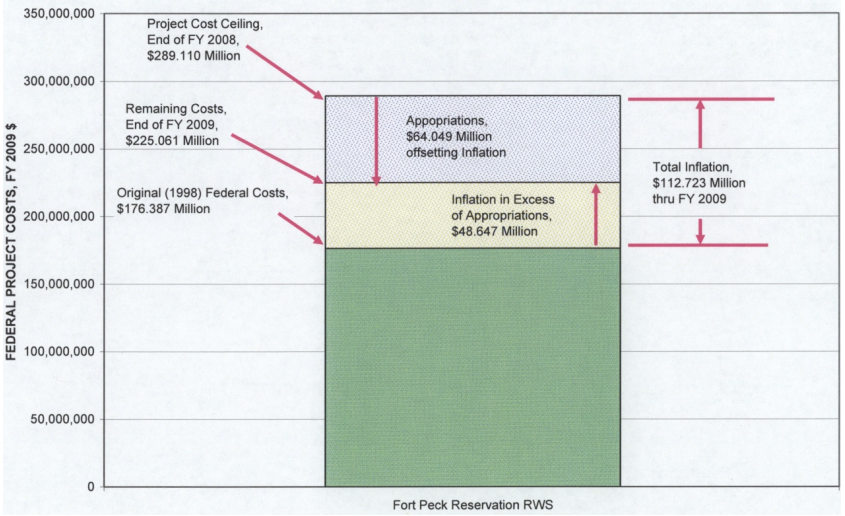
ATTACHMENT C

ASSINIBOINE SIOUX AND DRY PRAIRIE RWS
MASTER PLAN, OCTOBER 2008 $

	Authorized Funds				FY 2008 Work Plan				Future Use of Funds by Construction Year					
Segment	Original Cost (Oct 1998 $)	Indexed Cost (Oct 2008 $)	Fort Peck Contract Cost	Dry Prairie Contract Cost	Spent thru 9/30/2008	FY 2008 Carryover	Use of FY2009 Funds	Balance To Complete	6 2,010	7 2,011	8 2,012	9 2,013	10 2,014	Total
Missouri River Raw Water Intake	2,880,000	3,164,000	4,047,000		4,047,000	0	0	0						4,047,000
Intake Extension			2,000,000					2,000,000		2,000,000				2,000,000
Treatment Plant														
Sludge Lagoons	2,600,000	3,275,000	2,600,000		2,600,000	0	0	0						2,600,000
Water Treatment Plant														
Phase I	8,000,000	10,456,000	15,151,000		6,358,000	8,793,000	0	0	0					15,151,000
Phase II	6,134,000	8,610,000	27,500,000		0	6,513,000	3,998,000	16,989,000	16,989,000					27,500,000
Poplar to Big Muddy	22,681,000	41,651,000												
Poplar to Big Muddy			45,603,000		0	0	0	45,603,000		8,000,000	10,000,000	16,000,000	11,603,000	45,603,000
Fort Kipp			873,000		0	0	873,000	0						873,000
Highway 13 to FP Boundary	9,247,000	16,981,000	0		0	0		0					0	0
Poplar to Porcupine Creek	40,190,000	73,803,000												
WTP to Poplar			11,000,000		0	0	0	11,000,000	9,000,000	2,000,000				11,000,000
WTP to Wolf Point			4,000,000		0	0	0	4,000,000		4,000,000				4,000,000
Wolf Point to Porcupine Creek			66,074,000		0	0	0	66,074,000		8,000,000	20,000,000	16,000,000	22,074,000	66,074,000
FP OM Buildings	1,000,000	1,173,000	1,173,000		0	706,000	0	467,000	467,000				0	1,173,000
FP Electrical, Meters, Easements	4,164,000	5,730,000	5,730,000		0	0		5,730,000				819,000	4,911,000	5,730,000
Subtotal	96,896,000	164,843,000	185,751,000		13,005,000	16,012,000	4,871,000	151,863,000	26,456,000	24,000,000	30,000,000	32,819,000	38,588,000	185,751,000
Planning, Design, Admin														
Reclamation Oversight	3,913,000	5,576,000	5,576,000		1,032,000	0	213,000	4,331,000	866,000	866,000	866,000	866,000	867,000	5,576,000
Environmental Mitigation	489,000	712,000	712,000		0	0	0	712,000	142,000	142,000	142,000	142,000	144,000	712,000
Administration	6,744,000	9,336,000	9,336,000		4,536,000	0	902,000	3,898,000	780,000	780,000	780,000	780,000	778,000	9,336,000
Easement Acquisition	2,621,000	3,817,000	3,817,000		0	0	0	3,817,000	763,000	763,000	763,000	763,000	765,000	3,817,000
Design	7,582,000	10,767,000	10,767,000		2,004,000	736,000	0	8,027,000	1,605,000	1,605,000	1,605,000	1,605,000	1,607,000	10,767,000
Inspection	6,847,000	9,711,000	9,711,000		3,478,000	0	1,100,000	5,133,000	1,027,000	1,027,000	1,027,000	1,027,000	1,025,000	9,711,000
Subtotal	28,196,000	39,919,000	39,919,000		11,050,000	736,000	2,215,000	25,918,000	5,183,000	5,183,000	5,183,000	5,183,000	5,186,000	39,919,000
Total	125,092,000	204,762,000	225,670,000		24,055,000	16,748,000	7,086,000	177,781,000	31,639,000	29,183,000	35,183,000	38,002,000	43,774,000	225,670,000
Big Muddy to Plentywood														
Culbertson to Medicine Lak	4,360,000	5,301,000		4,360,000	4,360,000	0	0	0						4,360,000
A-Branches and Meters	6,534,000	10,371,000		6,534,000	6,534,000	0	0	0						6,534,000
Remaining	8,539,000	15,681,000		20,857,000	0	0	158,000	20,699,000	5,174,750	5,174,750	5,174,750	5,174,750		20,857,000
Fort Kipp				239,000	0	0	0	239,000	239,000					239,000
FP Boundary to Scobey	4,025,000	7,391,000		14,540,000	0	0	0	14,540,000			7,000,000	5,550,000	1,990,000	14,540,000
Scobey to Plentywood	9,838,000	18,066,000		11,098,000	0	0	0	11,098,000				3,000,000	8,098,000	11,098,000
Scobey to Opheim	7,945,000	14,590,000		0	0	0	0	0						0
Porcupine Creek to Opheim	7,380,000	12,940,000			0	0	0	0						
St. Marie to Nashua		0		14,839,000	0	3,674,000	1,077,000	10,088,000	5,044,000	5,044,000	0			14,839,000
St. Marie to Opheim		0		16,680,000	0	0	0	16,680,000	3,750,000	2,650,000	3,950,000	3,950,000	2,380,000	16,680,000
DP OM Buildings	1,000,000	1,375,000		1,375,000	0	0	0	1,375,000					1,375,000	1,375,000
DP Electrical, Meters, Easements	3,021,000	4,146,000		4,146,000	0	0	239,000	3,907,000					3,907,000	4,146,000
	52,642,000	89,861,000	0	94,668,000	10,894,000	3,674,000	1,474,000	78,626,000	14,207,750	12,868,750	16,124,750	17,674,750	17,750,000	94,668,000
Planning, Design, Admin														
Reclamation Oversight	2,108,000	3,011,000		3,011,000	555,000	0	87,000	2,369,000	474,000	474,000	474,000	474,000	473,000	3,011,000
Environmental Mitigation	264,000	372,000		372,000	145,000	0	25,000	202,000	40,000	40,000	40,000	40,000	42,000	372,000
Administration	3,947,000	5,524,000		5,524,000	2,049,000	0	671,000	2,804,000	561,000	561,000	561,000	561,000	560,000	5,524,000
Easement Acquisition	759,000	1,095,000		1,095,000	88,000	0	0	1,007,000	201,000	201,000	201,000	201,000	203,000	1,095,000
Design	4,085,000	5,806,000		5,806,000	1,610,000	0	386,000	3,810,000	762,000	762,000	762,000	762,000	762,000	5,806,000
Inspection	3,689,000	5,315,000		5,315,000	745,000	0	205,000	4,365,000	873,000	873,000	873,000	873,000	873,000	5,315,000
Subtotal	14,852,000	21,123,000	0	21,123,000	5,192,000	0	1,374,000	14,557,000	2,911,000	2,911,000	2,911,000	2,911,000	2,913,000	21,123,000
Total	67,494,000	110,984,000	0	115,791,000	16,086,000	3,674,000	2,848,000	93,183,000	17,118,750	15,779,750	19,035,750	20,585,750	20,663,000	115,791,000
Tribes (All Federal)	125,092,000	204,762,000	225,670,000		24,055,000	16,748,000	7,086,000	177,781,000	31,639,000	29,183,000	35,183,000	38,002,000	43,774,000	225,670,000
Dry Prairie	67,494,000	110,984,000		115,791,000	16,086,000	3,674,000	2,848,000	88,376,000	17,118,750	15,779,750	19,035,750	20,585,750	15,856,000	110,984,000
Federal	51,295,000	84,348,000		84,348,000	12,225,000	3,674,000	2,914,000	65,535,000	13,010,000	11,993,000	14,467,000	15,645,000	10,420,000	84,348,000
Non-Federal	16,199,000	26,636,000		26,636,000	3,861,000	0	(66,000)	22,841,000	4,108,750	3,786,750	4,568,750	4,940,750	5,436,000	26,636,000
Total Project	192,586,000	315,746,000	225,670,000	115,791,000	40,141,000	20,422,000	9,934,000	266,157,000	48,757,750	44,962,750	54,218,750	58,587,750	59,630,000	336,654,000
Federal	176,387,000	289,110,000	225,670,000	84,348,000	36,280,000	20,422,000	10,000,000	243,316,000	44,649,000	41,176,000	49,650,000	53,647,000	54,194,000	310,018,000

ATTACHMENT D

INFLATION OUTPACES APPROPRIATIONS THRU FY 2009



PREPARED STATEMENT OF THE NATIONAL FISH AND WILDLIFE FOUNDATION

Mr. Chairman and members of the subcommittee, thank you for the opportunity to submit testimony regarding fiscal year 2010 Department of the Interior Appropriations and funding for the National Fish and Wildlife Foundation (Foundation). We respectfully request your approval of $5 million through the Bureau of Reclamation's Water and Related Resources fiscal year 2010 appropriation. This funding request for fiscal year 2010 is within the authorized level for the Foundation and would allow us to expand our historical partnership with the Bureau of Reclamation.

In 2009, the Foundation is celebrating its 25th Anniversary and a remarkable history of bringing private partners together to leverage Federal funds to conserve fish, wildlife, plants and their habitats. The Foundation is required by law to match each federally-appropriated dollar with a minimum of one non-Federal dollar. We consistently exceed this requirement by leveraging Federal funds at a 3:1 ratio while providing thought leadership and emphasizing accountability, measurable results, and sustainable conservation outcomes. Funds appropriated by this subcommittee are fully dedicated to project grants and do not cover any overhead expenses of the Foundation.

As of fiscal year 2008, the Foundation had awarded over 10,000 grants to more than 3,500 national and community-based organizations through successful partnerships with the Department of the Interior agencies, including the Bureau of Reclamation (BOR), U.S. Fish and Wildlife Service (FWS), Bureau of Land Management (BLM). In addition, our collaborative inter-agency model has grown to include partnerships with the Environmental Protection Agency, National Oceanic and Atmospheric Administration, USDA Forest Service, USDA Natural Resources Conservation Service, and several other Federal agencies. This effective model brings together multiple Federal agencies with local government and private organizations to implement conservation strategies that directly benefit diverse habitats and a wide range of fish and wildlife species.

HISTORY OF BOR PARTNERSHIP

BOR has been an important funding partner with the Foundation since 1996. This subcommittee provided direct BOR appropriations to the Foundation during fiscal year 1996-fiscal year 2003 and we also have a long history of working with BOR through discretionary cooperative agreements. Some examples of our successful partnership include:

—*Pacific Grassroots Salmonid Initiative*.—BOR was a partner with the Foundation and NOAA to restore native fish habitat in California, Oregon, and Alaska. Community-based grants support projects for in-stream habitat restoration, fish passage improvements, and barrier removals to benefit salmonids.

—*Bring Back the Natives Program*.—BOR participated in a national grant program to restore aquatic species back to historic habitats with the Foundation, U.S. Fish and Wildlife Service, Forest Service and Bureau of Land Management. Bring Back the Natives has already benefited more than 120 species, including 29 listed species such as salmon, desert pupfish, modoc suckers, tui and borax chubs and toiyabe spotted frog.

—*Lower Colorado River Multi-Species Conservation Program*.—The Foundation previously partnered with BOR as part of this program to administer funds and coordination of on-the-ground conservation activities. As part of the program, the Foundation successfully acquired 1,400 acres of Southwestern Willow Flycatcher riparian habitat in New Mexico and Arizona.

—*Williamson River Delta*.—BOR is currently a partner in the Foundation's efforts in the Williamson River Delta of Upper Klamath Lake to protect, restore and maintain shoreline wetlands critically important for the ESA-listed short-nosed and Lost River suckers and to support monitoring efforts for fish passage in the basin.

FISCAL YEAR 2010 OPPORTUNITIES

Fiscal year 2010 appropriations through BOR would allow the Foundation to build more robust programs for our ongoing efforts and forge new and innovative partnerships with BOR that will be required to further develop water transaction programs to increase in-stream flows for fish, removing fish passage barriers, and improving water quality in reservoirs. These strategies are essential to the recovery of many important fish species and provide important recreational opportunities for the public.

It is widely known that climate change will endanger some fish and wildlife populations and ecosystems more than others. In fiscal year 2008, the Foundation initiated grant-making through new keystone initiatives, which focus on conservation and measurable impact on select species of birds, fish and sensitive habitats. With BOR and other agency funding in fiscal year 2010, we will accelerate implementation of these strategic initiatives, many of which seek to address the affects of climate change through wildlife and natural resource adaptation. To ensure success in these investments, we are incorporating monitoring and evaluation into the entire lifecycle of our strategic initiatives in order to identify the highest priority areas that will be resilient to climate change to assure long-term conservation effectiveness, measure progress, promote adaptive management, demonstrate results, and continuously learn from our grant-making.

With our partners, the Foundation has identified several species and ecosystems in need of immediate conservation action. In partnership with BOR, fiscal year 2010 funds will focus on restoration of in-stream flows, imperiled species recovery, and reservoir management.

—*Restoration of In-Stream Flows*.—We recognize that climate change will greatly exacerbate two existing water supply problems which impact wildlife and the public—too little water during critical fish migration periods and the seasonality of freshwater supplies. The Foundation has successfully implemented a water transactions program in the Columbia Basin in partnership with the Bonneville Power Administration, local water trusts, agencies and willing landowners. Building on this success, the Foundation is working proactively with Federal, State and local partners to expand voluntary water transaction programs to benefit a diversity of wildlife species while improving water flows year-round for human use. BOR funding in fiscal year 2010 would support voluntary water transaction programs in the Klamath Basin of Oregon and California to add water storage capability in the watershed and increase available flows to meet both fish and irrigation needs. In central California, fiscal year 2010 funds would also support in-stream flow restoration along the Upper Sacramento River and water storage and increased flows in the Sierra Nevada alpine wetlands, or wet meadows.

—*Imperiled Species Recovery*.—Fiscal year 2010 funding would benefit the recovery of multiple fish species in the key watersheds. For example, wetland and stream habitat restoration on working landscapes in the Upper Klamath Basin, Oregon, will benefit two ESA-listed sucker species and native redband trout. In the Lower Klamath Basin of northern California, habitat restoration, fish passage improvement and a new water transactions program would restore flows

for Coho salmon, Chinook salmon and steelhead trout. In the Upper Colorado River Basin, our efforts will focus on the warmwater-coldwater interface to improve habitat for Colorado Cutthroat trout, native suckers and chubs on both public and private lands.

—*Reservoir Management*.—Fiscal year 2010 funding would support implementation of a Colorado River native fishes habitat restoration program near BOR reservoirs. Working with BOR and the U.S. Fish and Wildlife Service, one or two high priority reservoirs will be targeted to serve as demonstration projects for how reservoir habitat restoration can lead to improved lake health, increased wildlife-related recreation opportunities and strengthened local economies. In many reservoirs across the west, fish habitat has significantly diminished since construction of the reservoirs. This is due to loss of habitat structure within the reservoir as well as reduced water quality upstream of the reservoir. The Foundation will work with BOR and other partners to improve upstream habitat and water quality for native fish while also improving habitat conditions within the reservoir.

With a fiscal year 2010 BOR appropriation, the Foundation would engage non-Federal donors to support these strategic conservation initiatives through corporate contributions, legal settlements, and direct gifts. As a neutral convener, the Foundation is in a unique position to work with the Federal agencies, State and local government, corporations, foundations, conservation organizations and others to build strategic partnerships to address the most significant threats to fish and wildlife populations and their habitats. Currently, the Foundation has active partnerships with more than 30 corporations and foundations and 17 Federal agencies.

Efficiency, Performance Measures and Accountability

In the last couple of years, the Foundation has taken important strides to strengthen our performance measures and accountability. For example, the Foundation is working with scientists and other experts to develop species-specific metrics for each of our keystone initiatives that we will use to measure our progress in achieving our conservation outcomes. Our grant review and contracting processes have been improved to ensure we maximize efficiency while maintaining strict financial and evaluation-based requirements. We have enhanced our Web site with interactive tools such as webinars and a grants library to enhance the transparency of our grant-making, and instituted a new paperless application and grant administration system. In 2009, we will continue our efforts improve communication between and among our stakeholders and streamlining of our grant-making process.

The Foundation's grant-making involves a thorough internal and external review process. Peer reviews involve Federal and State agencies, affected industry, nonprofit organizations, and academics. Grants are also reviewed by the Foundation's issue experts, as well as evaluation staff, before being recommended to the Board of Directors for approval. In addition, according to our Congressional Charter, the Foundation provides a 30-day notification to the Members of Congress for the congressional district and State in which a grant will be funded, prior to making a funding decision.

Once again, Mr. Chairman, we greatly appreciate your continued support and hope the subcommittee will approve funding for the Foundation in fiscal year 2010.

PREPARED STATEMENT OF THE NORTHERN COLORADO WATER CONSERVANCY DISTRICT

Dear Chairman Dorgan and Senator Bennett, on behalf of the Northern Colorado Water Conservancy District, I am requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF APS

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

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I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE NEW MEXICO INTERSTATE STREAM COMMISSION

Dear Chairman Dorgan, attached herewith is my statement in support of funding for the U.S. Bureau of Reclamation's Colorado River Basin salinity control program. I sincerely appreciate your favorable consideration of this statement and request that it be made a part of the formal hearing record for fiscal year 2010 appropriations for the Bureau of Reclamation. Also, I fully support the statement of Jack Barnett, Executive Director, Colorado River Basin Salinity Control Forum, submitted to you in support of the Bureau of Reclamation's Colorado River Basin salinity control program.

PREPARED STATEMENT OF THE CENTRAL UTAH WATER CONSERVANCY DISTRICT

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE SANTA CLARA VALLEY WATER DISTRICT

SUMMARY

This statement urges the subcommittee's support for a fiscal year 2010 appropriation of $40 million for California Bay-Delta Restoration.

STATEMENT OF SUPPORT CALFED BAY-DELTA PROGRAM

Background.—In an average year, half of Santa Clara County's water supply is imported from the San Francisco Bay/Sacramento-San Joaquin Delta estuary (Bay-Delta) watersheds through three water projects: The State Water Project, the Federal Central Valley Project, and San Francisco's Hetch Hetchy Project. In conjunction with locally developed water, this water supply supports more than 1.7 million residents in Santa Clara County and the most important high-tech center in the world. In average to wet years, there is enough water to meet the county's long-term needs. In dry years, however, the county could face a water supply shortage of as much as 100,000 acre-feet per year, or roughly 20 percent of the expected demand. In addition to shortages due to hydrologic variations, the county's imported supplies have been reduced due to regulatory restrictions placed on the operation of the State and Federal water projects.

There are also water quality problems associated with using Bay-Delta water as a drinking water supply. Organic materials and pollutants discharged into the Delta, together with salt water mixing in from San Francisco Bay, have the potential to create disinfection by products that are carcinogenic and pose reproductive health concerns.

Santa Clara County's imported supplies are also vulnerable to extended outages due to catastrophic failures such as major earthquakes and flooding.

Project Synopsis.—The CALFED Bay-Delta Program is an unprecedented, cooperative effort among Federal, State, and local agencies to restore the Bay-Delta. With input from urban, agricultural, environmental, fishing, and business interests, and the general public, CALFED has developed a comprehensive, long-term plan to address ecosystem and water management issues in the Bay-Delta.

Restoring the Bay-Delta ecosystem is important not only because of its significance as an environmental resource, but also because failing to do so will stall efforts to improve water supply reliability and water quality for millions of Californians and the State's trillion dollar economy and job base.

The passage of H.R. 2828 (Public Law 108–361) in 2004 reauthorized Federal participation in the CALFED Bay-Delta Program and provided $389 million in new and expanded funding authority for selected projects, including the San Luis Reservoir Low Point Improvement Project. The San Luis Project is one of six new projects, studies or water management actions authorized to receive a share of up to $184 million under the conveyance section of the bill. It is critical that Federal funding be provided to implement the actions authorized in the bill in the coming years.

Fiscal Year 2009 Funding.—Congress appropriated $40 million to the program in fiscal year 2009.

Fiscal Year 2010 Funding Recommendation.—It is requested that the congressional committee support an appropriation of $40 million for California Bay-Delta Restoration.

PREPARED STATEMENT OF THE COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION (CREDA)

Dear Chairman Dorgan and Senator Bennett, the Colorado River Energy Distributors Association (CREDA) requests your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities. This funding is authorized by Public Law 106–392, as amended.

CREDA members serve over 4 million electric consumers in the States of Arizona, Colorado, Nevada, Utah, New Mexico and Wyoming. CREDA members are the purchasers of the clean, renewable hydropower resources of the Federal Colorado River Storage Project (CRSP). CREDA is a participant in these cooperative programs. CRSP power revenues are continuing to be used to provide ongoing base funding for these programs. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

CREDA appreciates the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE UTAH WATER USERS ASSOCIATION

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF DENVER WATER

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE GRAND VALLEY WATER USERS ASSOCIATION

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION

Honorable Chairman Dorgan, Ranking Member Bennett, members of the subcommittee, we respectfully request fiscal year 2010 appropriation of funds for two priority watershed restoration and agricultural water supply protection projects in Oregon and Washington, the Umatilla Basin Water Supply Study Project (previously funded under the Umatilla Basin Project Phase III, OR) and the Walla Walla General Investigation Stream Flow Restoration Feasibility Study (previously funded under the Walla Walla River Watershed, OR & WA).

—For the Umatilla Basin Water Supply Project, Oregon, we request an appropriation of $150,000 in the Bureau of Reclamation, Pacific Northwest Region, Water and Related Resources budget. This request will enable the Bureau to finish the study and brings to fruition the project that was initiated by the $450,000 committed by the Bureau of Reclamation to the project in fiscal year 2007, the approximately $488,000 and $342,000 provided by the subcommittee for fiscal year 2008 and fiscal year 2009 respectively.

