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On
Reducing the Cost of the U.S. Nuclear Weapons Complex
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Subcommittee on Energy and Water Development

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Thank you for the opportunity to discuss our vision for *a smaller, safer, more secure and less expensive enterprise that leverages the scientific and technical capabilities of our workforce to meet all our national security requirements*. My remarks today focus on our efforts to transform from a 20th century Cold War nuclear weapons complex into a 21st century nuclear security enterprise. While reducing costs is an objective we strive for, assuring the safety, security and reliability of the U.S. nuclear weapons stockpile without underground nuclear testing remains paramount while changing the infrastructure that supports it.

Before I begin, I want to summarize the tremendous progress made over the past few years in reducing the size of our nuclear weapons stockpile. As you may recall, in 2002, the Moscow Treaty was signed with the objective to reduce the number of our operationally-deployed strategic nuclear warheads to between 1,700 and 2,200 by 2012. In 2004, a Presidential Directive was issued to cut the entire U.S. nuclear stockpile—both deployed and reserve warheads—in half by 2012. This goal was later accelerated and, with the help of Congress, achieved 5 years ahead of schedule in 2007. As of the end of 2007, the total stockpile was almost 50 percent below what it was at the start of this millennium. On December 18, 2007, a decision was announced to further reduce the nuclear weapons stockpile by another fifteen percent by 2012. This means the U.S. nuclear stockpile will be less than one-quarter of its size at the end of the Cold War—the smallest stockpile in more than 50 years. This sends the right message to the rest of the world that the United States continues to lead in its commitment to Article VI of the Nuclear Non-Proliferation Treaty (NPT) and will help create positive momentum heading into the 2010 NPT Review Conference.

I look forward to the upcoming nuclear strategy reviews, knowing that they will help inform Congress and the Administration on a path forward that clearly defines our future direction. As you are aware, the Bipartisan Congressional Commission on the U.S.

Strategic Posture was established by Congress to identify the basic principles for reestablishing a national consensus on strategic policy. The Commission, carrying out its work since last summer with its final report due out in early April 2009, is examining the role of deterrence in the 21st century, assessing the role of nuclear weapons in U.S. national security strategy, and making recommendations as to the most appropriate strategic posture for the U.S. The work of the Commission will likely have a large impact on the subsequent Nuclear Posture Review (NPR).

The Department of Defense (DoD) is expected to begin its NPR shortly. This effort is scheduled to culminate in a report to Congress in early 2010. The NPR will provide an important opportunity to establish a consensus between the Administration and Congress on U.S. nuclear weapons policy and programs. In particular, the NPR will highlight how nuclear forces fit into a broader national security framework, taking into account U.S. military strategy, planning, and programming, as well as providing a basis for arms control objectives and negotiating positions.

A significant part of my job will be to participate in that national debate and to lay out a vision for our nation's nuclear security and non-proliferation goals. This vision is based on the reality that the nuclear debate is not just about warheads and the size of the stockpile. The vision emphasizes that we must increase our focus on nuclear security, or, within the NNSA, of evolving into a national security enterprise.

Where we are Today

I am very proud of the accomplishments of people who, over the preceding decades, enabled us to fulfill our vital stockpile mission. Today, our nuclear security laboratories and production plants ensure that American nuclear weapons are safe, secure and reliable, without the use of underground nuclear testing. The Stockpile Stewardship Program that allows us to maintain a nuclear weapons stockpile continues to evolve and improve with experience that we have gained over the past decade. To date, problems identified in the stockpile are being resolved utilizing Stockpile Stewardship Program scientific tools and design solutions have been incorporated into warhead Life Extension Programs (LEPs). This would not have been achieved without the high-caliber staff with access to world-leading science, technology, and engineering facilities. Continued assessment and certification without underground nuclear testing continues to be a grand challenge. With the end of the Cold War and the dawn of the 21st Century, our national security investments in support of strategic deterrence must now advance to address an unpredictable international environment, persistent proliferation dangers, and emerging nuclear capabilities in other areas of the world that could threaten vital American and allied interests and international peace and security.

Today, one of our biggest challenges is the absence of a national consensus on the current and future role of our nuclear deterrent or on the implications of our nuclear posture for U.S. nonproliferation obligations/objectives. We must ensure our evolving strategic posture places the stewardship of our nuclear arsenal, nonproliferation programs, missile defenses, and the international arms control objectives into one comprehensive strategy that protects the American people and our allies.

The core capabilities and expertise in our nuclear security enterprise, developed over six decades, will contribute even more to this comprehensive strategy in the future. To date, our stockpile stewards and stewardship tools have:

- Enabled critical global nuclear threat reduction efforts,
- Supported nonproliferation, arms control, and nuclear counterterrorism advancements, and
- Contributed to a broad array of national security goals well beyond nuclear weapons.