—For the Walla Walla River Watershed, Oregon and Washington, we request an appropriation of $500,000 in the U.S. Army Corps of Engineers, Portland Division, Walla Walla District, General Investigations budget, and an additional $270,000 identified for the Corps to provide to the Confederated Umatilla Tribes through inter-governmental agreement to complete work required as project sponsor. This request will allow the district and the tribal government as Project Sponsor to move directly into Pre-Construction Engineering and Design after completion of Feasibility Report in 2010. This project is also known as Walla Walla River Basin Feasibility Report/Environmental Impact Statement.

Both the Umatilla Basin Water Supply Project and the Walla Walla General Investigation Stream Flow Restoration Feasibility Study are ongoing projects and have had administration and/or Congressional line item funding in past fiscal years.

UMATILLA RIVER BASIN, OREGON WATER SUPPLY PROJECT

By letter dated March 19, 2007, the Office of the Secretary of Interior responded favorably to the formal requests of the Oregon Congressional delegation and of the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), Westland Irrigation District and Oregon Governor Theodore Kulongoski to initiate the study of the Umatilla Basin water development projects and concurrent settlement of the tribe's reserved water rights. Counselor to the Secretary, L. Michael Bogert, wrote "I will ask the Secretary's Indian Water Rights Office to appoint an Assessment Team . . ." and "I will also ask the Bureau of Reclamation to move forward with a concurrent appraisal level study of water supply options, including a full Phase III exchange . . . to help resolve the tribe's water rights claims."

The Bureau of Reclamation provided $450,000 in fiscal year 2007 for work on the Umatilla Basin water supply appraisal study. The subcommittee subsequently provided approximately $488,000 and $342,000 for this account in the fiscal year 2008 and fiscal year 2009 Energy and Water Appropriations bills. The Bureau is actively developing its Umatilla Basin Water Supply Study with these funds and will complete the project in 2010 with the requested funding.

The Umatilla Basin Water Supply Project is authorized by the Reclamation Feasibility Studies Act of 1966, 80 Stat. 707, Public Law 89–561, (Sept. 7, 1966).

The fiscal year 2010 request of $150,000 will enable the Bureau of Reclamation to complete the estimated 2½ year appraisal level study in mid 2010. The detailed appraisal study project will inform the concurrent Interior Department Indian Water Rights Assessment Team's work product. In 2010, Interior should have identified and estimated costs and feasibility of a clear project or suite of projects necessary to satisfy water rights of the CTUIR and in the Umatilla River.

This fiscal year 2010 request follows on the work of the Bureau of Reclamation, authorized by the Umatilla Basin Project Act of 1988 (100 Public Law 557; 102 Stat. 2782 title II), to construct and operate the Phase I Exchange with West Extension Irrigation District and the Phase II Exchange with Hermiston and Stanfield Irrigation Districts. Heralded as one of the most successful stream flow restoration and salmon recovery projects in the Columbia River Basin, the Umatilla Basin Project resulted in partially restored stream flows in the Umatilla River and successful reintroduction of spring Chinook, fall Chinook and Coho salmon. After nearly a century of dry river bed in summer months and extinction of all salmon stocks, there has been an Indian and non-Indian salmon fishery nearly every year in the Umatilla River since the project was completed in the mid-1990s.

Completion of the Water Supply Study and the concurrent Tribal Water Rights Assessment is supported and endorsed by the Honorable Governor Ted Kulongoski

and by local irrigation districts including specifically Westland Irrigation District, the Umatilla County Commission, and local municipalities including specifically the city of Irrigon.

WALLA WALLA BASIN, OREGON AND WASHINGTON, GI FEASIBILITY STUDY

In its eighth and final full year of work leading to Study completion, the U.S. Army Corps of Engineers' feasibility study will complete a detailed analysis of the preferred alternative selected to restore stream flows in the Walla Walla River. Drained nearly dry during summer months by irrigation in Oregon and Washington, the Walla Walla River is within the aboriginal lands of the CTUIR and the complete loss of salmon violates the agreement by the United States in the Treaty of 1855 to protect these fish.

Since the study's inception, approximately $4 million of Federal funds have either been budgeted or appropriated for completion of the Study through fiscal year 2009. The Walla Walla District will complete the Feasibility Study Report in fiscal year 2010 and this request for $500,000 for the Corps and $270,000 for the tribe will allow the District and CTUIR to move directly into initiation of Pre-Construction Feasibility and Design phase.

The Feasibility Study Project is authorized by the Senate Committee on Public Works July 27, 1962 (Columbia River and Tributaries), 87th Congress, House Document No. 403 and initiated as a result of a positive Reconnaissance Report for the Walla Walla River Watershed (1997) under a General Investigation study.

The CTUIR is the formal sponsor of the Corps of Engineers Feasibility Study and has provided over $4.0 million in in-kind contributions. Additionally, the State of Washington Department of Ecology has provided $400,000 to the Feasibility Study. This is the first year the CTUIR will request Federal funding, over and above that requested for Corps of Engineers work, to enable the tribe's continuation as Project Sponsor. Because of the unique status as a Federal-recognized Indian tribe with Treaty Rights to the Walla Walla Basin, and owing to the fact the CTUIR is the formal sponsor of the Project, the Confederated Umatilla Tribes request an additional appropriation of $270,000 to support their sponsor-required work of real estate transactions and water right permitting from Oregon and Washington. This will allow the tribe to initiate this work and will necessitate additional and continued 2011 support to fund acquisition of real property and other related activities. Prior to addressing this unique situation in an upcoming Water Resources Development Act bill, CTUIR requests the subcommittee consider this request as a clear exception to the standard requirement that non-Federal sponsors provide non-Federal funding.

Support for the completion of the Feasibility Study and moving to construction of the project is strong and diverse and includes the Honorable Governor of Washington Christine Gregoire, the Honorable Governor of Oregon Ted Kulongoski, the Walla Walla Watershed Alliance, the Walla Walla Basin Watershed Council, basin irrigation districts, local State legislators, local governments and many local and regional advocacy groups.

CONCLUSION

In closing, the CTUIR appreciates the opportunity to provide this testimony in support of adding funds for the ongoing Umatilla River Basin Water Supply Project, Bureau of Reclamation, and the Walla Walla River Basin Watershed Restoration Feasibility Study, Army Corps of Engineers. Both projects are critically important to protecting existing agricultural economies, completing future water supply development and concurrently restoring stream flows and recovering threatened salmon and other Columbia River Basin fish stocks.

Thank you.

PREPARED STATEMENT OF THE UNCOMPAHGRE VALLEY WATER USERS ASSOCIATION

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Develop-

ment activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE UPPER GUNNISON RIVER WATER CONSERVANCY DISTRICT

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

DEPARTMENT OF ENERGY

PREPARED STATEMENT OF THE GAS TURBINE ASSOCIATION (GTA)

The Gas Turbine Association appreciates the opportunity to provide the United States Senate Committee on Appropriations Subcommittee on Energy and Water Development with our industry's statement recommending fiscal year 2010 funding levels for the Department of Energy.

GTA recommends that the fiscal year 2010 appropriation for Fossil Energy include $45 million for the Advanced Turbines Program to meet critical national goals of fuel conservation, fuel flexibility (including syngas and hydrogen), greenhouse gas reduction, and criteria pollutant reduction. We also recommend that Congress take appropriate action to ensure the Office of Energy Efficiency and Renewable Energy, Industrial Technologies Program fiscal year 2010 appropriation include $10 million, directed towards small gas turbine research, as part of the Distributed Energy program to achieve goals similar to those referenced above for the Fossil Energy initiative. In both cases a public-private partnership is needed to ensure success.

It is clear that dramatic reductions in greenhouse gas emissions are in the national interest. It is also clear that our economy needs more electric generation capacity to resume and promote further growth. Without new technology, the power generation industry will be hard pressed to produce additional electric capacity, while at the same time meeting the strict greenhouse gas emissions standards being set by States and the Federal Government.

Federal investment in research and technology development for advanced gas turbines that are more versatile, cleaner, and have the ability to burn hydrogen-bearing reduced carbon synthetic fuels and carbon-neutral alternative fuels is needed to ensure the reliable supply of electricity in the next several decades. Domestic coal based Integrated Gasification Combined Cycle (IGCC) with carbon capture and sequestration is one such approach that would significantly supplement available supplies of domestic natural gas to guarantee an adequate supply of clean and affordable electric power. Alternative fuel choices range from imported LNG, coal bed methane, and coal-derived synthetic or process gas to biogas, waste-derived gases and hydrogen. Research is needed to improve the efficiency, reduce capital and operating costs, and reduce emissions.

TECHNOLOGIES FOR ADVANCED IGCC/H_2 GAS TURBINE—REDUCING THE PENALTY FOR CO_2 CAPTURE

At current rates of research and development it is unlikely that the Nation will have available the gas turbine technologies to meet the needs of FutureGen type power plants. The advancement of these technologies must be undertaken by the DOE since there is currently no pathway to the development, insertion, and maturation of these technologies into the Nation's electric power infrastructure based on market forces. Thus, a combined effort by the public and private sectors is necessary.

The turbines and related technologies being developed under the DOE FE Advanced Turbines program will directly advance the performance and capabilities of future power generation with CO_2 capture and sequestration. Advances are needed to offset part of the power plant efficiency and output reductions associated with CO_2 capture. Program funding is required to cost-share in the technology development of advanced hydrogen/syngas combustors and other components to realize the DOE goals.

Several GTA member companies are working cost-share programs with the DOE to develop technologies for advanced gas turbine power plants with carbon capture. These technologies will: (1) increase plant efficiency; (2) increase plant capacities; and (3) allow further reductions in combustion emissions of hydrogen rich fuels associated with CO_2 capture and sequestration. This will help offset some of the efficiency and output penalties associated with CO_2 capture. These programs are funding technology advancement at a much more rapid rate than industry can do on their own.

The need for increased levels of Federal cost-share funding is immediate. The funding levels in past years for the Advanced Turbines program has been inadequate to meet DOE's Advanced Power System goal of an IGCC power system with high efficiency (45–50 percent HHV), near-zero emissions and competitive capital cost. To meet this goal, the researchers must demonstrate a 2 to 3 percentage point improvement in combined cycle efficiency above current state-of-the-art Combined Cycle turbines in IGCC applications.

The plan for the IGCC-based FutureGen-type application is to develop the flexibility in this same machine with modifications to operate on pure hydrogen as the primary energy source while maintaining the same levels of performance in terms efficiency and emissions. The goal is to develop the fundamental technologies needed for advanced hydrogen turbines and to integrate this technology with CO_2 separation, capture, and sequestration into a near-zero emission configuration that can provide electricity with less than a 10 percent increase in cost over conventional plants by 2012.

The Advanced Turbines program is also developing oxygen-fired (oxy-fuel) turbines and combustors that are expected to achieve efficiencies in the 44–46 percent range, with near-100 percent CO_2 capture and near-zero NO_X emissions. The development and integrated testing of a new combustor, turbine components, advanced cooling technology, and materials in oxy-fuel combustors and turbines is needed to make these systems commercially viable.

The knowledge and confidence that generating equipment will operate reliably and efficiently on varying fuels is essential for the deployment of new technology. Years of continued under funding of the Advanced Turbines program has already delayed the completion dates for turbine R&D necessary for advanced IGCC, as well as timing for a FutureGen-type plant validation.

MEGA-WATT SCALE TURBINE R&D

In the 2005 Enabling Turbine Technologies for High-Hydrogen Fuels solicitation, the Office of Fossil Energy included a topic area entitled "Development of Highly Efficient Zero Emission Hydrogen Combustion Technology for Mega-Watt Scale Turbines". Turbine manufacturers and combustion system developers responded favorably to this topic, but DOE funding constraints did not allow any contract awards. The turbine industry recommends a follow-up to this solicitation topic that would allow the developed combustion technology to be tested in machines at full scale conditions and allow for additional combustion technology and combustor development for high-hydrogen fuels.

The turbine industry believes that this technology is highly relevant to industrial coal gasification applications including: (1) site-hardened black-start capability for integrated gasification combined cycle applications (the ability to restart an IGCC power plant when the electric grid has collapsed); (2) supplying plant electric load fueled on syngas or hydrogen; (3) increasing plant steam cycle capacity on hot days when large amounts of additional power are needed; and (4) in gas turbines for com-

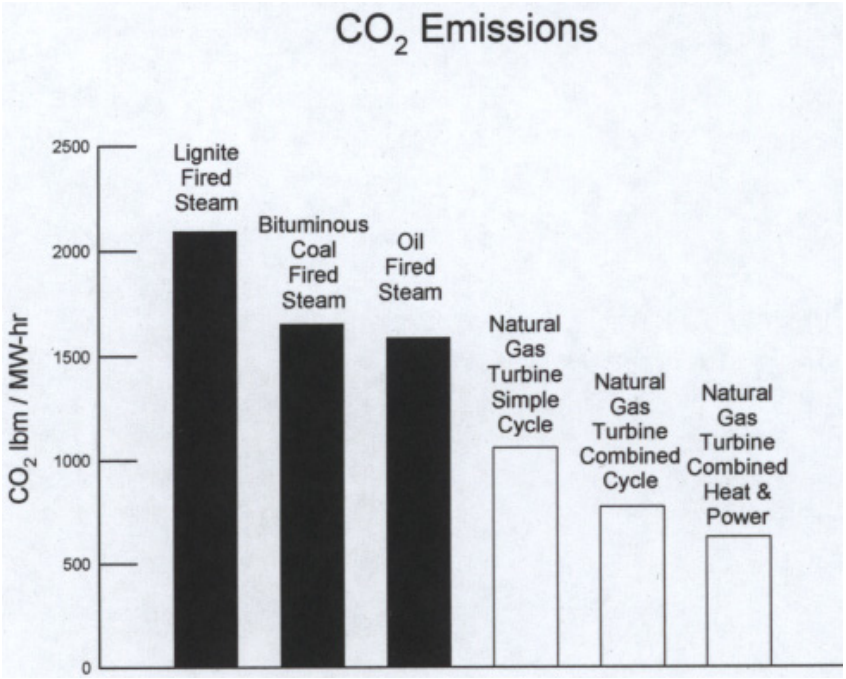
pression of high-hydrogen fuels for pipeline transportation. The development of MW-scale turbines (1–100 MW) fueled with high-hydrogen fuels will promote the sustainable use of coal. In addition, highly efficient aeroderivative megawatt scale engines operate under different conditions than their larger counterparts and are installed for peaking or distributed generation applications. Funding is required to design efficient and low emissions combustors that accommodate the new fuels.

HIGH-EFFICIENCY, LOW CARBON, FUEL FLEXIBLE SMALL GAS TURBINES FOR DISTRIBUTED ENERGY

The Distributed Energy Program of EERE's Industrial Technologies program should include $10 million to initiate small gas turbine research and development programs to dramatically increase their fuel efficiency (and thus reduce their carbon footprint) and to make them fuel flexible. Distributed energy is critical to building a efficient, diverse, and robust electric power infrastructure. Specifically, this program should set a goal of 42 percent efficiency (on a lower heating value basis) for advanced small gas turbines while enhancing their fuel flexibility to include dual fuel and alternative fuel utilization. These programs should build on the success of the Advanced Micro-turbine program of past years to overcome the barriers to insertion of Distributed Energy into our Nation's electrical infrastructure and to build on potential synergies between advanced small gas turbines and the advances in waste heat capture such as combined heat and power (CHP) and organic Rankine cycle (ORC).

GAS TURBINES REDUCE GREENHOUSE GAS EMISSIONS

The gas turbine industry's R&D partnership with the Federal Government has steadily increased power plant efficiency to the point where natural gas fired turbines can reach combined cycle efficiencies of 60 percent, and quick-start simple cycle peaking units can reach 46 percent. The gas turbine's clean exhaust can be used to create hot water, steam, or even chilled water. In such combined heat and power applications, overall system efficiency levels can reach 60 to 85 percent LHV. This compares to 40–45 percent for even the most advanced thermal steam cycles (most of which are coal fired).



Gas turbines already play a very significant role in minimizing greenhouse gas emissions worldwide. Gas turbines are both more efficient and typically burn lower carbon fuels compared to other types of combustion-based power generation and mechanical drive applications. The Nation needs to reinvigorate the gas turbine/Government partnership in order to develop new, low carbon power plant solutions without increasing our reliance on natural gas. This can be done by funding research to make gas turbines more capable of utilizing hydrogen and synthetic fuels as well as increasing the efficiency, durability and emissions capability of natural gas fired turbines. If Congress provides adequate funding to DOE's turbine R&D efforts, technology development and deployment will be accelerated to a pace that will allow the United States to achieve its emissions and energy security goals.

The GTA respectfully requests $45 million in fiscal year 2010 appropriations for the Fossil Energy Advanced Turbines Program, and $10 million for the Energy Efficiency & Renewable Energy ITP/Distributed Energy Program directed towards small turbines research in fiscal year 2010 to meet critical national goals of fuel conservation, fuel flexibility (including syngas and hydrogen), greenhouse gas reduction, and criteria pollutant reduction.

GTA MEMBER COMPANIES

Alstom Power; Capstone Turbine Corporation; GE Energy; Florida Turbine Technologies; Rolls-Royce; Siemens Energy; Solar Turbines; Pratt & Whitney Power Systems; Strategic Power Systems; and VibroMeter.

PREPARED STATEMENT OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY

On behalf of the Federation of American Societies for Experimental Biology (FASEB), I respectfully request an fiscal year 2010 appropriation for the Department of Energy Office of Science (DOE SC) of 8 percent over fiscal year 2009. This increase will provide the Office of Science with the ability to sustain support for critical research programs that spur scientific innovation, fuel the economy, move the Nation towards energy independence and improve human health.

As a Federation of 22 professional scientific societies, FASEB represents nearly 90,000 life scientists, making us the largest coalition of biomedical research associations in the Nation. FASEB's mission is to advance health and welfare by promoting progress and education in biological and biomedical sciences, including the research funded by VA, through service to its member societies and collaborative advocacy. FASEB enhances the ability of biomedical and life scientists to improve—through their research—the health, well-being and productivity of all people.

FASEB is composed of 22 societies with more than 80,000 members, making it the largest coalition of biomedical research associations in the United States. Our mission is to advance health and welfare by promoting progress and education in biological and biomedical sciences, including the science supported by DOE SC.

"[T]he Office of Science is commit[ed] to invest in some of the most exciting and daring research that humankind has ever conceived, from explorations into the origins of our universe and the constituents of life, to the scientific knowledge that will deliver new, clean, and abundant sources of energy to meet world needs for 10 billion people by the year 2050."

This bold statement from the DOE SC Strategic Plan[1] highlights DOE SC's unique role in serving as a catalyst for discoveries in basic energy research and in environmental and life sciences as well as computational science. The research programs and facilities at DOE SC support further cutting-edge science and technological innovations that safeguard our Nation, strengthen our economy, and improve the daily lives of the American people.

Each year, more than 25,000 researchers from universities, other government agencies and private industry use DOE SC's extraordinary system of national laboratories and research facilities. DOE's state-of-the-art facilities comprise the most advanced research system of its kind in the world and permit the agency to support unique and vital programs in climate change, geophysics, genomics, materials and chemical sciences, and life sciences. The Office of Science's emphasis on interdisciplinary scientific research supports and extends the basic research that other Federal agencies sponsor, and much of the research that non-DOE science agencies fund could not occur in the absence of DOE's highly specialized research infrastructure.

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[1] United State Department of Energy. 2004. Office of Science Strategic Plan. http://www.er.doe.gov/about/Strategic__Plan/Feb-2004-Strat-Plan-screen-res.pdf.

DOE's contribution to research and science extends beyond the benefits of its national laboratories. The Office of Science is also a principal supporter of graduate students and early career postdoctoral researchers at U.S. colleges and universities. Almost 50 percent of DOE SC's research funding supports research at over 300 colleges, universities and institutes nationwide.

DISCOVERIES THAT IMPROVE HEALTH & WELL-BEING

Scientists whom DOE has supported have uncovered a wealth of basic biological knowledge and have produced astounding health technologies.

—*Restoring Function to Patients with Disabilities*.—Office of Science funding led to the bion® microstimulator, a miniature rechargeable and implantable neurostimulator that may benefit 50 million Americans who suffer from debilitating conditions by stimulating viable nerves and muscles to prevent muscle deterioration and help restore nerve and muscle function. The device can address a wide variety of diseases and disorders, including incontinence, chronic headaches, peripheral pain, angina and epilepsy.

—*Targeted Cancer Therapies*.—DOE scientists have developed the Cesium-131 Brachytherapy Seed, one of the most significant advancements in brachytherapy (short distance treatment involving the use of carefully placed, radioactive "seeds") for cancer treatment in nearly 20 years. In treating prostate and other cancers, it delivers a highly targeted therapeutic dose of radiation to the tumor quickly and with potentially fewer side effects.

Although research DOE SC has funded has already positively influenced our lives and health, opportunities on the horizon are even more exciting. For example, the DOE–SC Artificial Retina Project is developing an artificial retina that can restore sight in patients who are blind; the technology can also help persons who are deaf as well as those who have spinal cord injuries, Parkinson's disease and almost any other neurological disorder. Additionally, researchers at the Argonne National Laboratory and the University of Chicago are engineering an "ice slurry" to cool organs; the slurry may help save stroke or cardiac arrest patients from the destruction of their brain and heart cells.

CLEANER AND MORE SECURE ENERGY FUTURE

Fundamental discoveries in basic energy sciences funded by DOE SC are already having an impact on the energy we use daily and are continuing to pave the way for the next generation of environmentally-conscious, sustainable energy sources. As a recent report[2] on future energy needs produced by DOE stated, "Major new discoveries are needed, and these will largely come from basic research programs."

—*Building Better Batteries*.—DOE SC discoveries resulted in lithium batteries that offer high-energy storage capacity in an environmentally benign package. Lithium batteries are widely used in both consumer and defense applications, such as cellular telephones and notebook computers. Moreover, DOE researchers have generated a solid-state, fluoride-based battery that is safer than traditional batteries in high-temperature applications such as oil, gas and geothermal drilling.

—*Hydrogen Technologies*.—At the Argonne National Lab, scientists have constructed the world's fastest commercially producible hydrogen sensor that can be used in hydrogen-powered cars to detect unsafe levels of hydrogen. Scientists have also developed materials resistant to metal dusting degradation, which will be used to make more durable equipment in plants that manufacture hydrogen.

Researchers are also on the brink of developing new technologies to meet our most pressing energy needs. In an effort to increase the amount of c solar power in the Nation's energy supply, DOE SC is investing in research aimed at improving conversion of solar energy to both electricity and chemical fuels. Moreover, fundamental research awards have been made to institutions nationwide as scientists work to overcome key hurdles in hydrogen production, storage and conversion in an effort to increase the feasibility of hydrogen fuel.

RECOGNIZING THE IMPORTANCE OF DOE RESEARCH

The passage of the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education and Science (COMPETES) Act of 2007 renewed our Nation's commitment to science and technology and established a 7 year dou-

[2] United States Department of Energy, Basic Energy Sciences Advisory Committee. 2003. Basic Research Needs to Assure a Secure Energy Future. http://www.sc.doe.gov/bes/reports/files/SEF_rpt.pdf.

bling path for the budget of DOE SC. In 2009, generous funding provided in the Omnibus Appropriations Act and the American Recovery and Reinvestment Act began to fulfill the commitment Congress has made to scientific and technological innovation. In 2010, we ask that this support continue, both to protect the investments that have been made, and to realize the potential of the scientific enterprise. An fiscal year 2010 funding level for DOE SC of 8 percent over fiscal year 2009 will allow DOE to greatly enhance its groundbreaking research portfolio and permit it to confront current and future energy and health challenges. Scientists who have received DOE SC funding have made and continue to make extraordinary breakthroughs that contribute to the quality of our lives and facilitate advances that drive our Nation's innovative technologies.

PREPARED STATEMENT OF THE BIOMASS ENERGY RESEARCH ASSOCIATION (BERA)

SUMMARY

This testimony pertains to fiscal year 2010 appropriations for biomass energy research, development, and demonstration (RD&D) conducted by the Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE), Biomass Program (OBP). This RD&D is funded by the Energy and Water Development bill, under Energy Supply and Conservation, Energy Efficiency and Renewable Energy. BERA recommends a total appropriation of $400 million in fiscal year 2010 for Biomass and Biorefinery Systems R&D. This is an increase of ~$75 million over the U.S. Department of Energy request for fiscal year 2010 for this programmatic area. Substantial investments in new technology and demonstrations will be needed to meet the RFS goals for advanced biofuels. Specific lines items for the DOE biomass RD&D budget are below (also see Table 1):

—$40,000,000 for Feedstock Infrastructure development (regional partnerships, harvesting and storage technology, exploration of new feedstocks).

—$60,000,000 for Biochemical Conversion Platform Technology (emphasis on cost-effective pretreatment technologies and fermentation organisms—both are large contributors to high cost of biofuels production from cellulosic materials).

—$60,000,000 for Thermochemical Conversion Platform Technology (conversion of plants, oil crops, energy crops, wood and forest resources to oils, long chain hydrocarbons, or other fuels/intermediates).

—$200,000,000 for Utilization of Platform Outputs: Integrated Biorefinery Technologies demonstrations. Technology demonstrations reduce technical and economic risk and accelerate the potential for private investment.

—$40,000,000 for Utilization of Platform Outputs: Bioproducts (chemicals and materials).

BACKGROUND

On behalf of BERA's members, we would like to thank you, Mr. Chairman, for the opportunity to present the recommendations of BERA's Board of Directors for the high-priority programs that we strongly urge be continued or started. BERA is a non-profit association based in the Washington, DC area. It was founded in 1982 by researchers and private organizations conducting biomass research. Our objectives are to promote education and research on the economic production of energy and fuels from biomass, and to serve as a source of information on biomass RD&D policies and programs. BERA does not solicit or accept Federal funding.

TABLE 1.—FISCAL YEAR 2010 BIOMASS/BIOREFINERY SYSTEMS R&D, ENERGY SUPPLY & CONSERVATION, DOE/EERE BIOMASS PROGRAM

[In millions of dollars]

Program Area	Description of RD&D	Total
Feedstock Infrastructure	Regional feedstock partnerships Joint development of storage and harvesting technology Plants species amenable to thermochemical (e.g., high lignin) and biochemical (e.g., more easily processed lignin) processes	$40.0

TABLE 1.—FISCAL YEAR 2010 BIOMASS/BIOREFINERY SYSTEMS R&D, ENERGY SUPPLY & CONSERVATION, DOE/EERE BIOMASS PROGRAM—Continued

[In millions of dollars]

Program Area	Description of RD&D	Total
Biochemical Conversion Platform R&D.	Next generation biofuels/processes using a range of feedstocks Technologies to reduce costs of pretreatment Advanced biological routes that combine biological methods with pretreatment to reduce enzyme costs dramatically Seed funding for revolutionary new concepts, including small businesses and inventors	60.0
Thermochemical Conversion Platform R&D.	Next generation biofuels and processes that can use a range of feedstocks (pyrolysis, gasification, routes) Technologies to reduce costs of pretreatment Seed funding for revolutionary new concepts, including small businesses and inventors	60.0
Platform Outputs: Integrated Biorefineries.	Direct funding (cost-shared) of biochemical and thermochemical conversion technologies Public awareness and outreach programs National center for infrastructure issues Underwriting of loan guarantees	200.0
Platform Outputs: Bioproducts ..	Co-production of chemicals and materials from biochemical and thermochemical output streams as alternatives to petroleum-derived chemicals	40.0
TOTAL	.....	400.0

There is a growing urgency to diversify our energy supply, develop technologies to utilize indigenous and renewable resources, reduce U.S. reliance on imported oil, and mitigate the impacts of energy on climate and the environment. The benefits will be many—support for economic growth, new American jobs, enhanced environmental quality, and fewer energy-related contributions to climate change. Economic growth is fueled and sustained in large part by the availability of reliable, cost-effective energy supplies. The import of oil and other fuels into the United States is growing steadily, despite increased volatility in supply and prices, especially petroleum and natural gas. This creates an economic burden on industry and consumers alike, and adversely impacts our quality of life. A diversified, sustainable energy supply is critical to meeting our energy challenges and maintaining a healthy economy with a competitive edge in global markets. Biomass can diversify U.S. energy supply in several ways, and biofuels is only one avenue:

—Biomass is the single renewable resource with the ability to directly replace liquid transportation fuels.

—Biomass can be used as a feedstock to supplement the production of chemicals, plastics, and materials now produced from crude oil.

—Gasification of biomass produces a syngas that can be utilized to supplement the natural gas supply, generate electricity, or produce fuels and chemicals.

While biomass will not solve all our energy challenges, it can certainly contribute to the diversity of our supply, and do so in a sustainable way, while minimizing impacts to the environment or climate. The Energy Independence and Security Act (EISA) of 2007 mandates increased use of alternative fuels, with a substantial portion to come from cellulosic biomass. To meet the ambitious EISA goals will require aggressive support for RD&D to move technology forward and reduce technical and economic risk.

OVERALL BERA RECOMMENDATIONS FOR U.S. DOE/EERE BIOMASS RD&D

—*Make Investments to Accelerate Development of Next Generation Biofuels/Processes [Platforms Research and Development—Biochemical and Thermochemical Platform R&D].*—Balance funding so more is allocated toward next generation biofuels and processes that include both biochemical and thermochemical routes, including pyrolysis, gasification, and others, and hybrid routes; emphasize processes that can use a range of biomass types. Include advanced biological routes that better integrate simplified combined biological methods with pretreatment to reduce enzyme costs dramatically as enzymes followed by pretreatment are the major cost items that are susceptible to change.

—*Make Investments to Bring Down the Cost of Biomass Pretreatment [Platforms Research and Development—Biochemical and Thermochemical Platform*

R&D].—Invest substantial funds to bring down the capital and operating costs of pretreatment of cellulosic biomass. This is very important and deserves emphasis as pretreatment is a major factor in the cost of production and also influences the cost of the rest of process. It remains a major hurdle for commercialization of new processes and achieving economic viability of operating biofuels facilities. Developing pretreatment processes that integrate better with the entire process are a critical aspect.

—*Underwrite an Unprecedented Number of Loan Guarantees and Directly Fund a Wide Range of Demonstrations [Utilization of Platform Outputs: Integrated Biorefineries].*—These actions will raise confidence in private investment during uncertain economic times—facilities need to be put in the ground now to make a difference in the mid and long term. Technology demonstrations reduce technical and economic risk and accelerate the potential for private investment. A major concern is that DOE has not approved and disbursed a single loan guarantee under the innovative technology program established by EPAct 2005. However, DOE Secretary Steven Chu indicates he is committed to reform to speed up the loan guarantee process. We suggest that DOE provide ~50 percent of capital for first plants with the rest being private funds to compensate for the risk of first projects while assuring enough private capital is on the line for proper due diligence. This level of guarantee is vital—introducing any new fuel in today's petroleum-heavy market is extremely challenging. The capital costs for petroleum processing are paid off, making it a cash producer, while a biofuels facility must cover not only cash costs but make a high return on capital to compensate for first time risk. This is a heavy lift for first-of-a-kind technology.

—*Set Aside Funding for Demonstration of Revolutionary, but Unproven New Concepts [Platforms Research and Development—Biochemical and Thermochemical Platform R&D].*—Seed funding is needed for revolutionary new ideas that show great promise. We must appeal to the great American sense of innovation and invention to bring ideas to the table that will help solve our energy crises. Small, entrepreneurial inventors and businesses should be part of this equation. This is an important, but riskier proposition, and will take longer to allow for successive funding of ideas and demonstrations.

—*Invest More Funds in Development of Cost-effective New Bioproducts [Utilization of Platform Outputs: Integrated Biorefineries].*—Some chemicals could be produced from biomass, reducing our dependence on oil-derived chemicals and materials that go into a myriad of consumer goods from paint to food to drugs to plastics. Positive economic returns (and improved margins for integrated biorefineries) could be achieved by production of value-added co-products, whether the facility is based on thermochemical or biochemical technology. Current funding for this area is extremely limited. The challenge is that large plants are needed for economies of scale, thereby favoring biofuels. Chemicals can improve returns in a fuels biorefinery and provide scale advantages, but financing construction of projects involving more than one product is risky.

—*Invest in Study of New Non-food, Non-commodity Biomass [Feedstocks Infrastructure].*—This includes algae, selected perennial grasses, wood, and waste (of any kind, industrial, construction, food processing, etc); include an understanding of the viability of these resources (yields, production issues, chemistry, etc) for producing a wide range of fuels (analogs for gasoline, diesel, jet fuel, marine fuel, etc). This should include developing plants species that are more amenable to thermochemical (e.g., high lignin) and biochemical (e.g., low lignin, more easily processed lignin) processing.

—*Invest Significant Resources on Outreach to Increase Public Awareness [Utilization of Platform Outputs].*—The importance of public opinion cannot be overstated. Increasing awareness and understanding of biofuels and their impacts on our energy situation is critical. This includes understanding the positive environmental impacts, and dispelling of misperceptions—we need to get the truth out there, good and bad—and enable consumers to make good choices. Funding should include incentives to States to get the word out and educate the public—and make this information available where people fuel up—at local filling stations and grocery stores, etc.

—*Jointly Fund (With USDA, DOT, EPA) a National Center to Address Infrastructure Issues [Utilization of Platform Outputs].*—A national center for centralized information and technology exchange is needed, covering all areas of infrastructure from storage and transport of feedstocks to blending, storage and distribution of fuels to consumers. This center would incorporate a public-private partnership model to encourage investment in infrastructure. Infrastructure has not received much attention, but could severely impede reaching EISA RFS goals.

PREPARED STATEMENT OF THE STATE TEACHERS' RETIREMENT SYSTEM, STATE OF CALIFORNIA

Department of Energy—Elk Hills School Lands Fund: $9.7 million for fiscal year 2010 installment of Elk Hills compensation.

Congress should appropriate the funds necessary to fulfill the Federal Government's settlement obligation to provide compensation for the State of California's interest in the Elk Hills Naval Petroleum Reserve.

SUMMARY

Acting pursuant to congressional mandate, and in order to maximize the revenues for the Federal taxpayer from the sale of the Elk Hills Naval Petroleum Reserve by removing the cloud of the State of California's claims, the Federal Government reached a settlement with the State in advance of the sale. The State waived its rights to the Reserve in exchange for fair compensation in installments stretched out over an extended period of time. The State respectfully requests an appropriation of at least $9.7 million in the subcommittee's bill for fiscal year 2010, in order to meet the Federal Government's obligations to the State under the settlement agreement.

BACKGROUND

Upon admission to the Union, States beginning with Ohio and those westward were granted by Congress certain sections of public land located within the State's borders. This was done to compensate these States having large amounts of public lands within their borders for revenues lost from the inability to tax public lands as well as to support public education. Two of the tracts of State school lands granted by Congress to California at the time of its admission to the Union were located in what later became the Elk Hills Naval Petroleum Reserve.

The State of California applies the revenues from its State school lands to assist retired teachers whose pensions have been most seriously eroded by inflation. California teachers are ineligible for Social Security and often must rely on this State pension as the principal source of retirement income. Typically the retirees receiving these State school lands revenues are single women more than 75 years old whose relatively modest pensions have lost as much as half or more of their original value to inflation.

STATE'S CLAIMS SETTLED, AS CONGRESS HAD DIRECTED

In the National Defense Authorization Act for Fiscal Year 1996 (Public Law 104–106) that mandated the sale of the Elk Hills Reserve to private industry, Congress reserved 9 percent of the net sales proceeds in an escrow fund to provide compensation to California for its claims to the State school lands located in the Reserve.

In addition, in the act Congress directed the Secretary of Energy on behalf of the Federal Government to "offer to settle all claims of the State of California . . . in order to provide proper compensation for the State's claims." (Public Law 104–106, § 3415). The Secretary was required by Congress to "base the amount of the offered settlement payment from the contingent fund on the fair value for the State's claims, including the mineral estate, not to exceed the amount reserved in the contingent fund." (Id.)

Over the year that followed enactment of the Defense Authorization Act mandating the sale of Elk Hills, the Federal Government and the State engaged in vigorous and extended negotiations over a possible settlement. Finally, on October 10, 1996 a settlement was reached, and a written Settlement Agreement was entered into between the United States and the State, signed by the Secretary of Energy and the Governor of California, under which the State would receive 9 percent of the sales proceeds in annual installments over an extended period.

The Settlement Agreement is fair to both sides, providing proper compensation to the State and its teachers for their State school lands and enabling the Federal Government to maximize the sales revenues realized for the Federal taxpayer by removing the threat of the State's claims in advance of the sale.

FEDERAL REVENUES MAXIMIZED BY REMOVING CLOUD OF STATE'S CLAIM IN ADVANCE OF THE SALE

The State entered into a binding waiver of rights against the purchaser in advance of the bidding for Elk Hills by private purchasers, thereby removing the cloud over title being offered to the purchaser, prohibiting the State from enjoining or otherwise interfering with the sale, and removing the purchaser's exposure to treble damages for conversion under State law. In addition, the State waived equitable

claims to revenues from production for periods prior to the sale. The Reserve thereafter was sold for a winning bid of $3.53 billion in cash, a sales price that substantially exceeded earlier estimates.

CONGRESS SHOULD APPROPRIATE $9.7 MILLION FOR THE FISCAL YEAR 2010 INSTALLMENT OF ELK HILLS COMPENSATION

The State's 9 percent share of the adjusted Elk Hills sales price of $3.53 billion is $317.70 million. To date, Congress has appropriated seven installments of $36 million and one installment of $48 million that was reduced to $47.52 million by the 1 percent across-the-board rescission under the fiscal year 2006 Defense Appropriations Act, for total appropriations to date of $299.52 million of Elk Hills compensation owed to the State. Accordingly, the Elk Hills School Lands Fund should have a positive balance of at least $18.18 million.

We understand that Department of Energy personnel under the Bush administration had proffered four purported grounds for suspending further payments of Elk Hills compensation to the State. Each of these is a "red herring".

Red Herring No. 1. Finalization of respective equity shares of Federal Government and ChevronTexaco as selling co-owners of Elk Hills oil field still not completed.—The Bush administration's fiscal year 2009 budget request stated that "the timing and levels of any future budget request [for Elk Hills compensation] are dependent on the schedule and results of the equity finalization process" between the Federal Government and ChevronTexaco to determine the relative production over the years from their respective tracts in the Elk Hills field. (Fiscal Year 2009 Budget Appendix, at p. 403). But DOE already has held back $67 million, including $6.03 million from the State's share, to protect the Federal Government's interests in a "worst case scenario" for this equity process. The State has agreed to a "hold-back" of that amount to protect the Federal Government's interest. This reduces the available balance in the Elk Hills School Lands Fund to $12.15 million. In addition, DOE's fiscal year 2009 congressional budget request detail stated that the equity determination is in its final stages: "Of the four applicable zones [in Elk Hills], the Dry Gas Zone and Carneros Zone are finalized. The Stevens Zone [the largest in Elk Hills] is expected to be completed in 2008. A final recommendation for the Shallow Zone is pending." (p. 142). Accordingly, remaining uncertainty in the equity process thus provides no basis for withholding further payment of the State's Elk Hills compensation.

Red Herring No. 2. There is no money left in the Elk Hills School Lands Fund right now.—The Bush administration's fiscal year 2009 budget request stated: "Under the Act [that mandated the sale of Elk Hills], 9 percent of the net proceeds were reserved in a contingent fund in the Treasury for payment to the States. . . . Under the settlement agreement, $300 million has been paid to the State of California." (Fiscal Year 2009 Budget Appendix, at p. 403). The fiscal year 1999 budget request at the time of the sale notes that $324 million was deposited into the Elk Hills School Lands Fund. (Fiscal Year 1999 Budget Appendix, at pp. 378–9). A post-sale adjustment to the Elk Hills sales price reduced this amount to $317.7 million. Accordingly, after deducting the $300 million in payments to the State to date and the $6 million hold-back to protect the Federal Government's interests in the "worst case" scenario for the equity process, the Elk Hills Fund has ample funds available for appropriation of a further payment of compensation to the State.

Red Herring No. 3. No payment can be made to the State because of pending litigation between ChevronTexaco and DOE.—DOE has pointed to pending litigation brought by ChevronTexaco against DOE in the U.S. Court of Federal Claims (Docket No. 04–1365C) as a reason to suspend further payments to the State. This litigation alleges DOE personnel committed misconduct in the equity finalization process by having improper ex parte contacts and having the same DOE staff serve as both advocate for DOE's position and advisor preparing the decision documents for the decisionmaker. However, the California State Attorney General has analyzed this litigation and advised that this litigation is a claim for money damages for DOE staff misconduct that has no effect on the Federal Government's equity share, and so there is no effect on the State's share of compensation. Indeed, under the governing agreement between DOE and Chevron, Chevron had waived any right to contest the final equity determination in court. Hence this litigation provides no basis for withholding the rest of the State's compensation.

Red Herring No. 4. No payment can be made to the State because the State's share must be reduced by the equity finalization costs and environmental remediation costs and the final amount of such costs is not yet known.—The State's share of compensation is properly reduced by the "direct costs of sale" as required by Congress. Since

the sale took place over a decade ago, those costs are fixed and known. The State has agreed to bear its share of these sales expenses. However, DOE is seeking to charge against the State's share two additional categories of costs—costs of determining the equity ownership and environmental remediation—that constitute ongoing costs of operating the oil field, not sales expenses. The California State Attorney General advises that these do not properly constitute sales expenses chargeable against the State's share.

More specifically, the Settlement Agreement between the Federal Government and the State provides that the Federal Government shall pay the State "9 percent of the proceeds from the sale of the Federal Elk Hills Interests that remain after deducting from the sales proceeds the costs incurred to conduct such sale." This reflects the congressional direction that, "In exchange for relinquishing its claim, the State will receive 7 [9 in the final legislation] percent of the gross sales proceeds from the sale of the Reserve that remain after the direct expenses of the sale are taken into account." (House Rept. No. 104–131, Defense Authorization Act for fiscal year 1996, Public Law 104–106).

The State has agreed that the $27.13 million incurred for appraisals, accounting expenses, reserves report, and brokers' commission are appropriate sales expenses. Accordingly, the State's 9 percent share of these proper sales expenses reduces the available balance of the Elk Hills School Lands Fund by $2.44 million to $9.7 million.

Costs of conducting the equity adjustment are properly viewed as ongoing costs incurred due to the joint operation of the Elk Hills oil field by the Federal Government and ChevronTexaco, since the equity adjustment already was required under their joint operating agreement and related to pre-sale production revenues. Similarly, costs of environmental remediation of the Elk Hills field was a cost attributable to the prior operation of the field, which created any environmental problems that exist. The ongoing operational nature of this cost is underscored by the fact that the Federal Government is currently engaged in the phased environmental remediation of a Naval Petroleum Reserve that it is not selling—NPR–3 (Teapot Dome), as evidenced by the fiscal year 2009 budget request.

CONCLUSION

Therefore, of the current Elk Hills School Lands Fund balance of $18.18 million, taking into account the "hold-back" for worst case scenario under equity finalization and deducting the appropriate direct costs of conducting the sale, the State respectfully requests the appropriation of at least $9.7 million for Elk Hills compensation in the subcommittee's bill for the fiscal year 2010 installment of compensation, in order to meet the Federal Government's obligations to the State under the Settlement Agreement.

PREPARED STATEMENT OF INTEGRATED BUILDING AND CONSTRUCTION SOLUTIONS (IBACOS), INC.

IBACOS (Integrated Building and Construction Solutions) urges the Subcommittee on Energy and Water Development to provide $46 million for the Building America Program at the Department of Energy's (DOE) Office of Building Technologies in fiscal year 2010 Appropriations under the Office of Building Technologies, Residential Building Integration, Energy Efficiency and Renewable Energy. We further urge that the following language is included to ensure that the competitively selected Building America teams are funded at a percentage comparable to their historic funding: Of these funds, $35 million shall be provided for the research activities of the competitively selected Building America research teams, the Building America lead research laboratory, and other national laboratories conducting research to achieve Building America's specified energy performance targets.

Residential Buildings currently account for over 20 percent of the primary energy consumed by the United States. Each year, more than 1 million new homes are constructed and over a million are remodeled. Significant energy savings can be achieved at minimal increases in construction costs provided that a long term and consistent commitment is made to work in partnership with the housing industry. DOE's Building America Program has developed an industry-driven research approach that can reduce the average energy use in new housing by 50 percent by 2015, providing significant benefits to homeowners in terms of reduced utility bills and significant benefits to the U.S. economy by maintaining housing as a major source of jobs and economic growth. If building in significant energy savings isn't done now, the Nation risks using an extravagant amount of energy in the future.

In order to reduce reliance on foreign energy supplies and to support the stabilization of greenhouse gas emissions, we must invest appropriately in research in the areas of technology, systems integration, and builder processes to upgrade the performance of our housing stock; otherwise, we are mortgaging our future.

Research, development, and outreach activities performed by the competitively selected industry Teams in the Building America Program are the key element in DOE's strategy to reduce energy consumption in residential buildings. The Teams' activities focus on increasing the performance of new and existing homes by developing advanced energy systems that can be implemented on a production basis, while meeting consumer and building performance requirements.

While the Teams have been working on improving efficiency in housing since 1992, with successes being embodied in EPA's Energy Star Home program and DOE's Builders Challenge, they are now focused on the more difficult goal of creating strategies to achieve Zero Energy Homes (ZEH)—homes that produce as much energy as they use on an annual basis.

A NEW FRONTIER IN RESEARCH—ZERO ENERGY HOMES

The research needed to develop systems and strategies to achieve the long term goal of ZEH is not simply applying lessons learned; rather, fundamental research is still required. This R&D, performed by the Building America Teams, is truly high-risk, high-payoff research.

The research required to meet the goal of ZEH is costly and high risk:

—Significant basic research is required to develop and integrate new technologies into homes before they are proven effective enough to be applied in the field.
—This research is costly and risky, and not going to be undertaken by the industry alone.
—The life cycle of this research is significantly longer than that of comparable industries.
—The homebuilding industry is extremely fragmented, with homebuilders having little ability to drive research, and a lower than average financial commitment to investing in research.
—Mechanisms do not currently exist within the homebuilding industry to integrate new technologies and strategies effectively.

The research required to meet the goal of ZEH is also high-payoff for the following reasons:

—Once constructed, homes have a long lifespan, providing the opportunity for a durable long term reduction in energy use.
—Effective strategies to reduce energy use will positively impact consumers, as well as the Nation's energy demand.
—Successful research into integration strategies will allow new, high-risk technologies to be adopted more quickly and effectively.

BUILDING AMERICA COMPETITIVE TEAMS—RESEARCH AND IMPLEMENTATION IN THE REAL WORLD

The work of the Teams allows industry leadership to drive cost effective solutions that move us towards Zero Energy Homes. Building America partners have shown that homes with improved efficiency levels can have equal or lower purchase prices than conventional homes, in addition to much lower energy bills and operating costs, and increased building durability as well as occupant safety, health, and comfort. In addition to performing the fundamental research needed to advance the energy efficiency of our Nation's housing stock, the Building America Teams provide recommendations to a broad range of residential deployment partners including the EPA's Energy Star Homes Program, HUD's Partnership for Advancing Technologies in Housing Program, DOE's Builders Challenge, and many industry associations and universities. Furthermore, the Teams are perhaps the best resource for DOE to educate the builder community on technology and integration breakthroughs. This education has been, in part, demonstrated through successful projects, where high efficiency housing is being built and bought, such as Summerset at Frick Park (Pittsburgh, Pennsylvania); Noisette (North Charleston, South Carolina); Civano (Tucson, Arizona); The Landover Group (Virginia and Maryland); Forest Glen development in (Carol Stream, Illinois); Hunters Point Shipyard (San Francisco, CA); Stapleton (Denver, Colorado); Habitat for Humanity (Georgia, Colorado, Tennessee, Florida, Michigan, Texas and throughout the United States); Summerfield (San Antonio, Texas); Sun City (Las Vegas, Nevada); and others throughout the Nation as documented on www.buildingamerica.gov. The more than 500 private sector partners who work with the Teams are experts in home construction, building products and supply, architecture, engineering, community planning, and mortgage lending.

All construction material and labor costs for homes and communities constructed by Building America Teams are provided by DOE's private sector partners.

DOE's Role in the Residential Buildings Research Partnerships

Catalyzing research in residential construction necessary to increase the energy performance, and bringing together industry partners to leverage research dollars and expertise.

Matching advanced product research programs to the system integration efforts of the Building America Teams to ensure realistic approaches to increasing energy performance.

Reducing risk and increasing reliability of emerging technologies.

Providing scientific expertise through the involvement of the National Renewable Energy Laboratory (NREL) and other national laboratories.

Sharing critical information about research with several thousand associated building industry professionals and leveraging information through EPA, HUD, and private sector energy efficiency programs.

Program Goals

Reduce energy use in America's housing stock by 50 percent by 2015 and provide ZEH by the year 2025, integrating renewable energy when and where practical.

Research and develop the systems and strategies necessary to allow our Nation to deliver high performance houses in order to increase our national energy security.

Program Status

Through the competitively selected Teams, Building America works closely with America's lead builders, who produce approximately 50 percent of the Nation's new housing stock. Additionally, the program has been tasked with providing the research and development basis for the President's Partnership for Housing Energy Efficiency (PHEE). More than 30,000 homes have been constructed in 34 States. Increased funding is needed to address new program requirements including increased energy efficiency goals, increased need for technical support of lead builders, contractors, and suppliers for effective participation in the program, expansion of applications in existing building stock, expansion to multi-family housing stock, and design for integration of on-site and renewable power. Specifically, the incorporation of the ZEH goals into Building America research and development activities must be done in an integrated fashion via the existing competitively selected Building America teams, which have begun to include renewable energy technologies and on-site energy into some projects. The stated DOE goals of the program are unreachable without significant Team funding.

Recommendation for Fiscal Year 2010 Funding

Provide $46 million, for the Building America Program at the DOE's Office of Building Technologies in fiscal year 2010 appropriations (under the Office of Building Technologies, Residential Building Integration). Additionally, include language as follows to ensure that the competitive teams are funded at a percentage comparable to their historic funding:

"Of these funds, $35 million shall be provided for the research activities of the competitively selected Building America research teams, the Building America lead research laboratory, and other national laboratories conducting research to achieve Building America's specified energy performance targets".

PREPARED STATEMENT OF GE ENERGY

The following testimony is submitted on behalf of GE Energy (GE) for the consideration of the subcommittee during its deliberations regarding the fiscal year 2010 budget requests for the Department of Energy (DOE). Among GE's key recommendations are:

—*Renewable Energy*.—GE supports the fiscal year 2010 increases in Wind and Solar.

—*Fossil Energy*.—(1) Increase Coal funding by $75 million for off-the-shelf carbon capture plant designs to accelerate the near-term deployment of large-scale carbon capture and sequestration; (2) provide $45 million for Advanced Turbines in fiscal year 2010 support of advanced IGCC with carbon capture; (3) restore funding for water-related R&D activities.

—*Nuclear Energy*.—Additional funding is needed for loan guarantees, to support new nuclear plant development.

RENEWABLE ENERGY

DOE has played a critical role in the development of renewable energy technologies over the past three decades. The fiscal year 2010 budget request proposes $75 million for Wind and $320 million for Solar, representing 36 percent and 83 percent increases, respectively, from fiscal year 2009 appropriations. GE welcomes these funding increases as critical investments in the transformation of the Nation's energy infrastructure. We continue to believe that these appropriations must be sustained and increased over time. The American Wind Energy Association has recommended that annual Wind appropriations of $200 million are needed to meet the 20 percent wind by 2030 scenario. The fiscal year 2010 budget request is an important step in this direction.

DOE proposes to utilize the $20 million increase in Wind program funds to accelerate offshore wind technology development and improve the reliability and cost performance of land-based wind turbines; improve grid integration; and support efforts related to workforce development, wind-radar mitigation efforts, education, and community applications. GE has recommended that the DOE focus its Wind program on performance, reliability and grid integration, particularly in areas such as blade manufacturing; drivetrain technology; and grid operator solutions such as managing variability, ramp rate control, frequency regulation, and fault response. We support these new funds as critical investments toward achieving the 20 percent wind scenario while building U.S. technology and supporting increased U.S. jobs.

The proposed $145 million increase in Solar program funds includes substantial increases in Photovoltaic and Concentrating Solar Power R&D, as well as additional investments in systems integration, market transformation, and PV manufacturing. GE has recommended that the DOE focus its Solar program on improving PV module cost, reliability, and efficiency performance, particularly with regard to thin film PV technology; and on advanced controls and diagnostics to support the grid integration of solar assets. We support these funding increases as essential for realizing the DOE's goal of deploying 5–10 gigawatts of solar by 2015.

FOSSIL ENERGY

Commercial Scale CCS Demonstrations.—Demonstration of CCS at commercial scale is urgently needed to demonstrate to the public that geologic sequestration of CO_2 is a safe and environmentally acceptable solution for low carbon coal power. The continued use of our Nation's abundant coal resources requires proving that integration of power plants and sequestration resources can provide competitive and reliable electrical generation.

CCS Deployment.—GE recommends that DOE focus support on the near-term deployment of large-scale, utility CCS. In its fiscal year 2010 budget request, the DOE described the $3.4 billion provided through the American Recovery and Reinvestment Act ("ARRA") as the foundation of its clean coal program. However, of the $3.4 billion, the only certain funding that will be made available for utility CCS projects is the $800 million that will be provided for Round 3 of the Clean Coal Power Initiative. Much more is needed. GE is a member of the US Climate Action Partnership (USCAP), which recommended in its "Blueprint for Legislative Action" (January 2009) that a Federal CCS program establish at least five (5) gigawatts (GW) of CCS-enabled coal fueled facilities. Such a level of CCS deployment is needed to support implementation of coal performance standards that are key to achieving national greenhouse gas reduction goals. Even if CCPI Round 3 funds can be combined with other funding mechanisms for utility projects (e.g. EPAct 2005 section 48A Investment Tax Credits, loan guarantees and section 48Q CO_2 production credits), funding falls well short of that necessary to offset the additional capital and several years of additional operating costs of 5GW of utility CCS. While funding sufficient for 5GWs is not likely without new legislation, DOE can provide incentives to help remove barriers and accelerate CCS deployment.

Therefore, GE recommends that DOE fiscal year 2010 Coal funding be increased by $75 million (to $478.9 million) to fund the development of off-the-shelf Front-End Engineering Designs (FEEDs) for IGCC Greenfield plants optimized for CCS for Bituminous and Western coals. IGCC is ready for carbon capture now, but only needs the detailed engineering to support commercial proposals. Funding of FEEDs should accelerate development of commercial CCS projects and reduce the difficulty of obtaining approval from State regulators for recovery of project development costs. The development of these FEEDs will also deliver immediate and foster long-term job creation.

Geologic Sequestration.—Another significant barrier to the deployment of first-mover CCS projects is the uncertainty associated with availability of geologic storage. Comprehensive and expensive geologic characterization is necessary to ensure

that a plant will have a sequestration resource with sufficient capacity for a 30–40 year life. As with up-front engineering costs, public utility commissions are reluctant to approve cost recovery of studies relating to the availability of geologic storage, although they are necessary to assure project viability. Therefore, GE recommends that DOE fiscal year 2010 Carbon Sequestration funding be increased by $100 million (to $279.9 million) for co-funding of detailed geologic characterization to more fully validate storage sites for commercial CCS projects that are starting development.

FutureGen.—GE has three recommendations for the structure of the FutureGen program that will significantly improve its value in moving CCS forward: First, make the successful demonstration of integrated carbon capture and sequestration the primary focus of FutureGen. Reliable CO_2 production is essential to a successful sequestration demonstration. Second, FutureGen must demonstrate commercially relevant coal power generation with CCS. Carbon capture using gasification is widely performed economically and reliably in the commercial chemical process industry. The FutureGen project should incorporate technology and equipment in a design configuration that is representative of commercial practice in order to provide critical experience on integration of capture and sequestration at a commercial scale. Third, and as is essential to achieving the two foregoing goals, we recommend that FutureGen be contracted on a commercial and competitive basis for the design and construction of the plant and its sequestration facility. FutureGen can draw from existing experience and investment and avoid duplication of engineering costs. Carbon capture using gasification is widely performed economically and reliably in the commercial chemical process industry. GE has invested substantially in the development of its standard 630MW IGCC plant and an ancillary Carbon Island™ for carbon capture. A commercial contract with its guarantees and warrantees will provide the performance, schedule and cost certainty with reliable CO_2 supply for sequestration that FutureGen needs to achieve its primary goal of successful sequestration with reliable power generation.

Advanced Turbines.—GE recommends that annual funding of $45 million be provided in fiscal year 2010 to maintain needed progress in the Advanced Turbines. The Advanced Turbines program represents the Department's high priority research effort focusing on the development of enabling technologies for high efficiency hydrogen turbines for advanced gasification systems with carbon capture. It is on target to enable future advanced IGCC coal fueled power plants to offset much of the performance penalties associated with carbon capture while also achieving very low NO_X emissions. In addition to benefiting future coal IGCC applications, the technologies that come out of this program will also benefit existing and future natural gas combined cycle power plants. Improved efficiency of these applications will mean reduced emissions and reduced CO_2 for the same power output. This improvement would be by either implementing the technology on new advanced products or retrofitting the technology into existing gas turbines. A one point improvement in efficiency on GE's existing F-class fleet would result in 4.4 million tons less of CO_2 emissions per year.

Water.—Large amounts of water are needed to produce or extract energy, and large amounts of energy are needed to treat or transport water. This co-dependency is called the Water/Energy Nexus. In order for the DOE to achieve its aggressive goals of reducing freshwater withdrawals and consumption 50 percent by 2015 and 70 percent by 2020, water related R&D funding is needed. GE recommends water-related funding under Innovations for Existing Plants be restored and significantly increased above the $12 million allocated under the fiscal year 2009 budget. Funding for R&D and demo projects including: Non-traditional Waters for Cooling Make-up, Water Reuse and Recovery, Advanced Cooling Technologies, and Water Treatment and Detection will help to ensure DOE's goals are met. GE also recommends $40 million be allocated to innovative water reuse technologies and demonstration projects in the production of oil and natural gas to further reduce environmental impacts and operational costs of upstream energy processes. Support is also needed to advance reuse/treatment technologies for the conversion of impaired wastewater streams into sources of renewable water in areas of water scarcity, reducing the need to use energy to transport water over long distances and to support electricity generation.

NUCLEAR ENERGY

Nuclear power plant operation provides baseload energy generation with no greenhouse gas emissions. Each operating nuclear plant avoids the production of 8 million tons of CO_2 annually and in total the U.S. fleet of 104 reactors avoids nearly

1 billion tons of CO_2 annually. GE supports the use of nuclear energy as part of a diverse portfolio of power generation technologies and fuels.

Loan Guarantees and New Plant Development.—Federal investment has been instrumental in the licensing and partial development of standardized designs for advanced light water reactors and has helped form the foundation for a nuclear renaissance through programs such as the NP2010 program. In addition to the continuation of existing programs, more actions are required to ensure successful commercialization of new nuclear technologies. The Energy Policy Act of 2005 authorized loan guarantees to support advanced nuclear energy facilities. Due to the capital-intensive nature of nuclear plant deployment, these loan guarantees are key to the ability of utilities to attract financing and move forward with this clean, carbon-free technology. The current credit crisis in the United States makes it increasingly difficult to finance these and other capital-intensive projects. The original $18.5 billion in available loan guarantees is sufficient to support 2 to 3 new nuclear projects. DOE has already received applications for significantly more than that number of projects and to have meaningful progress on both climate change and energy security certainly more are needed. Based on this level of industry demand, the benefit to be derived, and the fact that these loan guarantees are self-funded and have no budget impact, GE supports an additional $50 billion in authorized loan guarantees through the DOE's Loan Guarantee Program for nuclear power facility projects.

Energy Parks—Research and Development for Commercial Deployment.—GE believes that a strong private public partnership should be formed to support the Energy Park concept outlined as part of the Office of Environmental Management's efforts for footprint reduction of the legacy DOE sites. GE believes that the installment of advanced light water reactors and research and development to support advanced recycling at the existing DOE sites in the Energy Park concept is a logical application for these locations. These sites are well understood from a permitting aspect and their existing workforce has skills that would be directly transferrable to commercial nuclear power applications. The Environmental Management office has received funding under ARRA. GE supports near term actions as part of this program including the community outreach, permitting, siting, design, and license application development for new nuclear reactors.

Non-proliferation and Waste Minimization.—GE supports used nuclear fuel recycling as a means to close the fuel cycle, to minimize nuclear proliferation risks and provide an alternative to Yucca Mountain. As the Nation explores solutions to nuclear waste issues, GE supports and seeks an opportunity to participate in the soon to be formed Blue Ribbon Waste Panel. The GE team has decades of experience in nuclear methods and designs based on U.S. technology that are available to close the nuclear fuel cycle. It is in the best interests of national security that U.S. technology be used to close the fuel cycle in a manner that does not result in separated plutonium.

ARPA–E; LOAN GUARANTEES

GE supports the DOE's budget request for $10 million in program direction to support the new ARPA–E program ($400 million appropriated through the ARRA) to advance disruptive, high-risk and high-potential technologies.

GE also supports $43 million ($6 billion appropriated through the ARRA) for the temporary Loan Guarantee Programs (LGP). Rapid implementation of the LGP is central to the recovery of the renewable energy industry, and these program operation and personnel funds deserve full and immediate support.

PREPARED STATEMENT OF THE ALLIANCE FOR MATERIALS MANUFACTURING EXCELLENCE (AMMEX)

The Alliance for Materials Manufacturing Excellence (AMMEX) welcomes this opportunity to provide its input to the subcommittee on the proposed budget for fiscal year 2010 for the Industrial Technologies Program (ITP) at the Department of Energy. AMMEX is a coalition of organizations representing the basic materials manufacturing sector (aluminum, chemicals, forest products, glass, metal casting, steel) in the U.S. economy along with key stakeholders in materials manufacturing, such as the Northeast Midwest Institute, the National Association of State Energy Officials and the American Council for an Energy-Efficient Economy.

We are writing to urge Congress to increase the funding to the ITP to the level of $150 million and to restore the structure of the program to one that emphasizes new process development in individual materials industries, including the six historically funded by this effort, as opposed to the currently proposed cross-cutting research approach. These changes would bring the program into alignment with Con-

gress' intent in both section 452 (Energy Intensive Industries Program) of the Energy Independence and Security Act of 2007, which was signed into law on December 19, 2007, as well as the Energy Efficiency and Renewable Energy Act of 2007, which passed the House unanimously on October 22, 2007.

The member organizations of AMMEX have been partners with ITP since the inception of the program's cooperative, industry-specific research activities. These research activities are a true public-private partnership. DOE and materials manufacturers jointly fund cutting-edge research that addresses the needs of the Nation and materials manufacturers. All projects have the shared goals of reducing energy consumption, reducing environmental impact, and increasing the competitive advantage of U.S. materials manufacturers.

Reducing our need for oil imports, developing an economy that is sustainable in energy supply, and reducing our environmental impact are important national policy goals. There is no more effective way to achieve these goals than through energy efficiency. The lowest cost, cleanest, and most reliable energy is the energy that is not consumed because of improved efficiency. By reducing the energy intensity of materials manufacturing and accelerating the delivery of new technology, ITP has helped make U.S. materials manufacturers more competitive in global markets, preserving and creating good-paying jobs in the process. The program is unique because it selects only projects with "dual benefits": a public benefit such as reduced emissions or energy use justifies the Federal funding, and an industry benefit such as a more efficient process or improved product justifies the industrial funding.

U.S. materials manufacturing continues to face challenges resulting from increased cost and decreased availability of traditional energy supply resources. These challenges have stimulated innovation in the materials manufacturing sector in order to create significant energy improvements and to diversify energy supplies. While the innovations of the past have brought materials manufacturing a long way, the sector cannot go further without new innovations. To this end, the materials manufacturing processes must be transformed; new processes and new innovations must be developed which will consume far less energy and that will be able to utilize diverse forms of energy.

To accomplish these goals, the Federal Government and industry will need to reembark upon a joint effort to broaden and accelerate inherently high-risk research, development, and deployment of new materials manufacturing processes that utilize diverse energy sources. This effort will also allow the materials manufacturing sector to lessen dependence on natural gas, oil, and conventional electricity sources, thus benefiting consumers through contribution to a stable energy market.

Dramatic increases in industrial energy prices and growing global competition threaten the vitality and the future of U.S. materials manufacturing. Unless this trend is reversed, American manufacturing jobs in these key industries will increasingly move overseas. Manufacturers have responded to such challenges in the past by applying the power of innovation to create new products and processes that sustain the foundation of the U.S. economy.

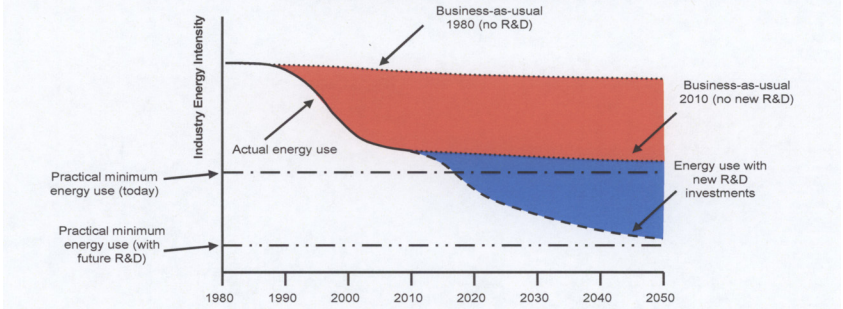
Our request for funding in fiscal year 2010 for ITP entails two parts:

—An increase to a total program level of $150 million, as authorized in the Energy Independence and Security Act of 2007.

—A re-structuring of the program so as to return to the structure that was so successful from 1990 to 2003—a balanced portfolio of research from the point of view of research impact; i.e., a greater focus on energy intensive industrial processes. For the 2010 budget, we request that the Industries of the Future industry-specific R&D be increased to $30 million. We further recommend that in future budgets at least 50 percent of the funding go to research into new process development where the energy savings potential in industry is highest.

Figure 1 below is representative of the gains in energy efficiency made by materials manufacturers since 1990, when they began partnering with ITP.

Figure 1: Stylized Graph of Energy Intensity Reductions Achieved by Materials Manufacturers Due To Partnership with ITP Since 1990



This chart shows that materials manufacturing processes have become increasingly efficient from 1990 to 2000, and that new process developments are required to continue making similar gains in the future.

Between 1990 and 1996 the program consisted largely of "industry-specific" funding and averaged $100 million annually. There were some "cross-cutting" projects in this time, but they were a relatively small percentage of the total. As the program grew, spending still remained focused on industry-specific projects. Figure 2 below shows the funding history of the DOE ITP program since 1998.

Figure 2: History of Funding for DOE Industrial Technologies Program

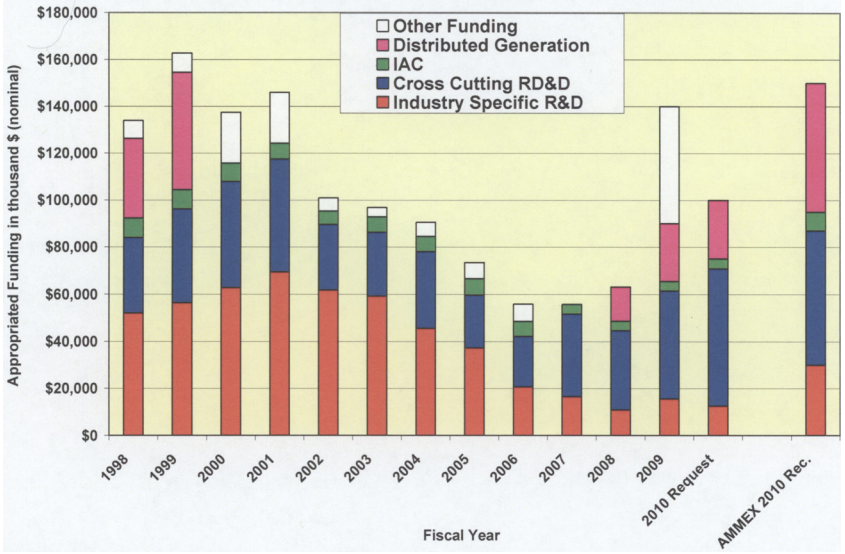


Figure Notes:

—IAC and Distributed Generation funding are subsets of "Cross Cutting RD&D"

—"Other Funding" includes management and technical planning and support, as well as other funding not listed under "Industry-Specific" or "Cross Cutting" in budget documents. The $50 million "Other Funding" in 2009 is for information and communications technology efficiency.

—2010 AMMEX recommendation includes: $30 million for Industry Specific R&D, $65 million for Cross Cutting RD&D (including $8 million for the IAC program), and $55 million for Distributed Generation.

By 2004, ITP was not only the target of drastic cuts, but remaining funds were rebalanced to favor cross-cutting projects over industry-specific projects as well. While Figure 1 shows that new process developments are needed to improve the en-

ergy efficiency of materials manufacturing industries, Figure 2 shows that these necessary funding levels are not being met. A recent peer review of the program indicated that the technology pipeline for R&D projects is now running dry. It is imperative to fund these programs now, as it takes time to refill the pipeline and achieve additional energy savings.

AMMEX members that DOE has recently supported have identified their top new process development concepts, not listed in order of priority, which would be pursued at the funding levels and structure defined above:

Aluminum

—Improved energy-efficient burners and furnaces for aluminum melting.
—Improved energy efficiency and recovery rates for recycling technologies.

Chemicals

—Development of alternative feedstocks for the chemical industry to reduce dependence on petroleum and natural gas derived feedstocks.
—Nano-manufacturing scale-up methodologies for key unit operations: synthesis, separation, purification, stabilization, and assembly.
—Development of low-energy, low-capital membrane or hybrid separations technology.

Glass

—Submerged Combustion Melter.
—Waste Heat Recovery and Use as Electrical or Chemical Energy.
—Increase glass strength (towards theoretical) to reduce weight and energy per unit made.

Forest Products

—Energy-efficient pulping and papermaking.
—Eliminating use of fossil fuels in manufacturing.
—Significantly reducing fresh water consumption in pulp and paper mills.

Metal Casting

—Net Shaped Manufacturing through Advanced Lost Foam Casting technologies.
—Smart coatings and advanced surface treatments for energy efficient tooling technologies.
—Disruptive approaches for nano-composites for lighter weight cast components.
—High Strength Steels for improved service performance.

Steel

—Ironmaking by Molten Oxide Electrolysis.
—Ironmaking by Flash Smelting using Hydrogen.
—Demonstration of the Paired Straight Hearth Furnace Process.

Other industries, such as cement, would benefit from expanded R&D as well, but have not been engaged with the Department.

The United States also faces serious shortages in the science and engineering workforce that is needed to keep our Nation's competitive edge in world markets through technology innovation and timely application. There is a clear need for a reinvigoration of our commitment to technology education. Advanced R&D projects are often undertaken in conjunction with major American research universities. These projects help to expose students to the kind of research necessary to serve the future energy efficiency needs of industry. Other ITP efforts such as the Industrial Assessment Center program complement this R&D funding by helping to train this future workforce.

Our proposal to the subcommittee is an effort to both rebuild America's materials manufacturing industries and revitalize our science and engineering institutions. It builds a new public-private partnership to support these twin goals, and will ensure that the U.S. materials manufacturing industry will remain vital and competitive through:

—Accelerating technology innovation to ensure the future competitiveness, resource efficiency, and sustainability of our domestic materials manufacturing industry;
—Building the vital intellectual infrastructure in American universities and laboratories that will work in partnership with the materials manufacturing industry; and
—Maintaining a healthy American materials manufacturing base, which is vital to our national security.

On behalf of the AMMEX coalition, we thank you for the opportunity to submit this statement. We look forward to continuing to work with the subcommittee as

you move forward on the fiscal year 2010 Appropriations legislation for the Department of Energy.

PREPARED STATEMENT OF THE AMERICAN SOCIETY FOR MICROBIOLOGY

The American Society for Microbiology (ASM) is pleased to submit the following testimony on the fiscal year 2010 appropriation for the Department of Energy (DOE) science programs. The ASM is the largest single life science organization in the world with more than 43,000 members. The ASM mission is to enhance the science of microbiology, to gain a better understanding of life processes, and to promote the application of this knowledge for improved health and environmental well-being.

The DOE Office of Science funds basic research in support of the DOE's mission of energy security, national security, and environmental restoration. Research supported by the Office of Science encompasses such diverse fields as materials sciences, chemistry, high energy and nuclear physics, plasma science, biology, advanced computation, and environmental studies.

The ASM supports the administration's pledge to substantially increase funding for basic science research and scientific user facilities and urges Congress to fund the DOE office of science at $5.2 billion for fiscal year 2010, an 8 percent increase.

We commend Congress for the substantial and much needed funding for the DOE in the American Recovery and Reinvestment Act of 2009 and the Omnibus Appropriations Act of 2009. The need remains, however, for a steady and reliable increase of fiscal year appropriations to provide real growth for DOE science budgets in future years.

BIOLOGICAL AND ENVIRONMENTAL RESEARCH (BER)

Operating within the DOE Office of Science, the BER division facilitates the growth of a strong science based platform to continue to work with national laboratories, universities and private institutions to harness the capabilities of microbial and plant systems. A fundamental task of the BER is supporting and providing research for the President's National Energy Plan. Research from BER contributes to developing cost-effective, renewable energy, increasing the Nation's energy security, and works to slow or stop increases in atmospheric carbon dioxide among other crucial priorities.

The ASM urges Congress to support an increase for the BER on par with the overall increase in fiscal year 2010 funding for the Office of Science.

Research on microbes contributes advances to critical technologies and processes necessary for addressing the Nation's great energy and environmental challenges in a number of ways:

—*Carbon Sequestration*.—Microbes offer multiple possibilities for enhancing carbon sequestration, a process that can reduce CO_2 accumulation in the atmosphere. These options include enhancing plant growth, some of which may be used for biofuels, and promoting carbon storage belowground. The latter process involves manipulation of microbial communities and activities to help stabilize organic carbon in soils.

—*Environmental Remediation*.—Microbes play major roles in modifying sub-surface environments, where many major pollutants accumulate and are subsequently dispersed. Microbial activities affect the chemical form and movement of many contaminants. The work of various research groups has shown that microbes can be manipulated to directly or indirectly provide potential cost-effective bioremediation strategies for immobilizing contaminants. For instance, two different microbes, Shewanella and Geobacter, transform toxic metals such as uranium from a soluble form that moves in groundwater, to an insoluble form that can then be recovered for decontamination. These and other microbes also decontaminate many other metals, radionuclides and toxic chemicals.

—*Renewable Energy*.—A greater understanding of the process by which crude oil is transformed into methane, or natural gas, opens the door to recovering clean-burning methane directly from deeply buried or in situ oil sands deposits. A recent study demonstrated methane production from anaerobic hydrocarbon degradation; these findings offer the possibility of "feeding" specific hydrocarbons to microbes and rapidly accelerating their conversion into methane. Additional research has shown that hydrogen can be produced from partly degraded oil, and used with CO_2 to form methane. This paves the way for using the microbes to capture this CO_2 as methane, which could then be recycled as fuel in a closed-loop energy system.

Microbial enzymes are also important sources of catalysts for conversion of plant biomass, including cellulose and lignins to biofuels (e.g., ethanol and butanol). Con-

tinued support of basic microbiological research is essential for ensuring that the potential for biomass as a source of renewable, alternative fuels can be realized.

GENOMICS: GTL

The Genomics.—GTL program supports basic research in plant and microbial systems biology and explores microbes and plants at the molecular cellular and community levels. The ASM supports an increase in funding for GTL in fiscal year 2010 to allow it to continue to advance DOE wide missions in environment, climate and energy.

The GTL goal remains to expand insights about fundamental biological processes and a predictive understanding of how living systems operate. This understanding, linked with DNA sequences and widely available, will catalyze the translation of science to new technologies for application in energy and environmental issues.

The GTL works with the DOE Joint Genome Institute (JGI), one of the world's largest and most productive public genome sequencing centers, to map genomes of microbes and fungi that degrade biomass or impact plant productivity. This relationship has created a vital knowledge base within the DOE from which scientists are able to purposefully redesign proteins, biochemical pathways, and even entire plants or microbes to help solve bioenergy challenges.

Three GTL Bioenergy Research Centers were established in 2007, the Bioenergy Science Center, the Great Lakes Bioenergy Research Center, and the JGI. These centers, which are actively working toward making the production of biofuels more efficient, less costly, and commercially viable; results of ongoing studies are changing the way we think about biotechnology, and transforming how we power our Nation. The centers are creating knowledge underlying three grand challenges faced by biology within the DOE mission: (1) development of the next-generation bioenergy crops; (2) discovery and design of enzymes, and microbes with novel biomass degrading capabilities; and (3) discovery and design of microbes that transform fuel production from biomass. Meeting these challenges will benefit all biological research efforts.

Areas of emphasis in Genomics: GTL include:

Bioenergy Production.—A broad range of research has been undertaken to optimize bioenergy production from a variety of renewable sources. Past and ongoing research has made significant progress in a number of areas: understanding the details of plant biomass structures and how they might be manipulated to improve conversion to biofuels; discovery of novel enzymes for improving conversion of biomass to biofuels; understanding the details of plant and microbial metabolism at a level that promotes controlled synthesis of desired end-products.

Environmental Remediation.—Research sponsored by Genomics: GTL has made major progress in understanding the functions and behavior of specific microbes (e.g., Geobacter and Shewanella) and microbial communities that play important roles in strategies for remediating a wide range of environmental problems, including clean-up of toxic wastes and radioactive materials. This work integrates from microbial genomes through the functions of microbes in the environment, and provides a foundation for altering microbial activities for to solve specific problems.

Carbon Cycling.—Microbes play major roles in the transformation of carbon in natural systems. Some of these transformations can promote carbon sequestration, while others produce greenhouse gases. Genomics: GTL research helps understand how complex microbial communities function in nature, and how these communities respond to changes and stresses. This information is not only critical for developing predictions of microbial responses to climate and other environmental changes, but is essential for developing approaches for managing those responses to minimize adverse impacts of change.

The ASM urges Congress to fully support the GTL program with increased funding to JGI. In fiscal year 2009, the President's budget request included $162.7 million in funding for GTL, but significantly cut funding for JGI by $5 million. It is imperative to ensure that funding increases are seen for both of these vital programs in fiscal year 2010.

ENVIRONMENTAL REMEDIATION SCIENCES DIVISION

The Environmental Remediation Sciences Division (ERSD) within BER sponsors and supports fundamental scientific research to understand the complex physical, chemical, and biological properties of contaminated sites in order to develop new solutions for environmental remediation. DOE is responsible for the largest, most complex, and diverse collection of environmental remediation challenges in the Nation. ERSD supports two major activities: (1) the Environmental Remediation Sciences Program (ERSP), which seeks to provide the fundamental scientific knowledge need-

ed to address challenging environmental problems that impede the remediation of contaminated environmental sites; and (2) the Environmental Molecular Sciences Laboratory (EMSL), which is a national scientific user facility that provides integrated experimental and computational resources for discovery and technological innovation in the environmental molecular sciences to support the needs of DOE and the Nation.

DOE's remediation challenges occur in the field where highly interactive natural processes acting over a broad range of scales control the fate and transport of contaminants. The ERSD goal is to help provide the basis for development of innovative remediation measures to support decisionmaking critical to long-term stewardship. Of the 144 sites where DOE has remediation, waste management, or nuclear materials and facility stabilization responsibilities, nearly 100 have soils, sediments, or groundwater contaminated with radionuclides, metals, or organic materials.

The ASM urges Congress to fully support ERSD, which will help support DOE's goal to "provide sufficient scientific understanding such that DOE sites would be able to incorporate physical, chemical and biological processes into decisionmaking for environmental remediation and long-term stewardship."

ENERGY BIOSCIENCES

The ASM supports increased funding for the Energy Biosciences program within the Basic Energy Sciences Division of Chemical Sciences, Geosciences, and Biosciences. The Energy Biosciences (EB) program within the Basic Energy Sciences (BES) division supports fundamental research to promote the development of future energy-related technologies. There is a specific emphasis in research on plant and non-medical microbial energy transduction systems. The EB program provides a fundamental understanding of the complex processes that convert and store energy in living systems and impacts numerous DOE interests, enhanced biofuel production strategies, next generation energy conversion/storage devices, and efficient and environmentally-friendly catalyst development in particular.

In fiscal year 2009, EB was divided into two separate programs:

Photosynthetic Systems.—This program is focused on fundamental research to elucidate the specific mechanisms by which plants and microbes convert solar energy into chemically-stored forms of energy. Results from this new program will create a foundation for the development of enhanced biological and engineered systems to harvest solar energy, thus contributing to the Nation's goal of energy independence.

Physical Biosciences.—This program combines tools and approaches from the physical sciences with the disciplines of molecular biology and biochemistry to create new understandings of the detailed mechanisms for energy storage and use in plants and microbes. Results for this new program will promote the development of improved systems for harvesting energy in multiple forms and enhancing their use for human needs.

WORKFORCE DEVELOPMENT

Scientific research and subsequent discovery is vital for the Nation to remain competitive in the global economy and ensuring support for a well trained workforce of teachers and scientists at all levels, is imperative. The ASM supports increased funding for Workforce Development for Teachers and Scientists within the DOE Office of Science which funds undergraduate research internships, graduate and faculty fellowships, pre-college activities, laboratory equipment programs, and teacher programs.

CONCLUSION

The ASM supports increased funding for the DOE Office of Science in fiscal year 2010, and urges Congress to provide adequate funding for the BER, ERSD, and Genomics: GTL, and the JGI, which are essential to DOE's mission. The DOE Office of Science programs enhance United States competitiveness through fundamental research and advanced scientific breakthroughs that revolutionize the Nation's approach to challenging energy and environment challenges.

The ASM appreciates the opportunity to provide written testimony and would be pleased to assist the subcommittee as it considers the fiscal year 2010 appropriation for the DOE.

PREPARED STATEMENT OF THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

To the Chair and members of the subcommittee, thank you for this opportunity to provide testimony on the importance and need for strong Federal R&D efforts in

the fields of oil and natural gas, coal, and geothermal technologies. These activities reside in the U.S. Department of Energy's fossil energy program (oil, natural gas, coal) and energy efficiency and renewable energy program (geothermal). They are an essential investment in this Nation's energy security.

The American Association of Petroleum Geologists (AAPG) is the world's largest scientific and professional geological association. The purpose of AAPG is to advance the science of geology, foster scientific research, and promote technology. AAPG has nearly 34,000 members around the world, with roughly two-thirds living and working in the United States. These are the professional geoscientists in industry, government, and academia who practice, regulate, and teach the science and process of finding and producing energy resources from the Earth.

AAPG strives to increase public awareness of the crucial role that geosciences, and particularly petroleum geology play in energy security and our society.

Our members have a big job. Fossil fuels supply 87 percent of the world's total energy needs, down only 4 percent in the past quarter century. Transportation represents about 30 percent of end use demand and is dominated by liquid fuels derived from oil. Heating is another 30 percent and dominated by oil and natural gas. Electricity represents the remaining 40 percent with a broadening portfolio of fuel sources. Coal, nuclear, and natural gas currently dominate electricity production, but alternatives like wind are growing rapidly. However, because electricity demand is also growing, alternatives remain a small fraction of total production.

Today's energy debate is often framed as a choice between fossil fuels or alternative (non-fossil) fuels, or between fossil fuels and the environment, but these are red herrings. Sustaining a healthy U.S. and global economy, and thus enabling substantial investment in our environment, requires a stable and continuous supply of fossil fuels while simultaneously developing and expanding alternative and new fuels. This is the bridge to our energy future. We need both, and the process of building this bridge will take 25 to 40 years, perhaps longer. Our Nation's energy policies and investments must reflect this reality.

For example, President Obama's fiscal year 2010 budget includes the rollback of a series of tax provisions currently available to the oil and gas industry, which is dominated today by the U.S. independent producer. It also proposes assessing new fees and taxes on oil and natural gas producers, and repealing the ultra-deepwater and unconventional research programs.

Compounded by a weak economy and limited access to capital, these proposed policies on top of an already heavily taxed industry would have a chilling effect on oil and natural gas drilling, production, and energy investment in this country, cost many jobs, and directly undermine U.S. energy security.

The United States tried this experiment from 1980–1988 with the windfall profits tax which, compounded with the drop in price of oil in the 1980's, had a disastrous effect on drilling, industry employment and U.S. energy production for nearly two decades to follow. We face a very similar price situation now and cannot afford to repeat an experiment that has already been tried and failed.

These either/or policy choices fail to recognize that as we bridge to an alternative energy future, we must preserve and even strengthen the fossil energy foundation underlying it. Research and development investments are critical to developing alternative and new fuel sources, but are also needed in fossil energy to develop the science and technology to ensure their future availability.

OIL AND NATURAL GAS TECHNOLOGIES PROGRAMS

The oil and natural gas technology research programs at DOE have received grossly inadequate appropriations for many years. In fact, in fiscal year 2009 Federal oil and natural gas R&D represented a miniscule proportion of total energy R&D expenditures, while, ironically, oil and natural gas combined contribute 65 percent to our Nation's energy portfolio.

President Obama's fiscal year 2010 budget request continues this ill-advised pattern by proposing to eliminate DOE's petroleum-oil technologies program, funded at $5 million in fiscal year 2009, and increasing by $5 million the natural gas technologies program (for a total program of $25 million) to study natural gas hydrates.

Instead, these programs should be increased substantially to ensure the technology will be available to find, develop, and produce these natural resources.

Criticisms of these research programs are frequently couched in terms of "corporate welfare" or a notion that the private sector should support all oil and natural gas research on its own. But these charges reveal a fundamental misunderstanding of several important trends:

—The transition to non-fossil fuel alternative energies will take much longer than a few decades. Alternatives are currently more expensive, less reliable and sim-

ply cannot meet the scale of energy demand. To try to force the United States on a different course than the rest of the world, at a cost of literally trillions of dollars, will disadvantage the United States at a minimum and worse further hurt the U.S. economy.

—Increasingly, domestic oil and natural gas production is shifting to non-traditional (unconventional) resources, such as the Barnett Shale in Texas or the Bakken formation in the Williston basin. These resources are different from the conventional resources of the past and hold great promise, but realizing that potential requires significant R&D and technology development. Each resource has unique challenges and if the United States is to leverage their global potential it must invest accordingly and substantially.

—Over the past decade the United States has added substantial natural gas reserves with a net increase on the order of 15 trillion cubic feet (TCF) in the past 3 years owing to drilling and expansion of shale gas. Proven reserves of dry natural gas, including Prudhoe Bay, are about 300 TCF. Natural gas resource estimates are 6–7 times the proven reserves. U.S. domestic production of dry natural gas in 2008 was 20.6 TCF. Natural gas is the largest source of domestically produced energy, slightly greater than coal, substantially greater than oil, nuclear, and all other sources. With the proper incentives, and combined with a commitment to LNG, natural gas could support all of the demand growth in power generation needed for several decades. Such a shift in the fossil fuel mix would have a very positive impact on reducing CO_2 emissions growth.

—The U.S. oil and gas industry is in decline. Many of the top public companies that built the U.S. energy advantage no longer exist. Such names as Mobil, Amoco, Texaco, Phillips, Unocal, Arco, Kerr McGee and others are gone as the result of mergers and acquisitions. This decline has not stopped. All combined public companies control less than 10 percent of the world's oil and natural gas reserves; the remainder is controlled by national oil companies (NOCs), many of them OPEC nations. These NOCs are now leasing up resources globally and will become the international oil companies of the future.

—Domestic oil and natural gas resources are increasingly developed by independent producers, ranging from individuals to large companies. They do not have the capacity or resources to conduct independent research. They have, however, been willing and able to quickly adopt and commercialize new technologies when appropriate technology transfer occurs.

—Federal R&D has historically provided support for the Nation's universities and colleges, which have proven to be a rich source of technological innovation. But as Federal support for oil and natural gas technologies has waned, so has the ability to conduct this type of research and train the next generation of U.S. scientists and engineers. This trend is particularly worrisome, because developing nations are investing significantly in fossil energy research and development and U.S. universities are now heavily enrolled by non U.S. students.

Given the important role that oil and particularly natural gas currently play in our energy portfolio, we must rebuild and expand the Nation's Federal R&D and training capacity for oil and natural gas through a partnership of government, academia, and industry. These and other trends demonstrate the need for a robust Federal oil and natural gas program, one that is funded on the scale of coal, nuclear and alternatives.

We request the subcommittee on Energy and Water Development and Related Agencies appropriate $500 million for oil and natural gas technology programs to be administered by the Department of Energy's Office of Fossil Energy to support research projects that target increased production of domestic oil and natural gas resources.

COAL PROGRAM

The Nation's coal resource is vitally important to U.S. energy security. AAPG supports significant research and development funding for coal, including clean coal technologies such as carbon capture and sequestration. We support the funding provided in the American Recovery and Reinvestment Act of 2009 for coal research, and encourage Congress to sustain this commitment in its fiscal year 2010 appropriations by funding at fiscal year 2009 levels or higher.

Again, these investments must be balanced. In evaluating the DOE coal program, I urge you to review the findings of the National Academy's report entitled Coal: Research and Development to Support National Energy Policy, released in June 2007. The study finds that while there are significant uncertainties in U.S. coal reserve and resource estimates, there is sufficient coal at current consumption to last for more than 100 years.

However, there is a real need for more "upstream" coal research to increase our understanding of the Nation's resource base. They observe that currently, over 90 percent of Federal R&D spending for coal is on the "downstream" side, focused on utilization, carbon capture and sequestration, and transport and transmission. Only 10 percent goes to resource and reserve assessment, mining and processing, environment/reclamation, and safety and health.

AAPG supports the $3.4 billion for coal R&D provided in the American Reinvestment and Recovery Act of 2009, and supports President Obama's fiscal year 2010 request of $404 million.

GEOTHERMAL ENERGY TECHNOLOGIES PROGRAM

Geothermal energy is an important alternative energy resource that provides baseload power to the Nation's electrical grid. Significant expansion of geothermal power production may be possible through the development of enhanced or engineered geothermal systems, but developing and proving these technologies will require R&D investment.

AAPG supports the $400 million for geothermal energy R&D and deployment in the American Reinvestment and Recovery Act of 2009. AAPG supports President Obama's fiscal year 2010 request for $50 million for this program, and encourages Congress to appropriate at this level.

SUMMARY

Thank you for the opportunity to present this testimony to the subcommittee. Building a bridge to our energy future requires significant investment in new and alternative energy and fuel sources, but it also requires significant R&D investment in fossil fuels, the foundation of our global energy system, to ensure an orderly transition.

PREPARED STATEMENT OF THE NATIONAL MINING ASSOCIATION (NMA)

NMA RECOMMENDATIONS

Department of Energy—Office of Fossil Energy

Background.—NMA is disappointed that the U.S. Department of Energy (DOE) fiscal year 2010 request severely reduced the overall fossil energy budget, with steep declines in funding for coal programs. While we recognize that the economic stimulus package enacted earlier this year included demonstration project and Clean Coal Power Initiative funding, we do not believe that such funding justifies the 20 percent for all fossil energy programs including in the fiscal year 2010 budget request. A cut of this magnitude will compromise advances in clean coal and carbon capture and sequestration efforts.

Office of Fossil Energy

NMA fully supports and urges maximum funding for carbon capture and storage (CCS) projects that avoid, reduce or store air pollutants and greenhouse gases while contributing long-term economic growth and international competitiveness. Substantial Federal funding for continued research, development and demonstration of CCS technologies will be required before CCS can be applied to large-scale commercial power plants. The construction and operation of near-zero emission and low carbon projects, such as the proposed FutureGen project in Mattoon, Ill., are indispensable to demonstrate that the technology necessary to meet domestic energy demands of the 21st century are available on a commercial scale. NMA strongly supports the recent agreement between the DOE and the FutureGen Alliance to proceed with a reconfigured carbon capture and storage energy facility at Mattoon, Ill. We support the use of $1.073 billion from the American Recovery and Reinvestment Act for use in this endeavor and look forward to working with the Alliance and DOE to further advance CCS technologies.

Funding for basic research and development of new, innovative clean coal technologies is necessary to continue the progress made over the last 35 years. Regulated emissions from coal-based electricity generation have decreased by nearly 40 percent since the 1970s while the use of coal has tripled. Well funded basic coal research by DOE and clean coal technology demonstrations undertaken by DOE-private sector partnerships will continue this significant progress in energy production and environmental improvement. Technological advancements achieved in the base coal research and demonstration programs such as gasification, advanced turbines and carbon sequestration provide the component technologies that will ultimately be integrated into the FutureGen project as recently reconfigured. NMA supports fund-

ing several of these programs at levels higher than the President's request, specifically $80 million for IGCC/gasification (DOE's requested amount: $55 million), $45 million for advanced combustion (DOE's request does not include direct funding) and $45 million for advanced turbines (DOE's request: $31 million). We are, however, pleased that DOE provides nearly $180 million for the Carbon Sequestration Research & Development program and Carbon Sequestration Injection Tests combined. We hope that DOE will work with industry to identify specific programmatic activities and funding for these programs. The increase in funding for these and other programs will ensure the FutureGen project meets the intended goals outlined in DOE's 2004 report to Congress, "FutureGen, Integrated Sequestration and Hydrogen Research Initiative—Energy Independence through Carbon Sequestration and Hydrogen from Coal."

In addition, NMA recommends $3 million of funding for the Center for Advanced Separation Technologies (CAST), which is a consortium of seven universities lead by Virginia Tech. CAST has developed many advanced technologies that are used in industry to produce cleaner fuels in an environmentally acceptable manner, with some having cross-cutting applications in the minerals industry. Further development of advanced separation technologies will help encourage developing countries, such as China and India, to deploy affordable clean coal technologies and reduce CO_2 emissions. Research in Advanced Separations is mandated by the 2005 Energy Policy Act, section 962.

U.S. Army Corps of Engineers—Regulatory and Civil Works Programs

Background.—The U.S. Army Corps of Engineers' (Corps) Regulatory Branch plays a key role in the U.S. economy through the Corps annual authorizations of approximately $200 billion of economic activity through its regulatory program. NMA recommends that a portion of the Corps' regulatory program funding be used to develop a more efficient process for expediting permit decisions associated with surface coal mining operations. In addition, NMA supports the inclusion of language directing the Corps to dedicate sufficient personnel and financial resources needed to support an efficient permit review process.

Regulatory Program

NMA supports increased funding for administering the Corps' Clean Water Act (CWA) section 404 permit program and for devising an efficient permitting program for authorizing surface coal mining permits.

Civil Works Programs

NMA opposes the Corps' proposed concept of a new inland waterways "lockage fee/tax," which would replace the current diesel fuel tax, to fund improvements to the Nation's inland waterways system. A lockage tax would more than double the taxes paid by the towing industry. The coal industry ships approximately 185 million short tons of coal annually on the inland waterways systems, therefore the cost of a new tax will ultimately be borne by the consumers of coal-fueled electricity. NMA opposes such a tax increase and urges Congress to reject this proposal and maintain the current diesel fuel tax.

PREPARED STATEMENT OF THE AMERICAN WIND ENERGY ASSOCIATION

INTRODUCTION

America's wind industry enjoyed a record year of growth last year, deploying over 8,500 megawatts (MW) nationwide, which amounted to more than 40 percent of the country's new electricity generating capacity. Although wind is commercially deployable today, increased research, development, and deployment (RD&D) funding could significantly reduce its overall cost, improve reliability, and help keep America's domestic wind industry competitive with other electric generation sources and the wind industries in other countries.

To meet these goals, the American Wind Energy Association (AWEA) requests that the subcommittee provide $105 million for the Department of Energy's (DOE) Wind Energy Program for fiscal year 2010, an increase of $30 million over the President's budget request. AWEA also requests that the subcommittee provide the DOE Office of Electricity Delivery and Energy Reliability (OE) with the $208 million included in the President's budget request. The President's budget request for OE includes approximately $73 million for transmission development and grid integration that could directly benefit wind deployment, including $20 million specifically for "transmission reliability and renewable integration."

IMPORTANCE AND BENEFITS OF WIND ENERGY RD&D

The DOE Wind Program has provided essential help to the wind industry over the years by supporting technology development and assisting in market acceptance of wind. The job is not done, however. Wind power is still constrained by difficulties in market acceptance and needed improvements in cost, performance, and reliability.

As wind energy meets more of our energy needs, it is crucial to increase Federal funding to lower capital costs and improve turbine reliability. DOE's 20 percent Wind Energy by 2030 report assumes that capital costs decrease by 10 percent and that turbine efficiency increases by 15 percent to reach the goal of providing 20 percent of our Nation's electricity from wind by 2030. The need for continued Federal investment in wind RD&D is made clear in the report when DOE states, "In a functional sense, wind turbines now stand roughly where the U.S. automotive fleet stood in 1940.[1]"

Meeting the 20 percent goal by 2030 would provide a host of benefits nationwide, including:

—Supporting 500,000 jobs, generating over $1 trillion in economic impact by 2030;
—Reducing natural gas demand by approximately 7 billion cubic feet/day, nearly half of the current consumption in the electric sector;
—Decreasing natural gas prices by approximately 12 percent, saving consumers approximately $128 billion through 2030;
—Avoiding 825 million tons of carbon dioxide emissions in the electric sector in 2030, equivalent to 25 percent of expected electric sector emissions; and
—Reducing cumulative water consumption in the electric sector by 17 percent in 2030 (one-third of which would come from the arid West).

EXPLANATION OF APPROPRIATIONS REQUEST

Last year, as part of an AWEA Research and Development (R&D) Committee effort, a team of over 80 AWEA members and advisors from industry, government, and academic institutions met to determine how much funding would be needed to meet the goal of providing 20 percent of our Nation's electricity from wind energy by 2030. Participants determined that $217 million in annual Federal funding, combined with a $224 million annual industry/State cost share, would be necessary to support the research and development and related programs needed to meet that goal. The group determined that $201 million should be directed to DOE, with an additional $15.5 million for the Department of Labor (DOL) for workforce development.

AWEA greatly appreciates DOE's designation of funding from the American Recovery and Reinvestment Act (ARRA) for wind energy RD&D and transmission and systems integration. AWEA is also grateful for the increases for the DOE Wind Program and OE transmission activities in the President's fiscal year 2010 budget. The combined funding will finance a number of key wind industry priorities to help overcome the challenges to meet the 20 percent by 2030 vision. However, neither the ARRA nor the President's budget appears to fully address a number of key wind energy challenges.

Technology R&D funding through the ARRA and the President's budget provides a much needed boost to bring down the cost of wind energy and improve wind turbine efficiency. However, more funding is needed to address issues related to wind turbine technology, siting and public education, wind resource modeling and wind power plant efficiency assessment. In April, Secretary Chu announced $93 million from the ARRA for wind energy RD&D, including $45 million to build a wind turbine drivetrain testing facility and $10 million for the National Renewable Energy Laboratory's (NREL) National Wind Technology Center (NWTC). In May, he announced $25 million to construct and fund first-year operating expenses for the Massachusetts Wind Technology Testing Center to test large wind turbine blades.

In total, the ARRA funding and the President's budget still fall short of the $161 million in annual DOE, non-transmission funding identified through the AWEA R&D Committee effort to meet the goal of providing 20 percent of our Nation's electricity from wind energy by 2030. $45 million for the drivetrain testing facility will be used for construction expenses, as will most of the $25 million provided for the large blade test facility. The $10 million for the NWTC will fund infrastructure improvements to the facility. As a result, a budget gap of $30 million remains between the wind industry's RD&D needs and fiscal year 2010 Federal funding for wind RD&D.

[1] U.S. Department of Energy, "20% Wind Energy by 2030" (July 2008), http://www.20percentwind.org/20p.aspx?page=Report.

The President's fiscal year 2010 budget for the DOE Wind Program includes just over $11 million for "technology acceptance." Within this category, one of the wind industry's top priorities is improving radar and electro-magnetic fields assessment and mitigation. The Department of Defense, Federal Aviation Administration, and other Government agencies are concerned about the impact wind projects have on radar systems. Funding mitigation methods is crucial for opening new areas for wind energy development.

The wind industry has also identified the need to fund programs to educate local policymakers and the general public. Such programs are critically important to provide communities with reliable, objective information about wind projects.

The working group mentioned above determined that $19 million is needed to fund radar assessment and mitigation and the education of the public and local decisionmakers on wind energy issues. Out of the $105 million request, AWEA would appreciate an increase of $8 million to ensure that the DOE Wind Program's technology acceptance efforts meet industry needs and to facilitate the installation of more wind energy projects across the country.

Finally, as mentioned earlier, overcoming the transmission challenges associated with grid integration and transmission expansion is another top priority for the wind industry. Regardless of which office receives funding for grid integration and transmission development, it is crucial that OE and DOE's Office of Energy Efficiency and Renewable Energy (EERE) work together to assist utilities in their efforts to produce grid integration solutions related to wind variability while incorporating expertise in place at DOE national laboratories, such as NREL. EERE, OE, and NREL should also work closely with organizations like the Utility Wind Integration Group (UWIG) to resolve grid integration challenges associated with wind energy development.

GENERAL WIND INDUSTRY PRIORITIES

The wind industry generally supports Federal funding for the following areas:

Wind Turbine Technology and Reliability.—This area should focus on the development of wind turbine components to reduce capital costs, improve performance, and enhance reliability to achieve the 20 percent vision by 2030.

AWEA also recognizes the need to reduce the cost of offshore wind energy technology to provide the estimated 54 gigawatts (GW) of the 300 GW needed to meet the 20 percent goal by 2030. For this reason, AWEA requests that any funding for the DOE Wind Program above the $105 million request be provided for the development of offshore-specific technology. Although the immediate needs for wind technology and deployment are focused on land-based development, AWEA recognizes that offshore wind development offers a substantial opportunity for additional wind development.

Systems Integration.—This program area focuses on the power system operations issues of integrating variable, non-dispatchable power sources into the power system. Areas of special focus include developing and promoting advanced forecasting methods, developing and analyzing additional sources of system flexibility, expanding and implementing power system operation tools, and supporting interconnection-wide integration studies and plans.

Transmission Expansion.—Transmission expansion has been identified as one of the key areas of focus for meeting the 20 percent by 2030 wind energy goal. This area of funding should focus on issues related to expanding the transmission grid to increase access to wind resource areas.

Education and Workforce Development.—NREL has identified the lack of skilled workers as one of the biggest non-technical barriers to the growth of renewable energy industries. In addition to educating policymakers and stakeholders about wind power development, areas of special focus include making sure that DOL and DOE work together to increase the supply of professionals and technical specialists with wind-energy specific knowledge.

Resource Modeling and Wind Power Plant Efficiency Assessment.—A better understanding of wind resources and of turbine wake effects would provide an immediate benefit for projects to be sited and arranged to optimize energy yield and improve performance. Areas of special focus include funding for test centers to better understand wind flow models, research on the effect of wind turbines under unusual atmospheric conditions, and funding for wake loss models.

Siting (Resources, Land Use, Environmental Interface).—Greater funding for wind project siting issues would help the wind industry avoid unnecessary wind deployment delays, thus helping the industry to stay on track to meet the 20 percent vision by 2030. In general, increased funding in this area should be targeted toward

better understanding the impact of wind turbines on wildlife and radar installations and mitigating these impacts.

Small Wind (Turbines 100 Kilowatts and Smaller).—Greater Federal funding for these systems would help the small wind industry serve end users directly with domestic, on-site generation.

CONCLUSION

The President and Congress have called for a bolder commitment to the development of domestic renewable energy resources, particularly wind energy, to meet our Nation's growing energy needs. Continued investments in wind energy RD&D are delivering value for taxpayers by fostering the development of a domestic energy source that strengthens our national security, provides economic development, spurs new high-tech jobs, and helps protect the environment.

While the wind industry continues adding new generation capacity, a number of challenges still exist. Continued support for DOE's wind program is vital to helping wind become a more prominent energy source that leads to a host of economic and environmental benefits. AWEA urges the subcommittee to include $105 million for the DOE Wind Energy Program in fiscal year 2010. Any additional funding above this amount should be directed toward the advancement of offshore wind system technology.

AWEA would also appreciate the subcommittee providing OE with the $208 million included in the President's budget request. As mentioned earlier, the President's budget request for OE includes approximately $73 million that, at least in part, would benefit transmission development and grid integration related to wind deployment, including $20 million specifically for "transmission reliability and renewable integration."

AWEA appreciates this opportunity to provide testimony on DOE's fiscal year 2010 Wind Energy Program budget before the Senate Appropriations Subcommittee on Energy and Water Development. We thank the subcommittee for its time and attention to our request.

PREPARED STATEMENT OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

On behalf of the American Society of Plant Biologists (ASPB) we submit this statement for the official record to support increased funding for the Department of Energy's Office of Science for fiscal year 2010 that would keep the Office on a doubling path. The testimony highlights the importance of biology, particularly plant biology, as the Nation seeks to address vital issues including climate change and energy security. We would also like to thank the subcommittee for its consideration of this testimony and for its strong support for the basic research mission of the Department of Energy's Office of Science.

The American Society of Plant Biologists is an organization of more than 5,000 professional plant biologists, educators, graduate students, and postdoctoral scientists. A strong voice for the global plant science community, our mission—which is achieved through engagement in the research, education, and public policy realms—is to promote the growth and development of plant biology and plant biologists and to foster and communicate research in plant biology. The Society publishes the highly cited and respected journals Plant Physiology and The Plant Cell, and it has produced and supported a range of materials intended to demonstrate fundamental biological principles that can be easily and inexpensively taught in school and university classrooms by using plants.

FOOD, FUEL, CLIMATE CHANGE, AND HEALTH—PLANT BIOLOGY RESEARCH AND AMERICA'S FUTURE

Plants are vital to our very existence. They harvest sunlight, converting it to chemical energy for food and feed; they take up carbon dioxide and produce oxygen; and they are almost always the primary producers in the Earth's ecosystems. Indeed, basic plant biology research is making many fundamental contributions in the areas of fuel security and environmental stewardship; the continued and sustainable development of better foods, fabrics, and building materials; and in the understanding of basic biological principles that underpin improvements in the health and nutrition of all Americans. To go further, plant biology research can help the Nation both predict and prepare for the impacts of climate change on American agriculture, and it can make major contributions to our Nation's efforts to combat global warming.

In particular, plant biology is at the center of numerous scientific breakthroughs in the increasingly interdisciplinary world of alternative energy research. For example, interfaces among plant biology, engineering, chemistry, and physics represent critical frontiers in both basic biofuels research and bioenergy production. Similarly, with the increase in plant genome sequencing and functional genomics, the interface of plant biology and computer science is essential to our understanding of complex biological systems ranging from single cells to entire ecosystems.

Despite the fact that plant biology research—the kind of research funded by the DOE—underpins so many vital practical considerations for our country, the amount invested in understanding the basic function and mechanisms of plants is relatively small when compared with the impact it has on multibillion dollar sectors of the economy like energy and agriculture.

RECOMMENDATIONS

ASPB, as a spokesperson for the plant science community, is in an excellent position to articulate the Nation's plant science priorities as they relate to bioenergy and, specifically, with regard to recommendations for bioenergy research funding through the Department of Energy's Office of Science. Our recommendations, in no particular order, are as follows:

—We commend the DOE Office of Science, through their Divisions of Basic Energy Sciences (BES) and Biological and Environmental Research (BER) for funding the Bioenergy Research Centers (BER) and the recently awarded Energy Frontier Research Centers (BES). Although these efforts are well designed and a significant step forward, these large centers will not have a monopoly on good ideas. Therefore, ASPB strongly encourages the appropriation of additional funds for the DOE Office of Science that would be specifically targeted to the funding of individual or small group grants for bioenergy research, like the Single-Investigator and Small-Group Research (SISGR) projects funded through BES in fiscal year 2009.

—The DOE Office of Science is the primary funding agency for physical science research. Past experience teaches us that many major scientific and technical breakthroughs occur at the interface between traditional scientific disciplines. Therefore, ASPB recommends appropriations that would specifically target the interface between plant biology and the physical sciences to encourage multidisciplinary and cross-disciplinary research that would address significant problems in bioenergy research.

—Photosynthetic research is one clear example of an interface between the physical sciences and biology. The DOE BER has been the major source of funds for basic studies of photosynthesis, which is the primary source of chemical energy on the planet. After all, fossil fuels are just photosynthetic energy that was trapped eons ago and converted through natural processes into the forms in which we use it today. However, the current funding available for photosynthetic research is not commensurate with the central role that photosynthesis plays in energy capture and carbon sequestration. Hence, ASPB calls for an increase in appropriations to BER to expand its research portfolio in the area of photosynthesis and carbon capture.

—Climate change is real and will have significant impacts on agriculture and our way of life for the foreseeable future. There are significant questions that must be answered as to how climate change will impact food production and the environment. There are also clear opportunities to use biological systems to ameliorate climate change, such as through carbon sequestration or modification of plants to resist environmental stress. Therefore, ASPB calls for additional funding focused on studies of the effect of climate change on agricultural cropping systems, basic studies of effects on plant growth and development, and targeted research focused on modification of plants to resist climate change and for use in carbon sequestration.

—Current estimates predict a significant shortfall in the needed scientific and engineering workforce in the energy area. The DOE Office of Science has traditionally not been a major funding agency for education and training, other than that which occurs through the funding of individual investigator and center grants. Given the expected need for additional scientists and engineers who are well-grounded in interdisciplinary research and development activities, ASPB calls for funding of specific programs (e.g., training grants) that are targeted to provide this needed workforce over the next 10 years and to adequately prepare them for careers in the interdisciplinary energy research of the future.

—The revolution in biological technology that has given rise to the various—omics subdisciplines has also generated enormous datasets that reveal the tremendous

complexity of biological systems. Computational biology is a relatively new discipline that arose from the interface of computer science and biology. These new technologies and approaches provide the only means by which these large biological datasets can be integrated and mined for new, relevant biological knowledge. Therefore, as discussed in item two above, ASPB calls for additional funding that would target this interface between biology and computer science. Specifically, we call for additional funding to develop computational platforms to develop a systems-level view of biology through the integration of data obtained from a variety of functional genomics approaches. This is clearly a "grand challenge" that is currently limiting the utility of this information. Additionally, we call for the funding of robust education and professional development programs, including training grants, that target the interface between computer and biological science.

—Considerable research interest is now being paid to the use of plant biomass for energy production. Progress in this area has been strongly affected by the "fuel vs. food" debate, which arose from the current emphasis on the use of corn for ethanol production. A response to this debate has been to switch the focus to plants that can be grown exclusively for biomass (e.g., switchgrass, miscanthus, etc). However, if these crops are to be used to their full potential, considerable effort must be expended to improve our understanding of their basic biology and development, as well as their agronomic performance. Unlike our current, major crops (e.g., soybean, corn), these novel crops have not benefitted from the many years of improvements in crop management and breeding—improvements that, among other things, have vastly increased yield and agronomic efficiency. Although similar efforts to improve targeted bioenergy crops are just beginning, we have established very aggressive goals for the use of these crops to meet the Nation's fuel needs. Therefore, ASPB calls for additional funding that would be targeted to efforts to increase the utility and agronomic performance of bioenergy crops.

Thank you for your consideration of our testimony on behalf of the American Society of Plant Biologists. Please do not hesitate to contact the American Society of Plant Biologists if we can be of any assistance in the future. For more information about the American Society of Plant Biologists, please see www.aspb.org.

PREPARED STATEMENT OF THE AMERICAN SOCIETY OF AGRONOMY, CROP SCIENCE SOCIETY OF AMERICA, AND THE SOIL SCIENCE SOCIETY OF AMERICA

Dear Chairman Dorgan, Ranking Member Bennett and members of the subcommittee, the American Society of Agronomy (ASA), Crop Science Society of America (CSSA), and Soil Science Society of America (SSSA) are pleased to submit the following funding recommendations for the Department of Energy for fiscal year 2010. For the Office of Science, ASA, CSSA, and SSSA recommend a funding level of $5.0 billion, a 4.8 percent increase over fiscal year 2009 ($4.722 billion). For the Office of Energy Efficiency and Renewable Energy, we recommend a funding level of $2.061 billion, a 7 percent increase over fiscal year 2009. Specifics for each of these and other budget areas follow below.

With more than 25,000 members and practicing professionals, ASA, CSSA, and SSSA are the largest life science professional societies in the United States dedicated to the agronomic, crop and soil sciences. ASA, CSSA, and SSSA play a major role in promoting progress in these sciences through the publication of quality journals and books, convening meetings and workshops, developing educational, training, and public information programs, providing scientific advice to inform public policy, and promoting ethical conduct among practitioners of agronomy and crop and soil sciences.

DEPARTMENT OF ENERGY OFFICE OF SCIENCE

The American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America (ASA, CSSA, and SSSA) thank the Senate Energy and Water Appropriations Subcommittee (subcommittee) for providing $1.6 billion from Public Law 111–5, the "American Recovery and Reinvestment Act of 2009 (act)" for research funding through DOE's Office of Science, which oversees the Nation's research programs in climate science, advanced computing, and biofuels areas crucial to our energy future. The act also provides $2.5 billion for Research, Development, and Demonstration at universities, companies, and national laboratories for which we are very grateful.

ASA, CSSA, and SSSA understand the challenges the Senate Energy and Water Appropriations Subcommittee faces with the tight budget for fiscal year 2010. We

also recognize that the Energy and Water Appropriations bill has many valuable and necessary components, and we applaud the subcommittee for funding the DOE Office of Science in the fiscal year 2009 Omnibus Appropriations bill at $4.772 billion. For fiscal year 2010, ASA, CSSA, and SSSA recommend a funding level of $5.0 billion, a 4.8 percent increase over fiscal year 2009. Under the Energy Policy Act of 2005 (Public Law 109–58), the Office of Science was authorized to receive $5.2 billion in fiscal year 2009.

The Office of Science supports graduate students and postdoctoral researchers early in their careers. Nearly one-third of its research funding goes to support research at more than 300 colleges and universities nationwide. Moreover, approximately half the users at Office of Science user facilities are from colleges and universities, providing further support to their researchers. The Office of Science also reaches out to America's youth in grades K–12 and their teachers to help improve students' knowledge of science and mathematics and their understanding of global energy and environmental challenges. This recommended funding level of $5.0 billion is critical to ensuring our future energy self-sufficiency and as a means to address major environmental challenges including global climate change. Finally, a funding level of $5.0 billion will allow the Office of Science to: maintain and strengthen DOE's core research programs at both the DOE national laboratories and at universities; provide support for 1,000 PhDs, postdoctoral associates, and graduate students in fiscal year 2010; ensure maximum utilization of DOE research facilities; allow the Office of Science to develop and construct the next generation facilities necessary to maintain U.S. preeminence in scientific research; and enable DOE to continue to pursue the tremendous scientific opportunities outlined in the Office of Science Strategic Plan and in its 20 Year Scientific Facilities Plan.

BASIC ENERGY SCIENCES

Within the Office of Science, the Basic Energy Sciences (BES) Program is a multipurpose, scientific research effort that fosters and supports fundamental research to expand the scientific foundations for new and improved energy technologies and for understanding and mitigating the environmental impacts of energy use. ASA, CSSA, and SSSA support a fiscal year 2010 funding level of $1.682 billion, a 7 percent increase over fiscal year 2009, for BES.

The portfolio of programs at BES supports research in the natural sciences by focusing basic (discovery) research on, among other disciplines, biosciences, chemistry and geosciences. Practically every element of energy resources, production, conversion and waste mitigation is addressed in basic research supported by BES programs. Research in chemistry has lead to the development of new solar photoconversion processes and new tools for environmental remediation and waste management. Research in geosciences leads to advanced monitoring and measurement techniques for reservoir definition. Research in the molecular and biochemical nature of photosynthesis aids the development of solar photo-energy conversion.

Within the Basic Energy Sciences Program, the Chemical Sciences, Geosciences, and Energy Biosciences subprogram supports fundamental research in geochemistry, geophysics and biosciences. ASA, CSSA, and SSSA recommend $317,910,910 a 7 percent increase over the fiscal year 2009 funding level. The Geosciences Research Program supports research focused at developing an understanding of fundamental Earth processes that can be used as a foundation for efficient, effective, and environmentally sound use of energy resources, and provide an improved scientific basis for advanced energy and environmental technologies. The Biosciences Research Program supports basic research in molecular level studies on solar energy capture through natural photosynthesis; the mechanisms and regulation of carbon fixation and carbon energy storage; the synthesis, degradation, and molecular interconversions of complex hydrocarbons and carbohydrates; and the study of novel biosystems and their potential for materials synthesis, chemical catalysis, and materials synthesized at the nanoscale.

BIOLOGICAL AND ENVIRONMENTAL RESEARCH

Within the Office of Science, the Biological and Environmental Research (BER) Program, is a key component to developing and delivering the knowledge needed to support the President's plan to make America energy independent. ASA, CSSA, and SSSA support a 7 percent increase for BER which would bring the funding level to $643,647,800 for fiscal year 2010. ASA, CSSA, and SSSA support a variety of programs within BER including the Life Sciences subprogram which supports Carbon Sequestration Research (we recommend $8 million for fiscal year 2010), and the Genomes to Life (GTL) program. Within Genomes to Life are programs supportive of bioenergy development including GTL Foundation Research, GTL Sequencing,

GTL Bioethanol Research, and GTL Bioenergy Research Centers, all playing an important role in achieving energy independence for America. Also within BER is the Environmental Remediation subprogram and its Environmental Remediation Sciences Research program, both critical programs to advancing tools needed to clean up contaminated sites. ASA, CSSA, and SSSA recommend a funding level of $190,381,000, a 7 percent increase over fiscal year 2010 for Climate Change Research subprogram. This subprogram supports important areas of climate change research including: Climate Forcing which supports the Terrestrial Carbon Processes program and the Ameriflux network of research sites (which should receive $17 million in funding), as understanding the role that terrestrial ecosystems play in capturing and storing carbon is essential to developing strategies to mitigate global climate change. An additional program of high importance within the Climate Change Research subprogram is the Climate Change Response and its associated programs—Ecosystem Function and Response, and Education. Finally, also under the Climate Change Research subprogram is the Climate Change Mitigation program, part of BER's support to the Climate Change Technology Program, which will continue to focus only on terrestrial carbon sequestration.

DEPARTMENT OF ENERGY OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY

The Office of Energy Efficiency and Renewable Energy (EERE) manages America's investment in the research and development (RD&D) of DOE's diverse energy efficiency and renewable energy applied science portfolio. For the Office of Energy Efficiency and Renewable Energy, we recommend a funding level of $2.061 billion, a 7 percent increase over fiscal year 2009. The fiscal year 2010 EERE budget should continue to maintain focus on key components of the AEI and Twenty in Ten including the Biofuels Initiative to develop affordable, bio-based transportation fuels from a wider variety of feedstocks and agricultural waste products.

NOTE: ASA, CSSA, and SSSA strongly oppose the use by the Department of the terms "agricultural wastes" or "crop wastes" when referring to crop residue. Crop residues, e.g., corn stover, etc. play a very important role in nutrient cycling, erosion control and organic matter development. Recent studies have shown that excessive removal of crop residues from agricultural lands can lead to a decline in soil quality. By no means should they ever be referred to as "wastes".

BIOMASS AND BIOREFINERY SYSTEMS

Within EERE, the Biomass and Biorefinery Systems R&D program plays an important role providing support for Regional Biomass Feedstock Development Partnerships and Infrastructure Core R&D programs, both within Feedstock Infrastructure. For the Biomass and Biorefinery Systems R&D program, we recommend a 7 percent increase for fiscal year 2010 which would bring funding to $190,381,000. The mission of the Biomass Program is to develop and transform our domestic, renewable, and abundant biomass resources into cost-competitive, high performance biofuels, bioproducts and biopower through targeted RD&D leveraged by public and private partnerships. ASA, CSSA, and SSSA support $18 million in funding for the Feedstock Infrastructure program.

CLIMATE CHANGE RESEARCH

ASA, CSSA, and SSSA urge the subcommittee to continue to provide strong support for Climate Change Research to the following programs as follows: Climate Change Science Program (CCSP), $150 million; Climate Change Research Initiative (CCRI), $25,672,000; and Climate Change Technology Program (CCTP), $850,301,000. These three programs together will increase our understanding of the impacts of global climate change and also develop tools and technologies to mitigate these impacts.

BASIC AND APPLIED R&D COORDINATION

The Office of Science continues to coordinate basic research efforts in many areas with the Department's applied technology offices. Within this area is Carbon Dioxide Capture and Storage R&D for which we recommend $20,055,000.

NATIONAL LABORATORIES

The Office of Science manages 10 world-class laboratories, which often are called the "crown jewels" of our national research infrastructure. The national laboratory system, created over a half-century ago, is the most comprehensive research system of its kind in the world. Five are multi-program facilities including the Oak Ridge National Laboratory.

NATIONAL ENERGY TECHNOLOGY LABORATORY (NETL)

ASA, CSSA, and SSSA urge the subcommittee to direct the Department to increase funding for its terrestrial carbon sequestration program, specifically The Regional Carbon Sequestration Partnerships, whose collaborations are essential to maintain.

OAK RIDGE NATIONAL LABORATORY (ORNL)

ORNL is one of the world's premier centers for R&D on energy production, distribution, and use and on the effects of energy technologies and decisions on society.

Thank you for your thoughtful consideration of our requests.

PREPARED STATEMENT OF THE CENTER FOR ADVANCED SEPARATION TECHNOLOGIES, VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Chairman Dorgan, Ranking Member Bennett, and members of the subcommittee, I represent the Center for Advanced Separation Technologies (CAST), which is a consortium of five universities with strong programs in coal mining and processing. I appreciate the opportunity to submit this testimony requesting that your subcommittee add $3 million to the 2010 Fuels Program budget, Fossil Energy Research and Development, U.S. Department of Energy, for advanced separations research. Research in advanced separations technology development is authorized by the Energy Policy Act of 2005, title IX, subtitle F, sec. 962. I am joined in this statement by my colleagues from four other member universities: Richard A. Bajura, West Virginia University; Rick Q. Honaker, University of Kentucky; Peter H. Knudsen, Montana Tech of the University of Montana; Jan D. Miller, University of Utah.

FUNDING REQUEST FOR CENTER FOR ADVANCED SEPARATION TECHNOLOGIES

Fossil energy accounts for 86 percent of the energy used in the United States and the world. Due to concerns for global warming, the U.S. Government is making major investments in developing renewable energy resources and carbon capture and sequestration (CCS) technologies. However, it will take a while for many of the new technologies to come on line. Therefore, CAST will continue to develop advanced technologies that can be used to produce fossil fuels with minimal environmental impacts and to capture the harmful effluents generated from the utilization of fossil fuels.

Between 1990 and 2008, U.S. emissions of CO_2 from fossil fuel combustion grew by 27 percent. But the emissions in China rose 150 percent, from 2.3 to 5.9 billion tons. China's CO_2 emissions are now estimated to be about 24 percent of the global total, surpassing the U.S. contribution of 21 percent (State of the World 2009). It is projected that by 2030 developing countries will account for more than 75 percent of the increase in global CO_2 emissions. Thus, the United States must engage developing countries in its effort to curb CO_2 emissions.

A serious problem in China and India is that much of the coal is burned as mined without cleaning, causing low thermal efficiencies. In these two countries, the thermal efficiencies for power generation are 29 percent in average as compared to 38 percent in the United States. By increasing the efficiency to 33 percent by way of improving coal quality, the CO_2 emissions in China can be reduced by 20 percent. According to a recent IEA report, India could reduce CO_2 emissions by 55 percent using state-of-the-art technologies relating to coal quality, boiler/generator design, instrumentation and control, and high voltage distribution systems (Couch, 2002). Unfortunately, much of the coal burned in India is of low quality, assaying 35–42 percent ash, while the ash contents of the coals burned for power generation are mostly less than 8 percent. Helping China and India improve the quality of their coal burned for power generation would be the first step toward deploying clean coal technologies (CCT) and reducing CO_2 emissions substantially.

It is, therefore, the objective of CAST research to develop advanced technologies that can be used to remove various impurities from coal, so that it can be burned more cleanly and efficiently. These technologies can also be used to minimize the problems associated with waste disposal at mine sites and power plants, and help reduce CO_2 emissions in developing countries. It is also the objective to study and develop methods of extracting other fossil energy resources, such as oil sands, oil shale, and methane hydrates in environmentally acceptable manner.

SUMMARY OF ACCOMPLISHMENT

Cleaning coal becomes more difficult and costly as the size of coal particles becomes smaller. Therefore, many companies discard coal fines to impoundments along with the water that is used for their washing operations, or inject the coal-water slurries into abandoned, underground mines. The latter practice has been drawing criticism, as the water containing toxic elements (and sometimes the slurry itself) contaminates drinking water (Smith, V., AP News, March 21, 2009). The fine coal impoundments also pose environmental threats as they occasionally fail, releasing billions of gallons of slurry into the neighborhoods and rivers. Recognizing the seriousness of these problems, CAST has been developing a series of advanced fine coal cleaning technologies over the years. During the last few years, we have been focusing on developing methods of removing water (dewatering) from fine coal slurry, which is regarded one of the most technologically challenging problems for the coal industry. During 2008–2009, CAST has completed testing the hyperbaric centrifugal dewatering technology in operating plants. The results of the successful test program have been highlighted in Techline, DOE's web newsletter, in February 2009. Industry leaders consider this new development as the most significant technological breakthrough in 20 years.

CAST is also well known for its expertise in separating fine coal from ash-forming minerals. One success story was the development of the Microcel™ flotation technology, which is widely used around the world. During the last 2 years, FLSmidth Minerals, Salt Lake City, Utah, which is one of the world's largest mining equipment companies, has provided $900,000 of research funding to develop a mathematical model for the separation process. This industrial funding was provided as a matching fund against the $250,000 of CAST fund allocated for this project. The results of the project will be used to help the company improve the designs of the currently marketed flotation machines.

Indian coal is notoriously difficult to clean, because ash-forming minerals are finely disseminated in the coal matrix. Using conventional methods, it is difficult to reduce the ash content to below 12–14 percent by weight even for high-quality metallurgical coals. With the help of the U.S. Department of Energy, CAST is negotiating a $1.2 million research contract with Coal India Limited (CIL), in which a 75-tonnes per hour coal cleaning plant is designed, constructed by CIL, and demonstrated. The plant will be using the advanced technologies developed at CAST to reduce the ash content to below 8 percent.

In addition, CAST is testing a pilot-scale dry coal cleaning technology in India. This project is funded by the Department of State (DOS) in the amount of $1.1 million as part of the Asia Pacific Partnership (APP) for Clean Development and Climate program. The pilot-scale test unit has been shipped to India for on-site testing, which will begin within a month. The objective of this project and the one described in the forgoing paragraph is to help India clean coal before burning, which is considered the lowest-cost option to reduce CO_2 emissions in the country.

CAST research activities helped the fossil energy industries in Utah, including coal, oil sand and oil shale industries. For example, CAST funds have helped to sustain the development of new technology for the efficient utilization of western coal by Ambre Energy, North America, a Salt Lake City based company. Ambre Energy has licensed a University of Utah technology as part of their plans to construct a $300 million plant which will include, among others the production of advanced transportation fuels from western coal resources.

In the areas of post-combustion clean-up, CAST has developed metallic filters that can remove mercury from the flue gas generated at coal-fired power plants. Based on the successful laboratory test results, the mercury filters were tested at the PPL's Colstrip power plant in Montana. The removal efficiency was greater than 90 percent, verifying laboratory experiments. The mercury absorbed on the metallic filters were stripped off by an in situ thermal treatment, so that the filter can be reused and the mercury be collected for commercial use.

All of the fossil fuels, including coal, oil, natural gas, methane in hydrate, kerogen in oil shale, and bitumen in oil sands, are naturally hydrophobic. During 2008–2009, CAST has made significant advancements in the basic understanding of the nature of hydrophobicity and hydrophobic interactions. The results will be useful not only for developing these energy resources but also for separating different gases from each other. It is possible to convert one type of gas to hydrate (solid) leaving the others in gaseous form, thereby achieving separation.

PROPOSED WORK

Although coal is regarded as "dirty" fuel, it will take some time before clean, renewable fuels can replace coal substantially. According to the 2008 International

Energy Outlook (EIA, September 2008), coal consumption will increase faster than any other energy resource, particularly in China. Therefore, it is important to continue to develop methods of recovering and utilizing coal with minimal environmental impacts. To meet this objective, CAST will develop technologies that can be used to minimize the environmental problems both at mine sites (e.g., refuse pond and runoff water from valley-fill mining operations) and coal-burning power plants (e.g. ash pond, mercury emissions, and CO_2 emissions).

In addition to the hyperbaric centrifuge described above, CAST has been developing a novel technology that can remove water, ash, and other impurities simultaneously. Laboratory tests showed that this new technology can produce clean coal with lower moisture and lower ash contents at higher coal recoveries than can be achieved by using a combination of the Microcel and the centrifuge technologies. The new technology can, therefore, be implemented at lower capital cost and will be particularly useful for recovering coal from fine coal impoundments. During 2009–2010, the new process will be tested on a bench-scale continuous mode. Several companies have expresses strong interest in commercializing this new technology.

An important part of developing coal cleaning technologies is technology transfer. Therefore, CAST will devote considerable resources for on-site testing, problem solving, and offering short-courses and seminars for plant operators. Keeping industry operators abreast of CAST research will expedite the technology transfer and help the U.S. companies maintain a clean environment near mine sites.

Using the improved understanding of the basic sciences involved in gas hydrate formation, CAST will also develop methods of separating gases from each other. The methods will be based on solidifying one-type of gas as hydrate while keeping the others in gaseous form. For example, CO_2 and nitrogen present in combustion gases can be readily separated from each other by the selective hydrate formation method. One problem associated with the approach is the slow kinetics of hydrate formation. It is, therefore, proposed to find ways to increase the kinetics by using additives. The gas-gas separation process by forming hydrates can have higher capacity and lower cost than other methods.

The proposed research can also lead to the development of efficient methods for extracting methane from hydrate resources. The National Energy Technology Laboratory is spearheading a program to extract methane from the Alaskan North Slope with the objective of producing methane by 2015. CAST will explore the possibility of extracting methane from marine hydrate resources. It is estimated that the United States has 200,000 Tcf of methane as hydrate, while the proven reserve for dry natural gas is only 238 Tcf. The Blake Ridge deposit alone, off the shores of the Carolinas, has 1,300 Tcf of methane. Thus, the research on gas hydrate will lead to the development of unconventional gas resources, development of efficient gas-gas separation methods, sequestration of CO_2 as hydrate, and transport and storage of methane and hydrogen.

FUNDING REQUEST

It is requested that $3 million of funding for CAST be added to the fiscal year 2010 Fuels Program budget, Fossil Energy R&D, U.S. Department of Energy. Continued funding will allow CAST to develop advanced technologies for producing domestic energy resources in an environmentally acceptable manner, while helping developing countries reduce CO_2 emissions. The new technologies can also minimize concerns related to ash and refuse ponds and the runoff water at valley-fill mining operations. In addition, the new gas-gas separations technologies will have cross-cutting applications for a wide spectrum of the Fossil Energy R&D programs.

PREPARED STATEMENT OF THE FRIENDS COMMITTEE ON NATIONAL LEGISLATION (QUAKERS)

The Friends Committee on National Legislation (Quakers) thanks the subcommittee for the opportunity to submit this testimony for the record. We appreciate the subcommittee's transparency and willingness to open its proceedings to the public. The Washington Post paraphrased NNSA Administrator Thomas D'Agostino's testimony before the House Appropriations Energy and Water Development Subcommittee on March 24 as saying, "the number of new plutonium triggers that will be needed to keep the U.S. nuclear weapons stockpile reliable and secure has steadily dropped from 450 a year to 20."

Decreased demand, paired with President Obama's call for drastic reductions in the U.S. nuclear arsenal, requires for changes at NNSA. Our testimony centers on the need to restructure the NNSA budget in order to meet today's security demands

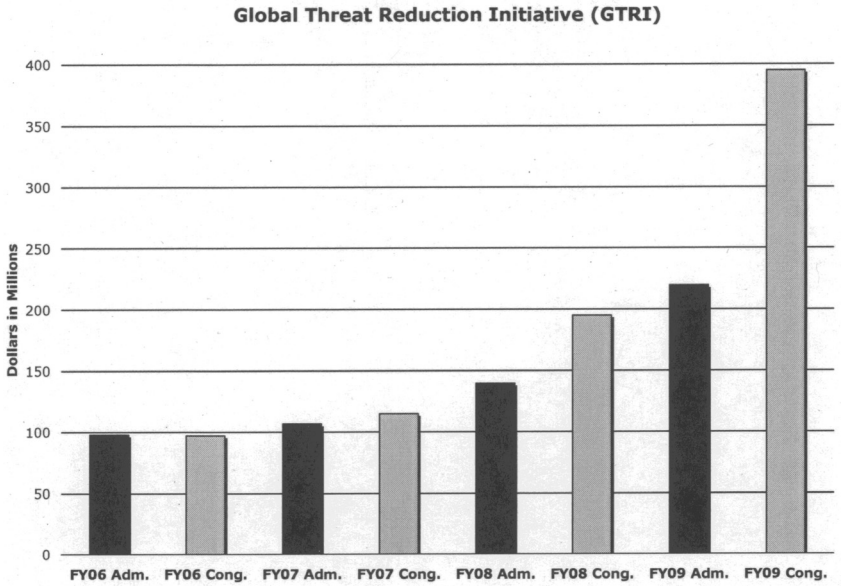
by adequately funding nuclear nonproliferation programs, supporting disablement and dismantlement programs in North Korea, reforming spending on the nuclear weapons complex, and discontinuing new nuclear weapons programs.

NUCLEAR NONPROLIFERATION PROGRAMS

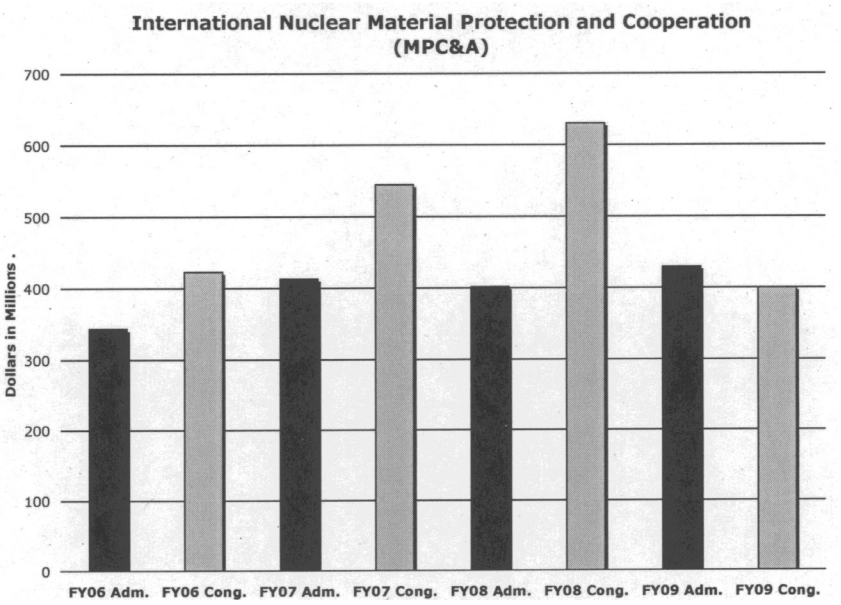
The subcommittee's commitment to nuclear nonproliferation programs has increased international security. The best example of that commitment is the increased funding allocated to the Global Threat Reduction Initiative (GTRI) in the omnibus appropriations bill for fiscal year 2009. Testifying before the Senate Appropriations Subcommittee on Energy and Water Development last year (April 30, 2008), former NNSA Deputy Administrator for Defense Nuclear Nonproliferation William Tobey pointed out the successes of GTRI:

The GTRI program, and its antecedents, have removed approximately 68 nuclear bombs' worth of highly enriched uranium and secured more than 600 radiological sites around the world, collectively containing over 9 million curies, enough radiation for approximately 8,500 dirty bombs. In the United States the GTRI program has removed over 16,000 at-risk radiological sources, totaling more than 175,000 curies—enough for more than 370 dirty bombs.

A graph of funding for GTRI over the past 4 years shows why the program has succeeded. We thank the subcommittee for supporting GTRI and believe, as is evidenced by Deputy Administrator Tobey's testimony, that the marginal benefit to international security from every dollar spent on nuclear nonproliferation programs is greater than that of any other dollar spent on national defense.



Other nuclear nonproliferation programs, such as the International Nuclear Materials Protection and Cooperation Program (MPC&A), which secures weapons-usable nuclear material in other countries, are in need of similar funding increases to accelerate the speed of finding and securing nuclear material, and upgrading the infrastructure which keeps weapons-grade material out of the wrong hands. As you can see, the previous administration's requests for MPC&A funding has been just above stagnant over the past several years. This year, Congress cut funds for MPC&A by $230 million because the program is winding down in Russia. Nevertheless, we believe the program should be expanded beyond Russia. Increasing and expanding MPC&A could be critical to achieving President Obama's goal to account for and secure all nuclear warheads and loose nuclear material around the world by the end of his first term.



We call on the subcommittee to make sufficient investments in the next generation of nuclear nonproliferation scientists. President Obama has stated that a top priority of his administration will be negotiating a verifiable fissile material cutoff treaty. Without expanding the pool of safeguards and other nonproliferation experts and drawing new talent into the field, the President's goal will not be achieved.

Administrator D'Agostino testified before the House Appropriations Energy and Water Development Subcommittee that the Federal Government has been unable to lure top tier scientific talent at institutions of higher learning away from the private sector. The Administrator pointed to fields such as radioanalytic chemistry, in which graduates could seek research careers in nuclear forensics. Instead, these students are increasingly choosing lucrative offers from private industry over the opportunity to serve the country. The subcommittee must determine ways to reverse this trend.

NUCLEAR WEAPONS COMPLEX

Administrator D'Agostino was blunt in pointing out that, "We must stop pouring money into an old, cold war complex that is too big and too expensive." We could not agree more strongly. The discourse over the size and scope of the nuclear weapons complex in recent years has mirrored moral, political, and global realities that nuclear weapons are becoming obsolete.

The numbers are striking. In 2005, NNSA proposed a new plutonium production facility with a capacity of 450 pits per year. In 2006, this figure was reduced to a capacity of 125 pits per year. Again, in 2007, the estimated necessary capacity was reduced to 80 pits per year. Administrator D'Agostino's testimony indicated that due to the changes on nuclear policy set forth by President Obama, NNSA is operating at the minimum production capacity of 20 pits per year. Simply put, with every passing year, the need for a large-scale capacity to produce plutonium pits bounds toward zero.

We recommend abandoning expensive plans to build new plutonium production facilities and focusing on how to secure existing facilities while decreasing pit production capacities as the country reduces its nuclear stockpile and pushes nuclear weapons toward irrelevance.

NEW NUCLEAR WEAPONS

Proponents of new nuclear weapons have been unable in past years to justify to lawmakers a need for programs like the nuclear "bunker buster" and so-called Reliable Replacement Warhead. Congress has declined to fund these programs year

after year, culminating with a line in the fiscal year 2009 omnibus appropriations bill, "Development work on the Reliable Replacement Warhead will cease."

Developing new nuclear weapons sends the wrong message to other nations. Rather than leading the way on the path to a nuclear weapons free world, the United States would be perceived as taking provocative actions and possibly spur reactions that increase global nuclear proliferation.

The subcommittee's scrutiny of nuclear weapons programs in a bipartisan basis has led to responsible decisions that avoid sending these mixed messages and demonstrate the leadership necessary to move forward on the bold changes necessary to achieve the elimination of nuclear weapons.

NORTH KOREAN DISABLEMENT AND DISMANTLEMENT

Last year, the Bush administration secured a waiver to the 1994 Glenn amendment to enable the National Nuclear Security Administration to provide assistance for the disablement and dismantlement of North Korea's nuclear facilities. However, the waiver, which passed in a supplemental appropriations bill for fiscal year 2008 (Public Law 110–252, sec. 1405), has not been implemented. The Obama administration must implement this waiver to allow for these activities to occur. We ask that the subcommittee encourage the administration to implement the waiver despite North Korea's recent actions. Should the six party talks with North Korea resume and inspectors be allowed back into North Korea, delays in implementing the waiver would only slow disablement and dismantlement programs.

Additionally, we urge the subcommittee to fund dismantlement and disablement activities in the fiscal year 2009 supplemental appropriations bill and the fiscal year 2010 budget at the level of the administration's request.

Thank you for your consideration.

PREPARED STATEMENT OF SOUTHERN COMPANY GENERATION

Mr. Chairman and members of the subcommittee, Southern Company operates the U.S. Department of Energy's (DOE's) National Carbon Capture Center (NCCC) at the Power Systems Development Facility (PSDF) in Wilsonville, AL (http://psdf.southernco.com) for DOE's National Energy Technology Laboratory (NETL) and several industrial participants.[1] The PSDF was conceived as the premier advanced coal power generation research and development (R&D) facility in the world. It has fulfilled this expectation. I would like to thank the Senate for its past support of the PSDF and request the subcommittee's continued support as the PSDF responds to the need for developing cost-effective carbon dioxide (CO_2) capture technology for coal fueled power generation. This statement supports the administration's budget request for DOE coal R&D which includes about $41.5 million for work at the PSDF. These funds are necessary to conduct the future test program developed in collaboration with DOE which includes wide-ranging support of the DOE Carbon Sequestration Technology Roadmap. The future focus of the PSDF is to conduct sufficient R&D to advance emerging CO_2 control technologies to commercial scale for effective integration into either combustion or Integrated Gasification Combined Cycle (IGCC) processes.

A key feature of the PSDF is its ability to test new carbon capture technologies for coal-based power generation systems at an integrated, semi-commercial scale. Integrated operation allows the effects of system interactions, typically missed in unintegrated pilot-scale testing, to be understood. The semi-commercial scale allows the maintenance, safety, and reliability issues of a technology to be investigated at a cost that is far lower than the cost of commercial-scale testing. Capable of operating at pilot to near-demonstration scales, the PSDF is large enough to produce data to support commercial plant designs, yet small enough to be cost-effective and adaptable to a variety of technology research needs.

In addition to semi-commercial scale testing, the PSDF will serve as a test bed for cost-effective technology screening by providing slipstreams of actual syngas from coal gasification and flue gas from coal combustion. Future test work at the PSDF will include the scale-up and continued development of several CO_2 capture technologies being developed either at DOE's NETL facility, at private R&D laboratories or at the PSDF. The DOE program for CO_2 capture in coal-fueled powerplants is divided into three areas: post-combustion capture for conventional pulverized coal plants, pre-combustion capture for coal gasification powerplants, and oxy-combus-

[1] Current PSDF participants include Southern Company, the Electric Power Research Institute (EPRI), American Electric Power, Luminant, Peabody Energy, Arch Coal, Inc., and Rio Tinto.

tion processes which produce a more CO_2-rich flue gas than conventional combustion for easier CO_2 capture. The PSDF's CO_2 capture efforts would address all three areas.

Southern Company also supports the goals of the Clean Coal Technology Roadmaps developed by DOE, EPRI, and the Coal Utilization Research Council (CURC). These Roadmaps identify the technical, economic, and environmental performance that advanced clean coal technologies can achieve over the next 20 years. Over this time period coal-fired power generation efficiency can be increased to over 50 percent (compared to the current fleet average of ~32 percent) while producing de minimis emissions and developing cost-effective technologies for CO_2 management.

SUMMARY

The United States has historically been a leader in energy research. Adequate funding for fossil energy research and development programs, including environmental and climate change technologies will provide our country with secure and reliable energy from domestic resources while protecting our environment. Current DOE fossil energy research and development programs for coal, if adequately funded, will assure that a wide range of electric generation options are available for future needs. Congress faces difficult choices when examining near-term effects on the Federal budget of funding energy research. However, continued support for advanced coal-based energy research is essential to the long-term environmental and economic well being of the U.S. Prior DOE clean coal technology research has already provided the basis for $100 billion in consumer benefits at a cost of less than $4 billion. Funding the administration's budget request for DOE coal R&D and long-term support of the Clean Coal Technology Roadmap can lead to additional consumer benefits of between $360 billion and $1.38 trillion.[2] But, for benefits to be realized from advanced coal R&D, the critically important R&D program outlined in the Clean Coal Technology Roadmap must be conducted.

One of the key national assets for achieving these benefits is the PSDF. The fiscal year 2010 funding for the PSDF needs to be about $41.5 million to support construction of new facilities to test technologies that are critical to the goals of the DOE Carbon Sequestration Technology Roadmap and to the success of the development of cost-effective climate change technologies that will enable the continued use of coal to supply the Nation's energy needs. The major accomplishments at the PSDF to date and the future test program planned by DOE and the PSDF's industrial participants are summarized below.

PSDF ACCOMPLISHMENTS

The PSDF test-bed has operated successfully for many years in support of U.S.–DOE's advanced coal program. Skilled staff from disciplines essential for a successful research program has gained experience by designing and operating the test equipment and by working with vendors to develop and improve their technologies. The PSDF has developed testing and technology transfer relationships with over 50 vendors to ensure that test results and improvements developed at the PSDF are incorporated into future plants. In some instances, testing has eliminated technologies from further consideration. Such screening is valuable in that it concentrates R&D effort on those technologies most likely to succeed and is an essential part of managing the U.S.–DOE's financial resources. Major subsystems tested and some highlights of the test program at the PSDF include:

Transport Reactor.—The transport reactor has been operated successfully on subbituminous, bituminous, and lignite coals as a pressurized combustor and as a gasifier in both oxygen- and air-blown modes and has exceeded its primary purpose of generating gases for downstream testing. Since modifications were made in 2006, subsequent testing with air-blown gasifier operations has indicated substantial improvements in syngas heating value and carbon conversion. This transport technology is projected to be the lowest capital cost coal-based power generation option, while providing the lowest cost of electricity and excellent environmental performance.

Advanced Particulate Control.—Two advanced particulate removal devices and 28 different filter elements types have been tested to clean the product gases, and material property testing is routinely conducted to assess their suitability under long-term operation. The material requirements have been shared with vendors to aid their filter development programs.

[2] EPRI Report No. 1006954, "Market-Based Valuation of Coal Generation and Coal R&D in the U.S. Electric Sector", May 2002.

Filter Safe-Guard Device.—To enhance reliability and protect downstream components, "safe-guard" devices that reliably seal off failed filter elements have been successfully developed.

Coal Feed and Ash Removal Subsystems.—A key to successful pressurized gasifier operation is reliable operation of the coal feed system and ash removal systems. Developmental work on the pressurized coal feed systems has increased the understanding and optimization of their performance. Modifications developed at the PSDF and shared with equipment suppliers allow current coal feed equipment to perform in a commercially acceptable manner. An innovative, continuous process has also been designed and successfully tested that reduces capital and maintenance costs and improves the reliability of fine and coarse ash removal.

Syngas Cooler.—Syngas cooling is of considerable importance to the gasification industry. Devices to inhibit erosion, made from several different materials, were tested at the inlet of the gas cooler and one ceramic material has been shown to perform well in this application.

Advanced Syngas Cleanup.—A slipstream unit has provided a very flexible test platform for testing numerous syngas contaminant removal technologies to improve environmental footprint and reduce costs in IGCC gas clean-up.

Sensors and Automation.—Significant progress with sensor development and process automation has been achieved. More than 20 instrumentation vendors have worked with the PSDF to develop and test their instruments under realistic conditions. Development of reliable and accurate sensors for the gasification process has concentrated on coal feed, Transport Gasifier, and filter systems. Automatic temperature control of the Transport Reactor has been successfully implemented.

Fuel Cell.—Two test campaigns were successfully completed on 0.5 kW solid oxide fuel cells manufactured by Delphi on syngas from the transport gasifier marking the first time that a solid oxide fuel cell (SOFC) has been operated on coal-derived syngas. In addition, a NETL-erected SOFC multi-cell array test skid was used at PSDF to successfully conduct parallel testing of many cells directly on coal syngas.

CO_2 Capture.—Slipstream CO_2 capture testing has been completed on both simulated and actual syngas and results have been used to design larger test equipment.

PSDF FUTURE TEST PROGRAM

Developing technology options that will reduce CO_2 emissions is a primary goal for future work at PSDF. These technologies will be screened in close collaboration with NETL for selection for testing at the PSDF. This facility will serve as a productive test-bed for developing advanced technology and is capable of operating from bench- and pilot-scale to near demonstration scales allowing results to be scaled to commercial application. The PSDF will concentrate on developing cost-effective, commercially viable carbon capture technology for coal-fueled powerplants through scale-up and continued development of several technologies (including for example those being developed either at DOE's facilities or by third party technology developers).

For both new and existing powerplants, post-combustion capture technology must be made more efficient and cost-effective. In post-combustion capture, CO_2 is separated from the flue gas in a conventional coal-combustion powerplant downstream of the pulverized coal boiler. Many technologies are under consideration for post-combustion capture, but these technologies need to be proven and integrated in an industrial powerplant setting. Activities at the PSDF for post-combustion capture technology will include:

Pilot-Scale Test Modules.—Pilot-scale test modules of advanced post-combustion technologies will be designed, installed, and operated in an existing pulverized coal plant adjacent to the PSDF. The flexible design of these test modules will allow the testing of a wide range of technologies on actual flue gas.

Technology Screening.—Available solvents developed by NETL, PSDF and others will be screened to assess readiness for testing at the site using improved contacting devices that are now under development.

Alternative Solvent Processes.—Alternative solvents with lower heats of regeneration and more compact, lower cost gas-liquid contacting equipment will be developed and tested.

Advanced Technology.—Compact membrane contactors and solid phase CO_2 sorbents that are currently being investigated by DOE–NETL and private companies will be assessed and installed. PSDF will provide a scaled-up testing platform for these technologies as development progress warrants.

In pre-combustion capture, CO_2 is separated from the syngas in a coal gasification powerplant upstream of combustion in the gas turbine. Research & development ac-

tivities at PSDF for pre-combustion capture technology for application to gasification-based power generation include:

Advanced CO_2 Capture Systems.—New solvents and gas-liquid contacting devices will be evaluated on air-blown and oxygen-blown syngas. New sorbent-based or membrane-based CO_2 separation technologies will be scaled-up and tested based on progress in fundamental R&D by third party developers.

Water Gas Shift Enhancements.—New water gas shift reactor configurations and sizes are planned for testing at the PSDF. The operation of shift catalysts when exposed to syngas at the PSDF will be optimized and their technical and economic performance will be evaluated.

Advanced Syngas Cleanup.—New advanced syngas cleanup systems will be tested for reducing hydrogen sulfide, hydrochloric acid, ammonia, and mercury to near-zero levels.

In order to develop a cost-effective advanced coal powerplant with CO_2 capture, all process blocks within the powerplant must be optimized in addition to the capture block. Including CO_2 capture in an advanced coal powerplant will increase the plant cost of electricity (COE), so opportunities to reduce cost in every part of the process will be explored. Although highest priority will be given to low-cost CO_2 capture process development, projects that reduce overall process capital and operating costs will also be included in the PSDF test plan to partially offset incremental cost increases due to the addition of CO_2 capture. These cost reduction projects include technology development for syngas cleanup, particulate control, fuel cells, sensors and controls, materials, and feeders.

PREPARED STATEMENT OF ASME

Mr. Chairman, ranking member, and members of the subcommittee, the ASME Energy Committee is pleased to provide this testimony on the fiscal year 2010 budget request for research and development programs in the Department of Energy (DOE).

INTRODUCTION TO ASME AND THE ASME ENERGY COMMITTEE

The 127,000-member ASME is a nonprofit, worldwide educational and technical Society. It conducts one of the world's largest technical publishing operations, holds more than 30 technical conferences and 200 professional development courses each year, and sets some 600 industrial and manufacturing standards. The Energy Committee of ASME's Technical Communities comprises 30 members from 17 divisions of ASME, representing approximately 40,000 of ASME's members.

ASME has long advocated a balanced energy supply mix to meet the Nation's energy needs, including advanced coal, petroleum, nuclear, natural gas, biomass, solar, wind and hydroelectric power, and energy efficient building and transportation technologies. Only such a portfolio will allow the United States to maintain its quality of life while addressing future environmental and security challenges. Sustained growth will also require stability in licensing and permitting processes not only for power stations but also for transmission and transportation systems.

A forward-looking energy policy will require enhanced, sustained levels of funding for R&D as well as Government policies that encourage deployment and commercialization. While the Energy Committee supports much of the fiscal year 2010 budget request, especially the increases in funds for fundamental scientific research, we wish to reemphasize that a balanced approach to our energy needs is critical and we are concerned about the decrease in funding for nuclear energy, which is essential to meeting our national energy needs.

CRITICAL ISSUES

The Energy Committee would like to point out some critical energy issues:

—Additional investment guarantees for construction of new clean and especially nuclear facilities must be enacted in future energy legislation. These guarantees will enable lower financing costs for a variety of energy technologies leading to lower energy costs for the American public. Extending these programs further into the future will allow a reasoned rate of increase in construction and application of these technologies for electric generation.

—There is a critical shortage of trained persons in the workforce at all levels. This includes persons in the various building trades that will be involved in the construction of our energy systems, persons in the manufacturing industry that will manufacture the components that make up our energy systems, persons who will be available to operate and maintain the energy systems when they

are built, and persons trained as engineers and scientists at all levels who will perform the R&D and design functions for all energy systems. A recent initiative, "Regaining our ENERGY Science and Engineering Edge" or "RE–ENERGYSE," a program being conducted jointly by the DOE EERE and the National Science Foundation (NSF) and geared to young scientists and engineers, is a positive step toward addressing this chronic issue.

FOSSIL ENERGY

The fiscal year 2010 budget request of $884 million for fossil energy represents a $513 million decrease over the fiscal year 2009 appropriation. Fossil Energy Research and Development would be reduced $112 million to $403 million. The R&D budget for oil and natural gas related research has been eliminated. It should be noted that the DOE Office of Fossil Energy received $3.4 billion for Research and Development as part of ARRA, for research, development and deployment of carbon capture and sequestration, therefore the ASME Energy Committee supports this funding request. The Energy Committee supports the current proposed funding for coal research programs at $617 million for fiscal year 2010. The effective use of coal in today's environment demands an increase in efficiency and a decrease in release of environmentally harmful waste streams. A large portion of this effort right now is the Clean Coal Program Initiative (CCPI), which received $1.5 billion as part of ARRA and therefore, did not request any additional funding for fiscal year 2010. This approach builds on technological R&D advancements in IGCC and CCS technology achieved over the past 5 years and provides commercial-scale demonstration opportunities for fossil energy powerplants.

The use of more efficient processes for coal use, such as advanced integrated gasification combined cycle technology, combined with carbon sequestration will allow the United States to utilize its coal resources in a more environmentally sound and cost effective manner. We encourage strong and consistent funding for these programs now and in future years.

ADVANCED FUELS RESEARCH

The Energy Committee agrees that the advanced fuels research should be aimed at fuels used in the transportation system. We believe that the development of transportation fuel systems that are not petroleum based is a critical part of our future national energy policy. The fiscal year 2010 budget for biomass and bio-refinery systems R&D is increased by $18 million to $235 million. The Energy Committee encourages Congress to ensure that these research programs continue to receive adequate funding. We are also pleased to see the increase to $330 million in the effort related to vehicle technologies with a program emphasis on plug-in hybrid electric vehicles.

NUCLEAR ENERGY

The Energy Committee is discouraged to see a steep decrease in the DOE Nuclear Energy budget to $844 million in fiscal year 2010. Even with the reduction of the MOX fuel fabrication facility from the Nuclear Energy budget, placing it back with the Nuclear National Security Administration (NNSA), the nuclear R&D portion of the budget request is reduced by $112 million to $403 million for fiscal year 2010. Because of the sharp reduction in funding, and the decision to exclude the Office of Nuclear Energy from ARRA, the Committee strongly recommends restoring funding for DOE Office of Nuclear Energy to at least the levels appropriated in fiscal year 2009. Nuclear power, as a non-greenhouse gas-emitting resource, is a critical component of a diverse U.S. power generation mix and should play a larger role in the Nation's base power supply. Sustained increases in nuclear power research are justified by the imperative of low cost, low emissions electricity.

Proposed increases in the Nuclear Energy budget are most evident in the Generation IV Nuclear Energy Systems, $191 million, Fuel Cycle R&D, $192 million, and Nuclear Power 2010 program at $20 million. The primary decrease is in the Generation IV Nuclear Systems Initiative which is $45 million. The Energy Committee believes that nuclear generated electricity is important to the Nation, especially in a more carbon conscious environment. Therefore continued R&D looking at advanced nuclear systems is critical.

The GNEP program, before its cessation in the fiscal year 2009 Omnibus Appropriations bill, was a vital means to enhancing the future of safe, reliable, nuclear energy through the establishment of international centers for nuclear fuel cycle services for nations both large and small. Although no funding is provided for GNEP, the Advanced Fuel Cycle Initiative, now called Fuel Cycle R&D, would receive $192 million in funding in fiscal year 2010. The Energy Committee concurs

with the DOE goal to establish a full scale demonstration of the required facilities, including a burner reactor and fuel recycle plant that will not produce a pure plutonium product stream. The ASME Energy Committee is disappointed with the cancellation of the GNEP program and urges Congress and the administration to reconsider the discontinuation of GNEP. GNEP was established as an international effort and many international partners had agreed to participate. This is consistent with efforts to establish an international nuclear fuel bank.

ENERGY EFFICIENCY AND RENEWABLE ENERGY

The Office of Energy Efficiency and Renewable Energy (EERE) manages America's investment in research, development and deployment of the Department of Energy's (DOE) diverse energy efficiency and renewable energy applied science portfolio. It should be noted that the DOE EERE received $16.5 billion as part of ARRA, including $2.5 billion for Research and Development. The fiscal year 2010 request of $2.02 billion, $570 million above the fiscal year 2009 appropriated amount, provides a broad and balanced portfolio of solutions to address the urgent energy and environmental challenges currently facing our Nation. Most of the key EERE programs, including Biomass, Solar, Wind, Geothermal, Building Technologies, Vehicle Technologies, and Industrial technologies, have received sizable increases in funding to support the growth of renewable energy that the United States needs. The potential to reduce the production of greenhouse gases and to meet the growing need for domestically produced energy justifies sustained and increased support for these programs.

The Fuel Cell Technologies program, formerly known as the Hydrogen technology program has been reduced $100 million from the fiscal year 2009 appropriation. While the administration has publicly indicated that they view the probability of fuel cell vehicles as "low", this program is a key driver in the development of fuel cell technology. The Energy Committee encourages restoring funding to the Hydrogen Program consistent with the fiscal year 2009 appropriation. The other technology program to receive a cut was the Water Power Program, which is now requested to receive $30 million in fiscal year 2010—a 25 percent or $10 million cut from fiscal year 2009. While relatively small, this program supports R&D for wave and ocean energy technologies as well as conventional and pumped storage hydropower. Water power will contribute significantly to the eventual transition to clean and renewable power generation in the United States. The Energy Committee encourages restoring funding to the Water Power Program consistent with the fiscal year 2009 appropriation.

The integration of renewable electric generating systems into the operation of the electricity distribution system is critical to economic operation of these systems. DOE's support of R&D into distributed systems integration began in fiscal year 2007. The Energy Committee believes that R&D related to the integration of the electric grid and its control as a national system is imperative to the growth of renewable energy generating technologies and we encourage full funding for such research.

SCIENCE AND ADVANCED ENERGY RESEARCH PROGRAMS

The Energy Committee is pleased by the increased request for the Office of Science (OS) which restores the funding trajectory mandated in the America Competes Act of 2007. It should be noted that the DOE Office of Science received $1.6 billion as part of ARRA. The fiscal year 2010 budget proposal of $4.94 billion is an increase of $184 million over the fiscal year 2009 appropriation. OS programs in high energy physics, fusion energy sciences, biological and environmental research, basic energy sciences, and advanced scientific computing, serves, in some small way, every student in the country. These funds support not only research at the DOE Laboratories but also work at a large number of universities and colleges. We believe that basic energy research will also improve U.S. energy security over the long term, through its support for R&D on cellulosic ethanol, advanced battery systems, and fusion.

OTHER DOE PROGRAMS

DOE is also very active in areas outside of R&D. The environmental remediation program that funds the decommissioning and decontamination of old DOE facilities is one such program. The Energy Committee questions the advisability of all of the budget decreases in this program. The coming resurgence in the commercial nuclear arena is likely to deplete the trained professionals available for this program as engineers choose to move to the more stable commercial environment. Congress should

appropriate the budget to ensure that this work is accomplished in an expeditious manner.

CONCLUSION

Members of the ASME Energy Committee consider the issues related to energy to be one of the most important issues facing our Nation. The need for a strong and coherent energy policy is apparent. We applaud the administration and Congress for their understanding of the important role that scientific and engineering breakthroughs will play in meeting our energy challenges. In order to promote such innovation, strong support for energy research will be necessary across a broad portfolio of technology options. DOE research can play a critical role in allowing the United States to use our current resources more effectively and to create more advanced energy technologies.

Thank you for the opportunity to offer testimony regarding both the R&D and other parts of the proposed budget for the DOE. The ASME Energy Committee is pleased to respond to additional requests for additional information or perspectives on other aspects of our Nation's energy programs.

This statement represents the views of the Energy Committee of ASME's Technical Communities and is not necessarily a position of ASME as a whole.

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