To fulfill our responsibilities, we must actively exercise certain capabilities requisite to the retention of skills critical to our nuclear deterrent. These include the capabilities to design and certify nuclear warheads at facilities that apply leading-edge computational, experimental, and other science-based competencies; to manufacture essential weapon parts, such as plutonium and uranium components, in safe, responsive and less-costly production plants; and to safely and securely assemble, disassemble, and transport warheads and their components as needed to support our surveillance, life-extension, and dismantlement objectives.

These capabilities support many more U.S. national security requirements than the direct needs of the nuclear weapons stockpile. For example, these capabilities provide critical support to nuclear counter-terrorism and incident response activities. NNSA gets an increasing number of requests for support both nationally – from the Department of Homeland Security (DHS), Federal Bureau of Investigation (FBI) and other federal, state and local law enforcement and emergency response agencies – and internationally. To meet the increasing demand for nuclear and radiological experts, NNSA relies on staff who are resident at nuclear security enterprise sites, particularly the nuclear security laboratories. These personnel provide the core expertise for emergency response and nuclear counter terrorism programs. Moreover, the expertise that is resident in the laboratories is a key element in the development of new equipment and operational techniques that counter-terrorism experts depend on for maintaining their state-of-the-art response capabilities.

However, the nuclear security enterprise remains at a crossroads. While we are meeting safety, security, and basic Department of Defense (DoD) requirements today, the present enterprise is too inefficient, too old, and too costly to sustain without changes. Special nuclear materials (SNM) are present at more sites than we believe necessary, and while we are already taking steps to consolidate these materials, more remains to be done. After September 11th, security has been enhanced and SNM has become more and more expensive to secure. Some facilities, sized to support a large Cold War-era stockpile, are no longer necessary or affordable. Without transformation, ever-increasing funds will be required to secure a greater perimeter than needed, maintain more square footage than is efficient, and sustain facilities well beyond their economic lifetimes. We need to dispose of hundreds of out-dated buildings. We need to accelerate the fundamental

transformation of our nuclear security enterprise over the next 10 years to sustain essential capabilities and to assure a safe, secure and reliable nuclear deterrent -- one that does not require underground nuclear testing; that resolves current stockpile and production challenges; and preserves our deterrent with fewer weapons.

Shaping the Future

NNSA has proposed a planning scenario for the future nuclear security enterprise. Our vision for the future remains a *smaller, safer, more secure and less expensive enterprise that leverages the scientific and technical capabilities of our workforce to meet all our national security requirements*, and to actualize this vision our objective is to transform as rapidly as practical, with many actions being completed over the next 10 years. These efforts will lead to the creation of an enterprise providing benefit to all entities that have a role in protecting America's security interests.

Our future deterrent will be based upon the *capability* and *flexibility* to respond to varying national security situations. Given the smaller stockpile expected in the future, the nuclear security enterprise of tomorrow will be more defined by the capabilities that must be sustained rather than by specific throughput capacities that must be achieved. Our vision of the enterprise is critical not only to accomplish our nuclear weapons mission, but also to perform our work in the areas of non-proliferation, nuclear incident response, nuclear forensics, and support to the intelligence community. Our approach to achieve this vision rests on four pillars:

- Transform the nuclear stockpile through the Stockpile Stewardship Program in partnership with the Department of Defense,
- Transform to a modernized, cost-effective nuclear security enterprise to support needed capabilities in our physical infrastructure,
- Create an integrated, interdependent enterprise that employs best business practices to maximize efficiency and minimize costs, and
- Advance the science and technology base that is the cornerstone of our nuclear deterrence and remains essential for long-term national security.

Changes have been underway for some time. Past transformational activities include closing the Pinellas, Florida plant and consolidating non-nuclear operations at our Kansas City Plant; closing our pit production facility at Rocky Flats, Colorado; closing operations at Mound, Ohio; and, ending special nuclear material production at Hanford, WA, Oak Ridge, TN, and Savannah River, SC. Also with support from Congress, we initiated development of major new research and development (R&D) facilities, such as the National Ignition Facility, required to support our Stockpile Stewardship Program without the use of underground testing. These earlier actions started the process of changing the face of our nuclear security enterprise.

One recent example of continuing progress in changing the face of the nuclear security enterprise is completion of the process to help us evaluate the restructuring of our SNM

and R&D facilities. This process was informed by a *Complex Transformation Supplemental Programmatic Environmental Impact Statement*, or “SPEIS,” and thousands of pages of business case analyses openly shared with the public. One of our primary objectives was to restructure facilities containing large quantities of SNM that are costly to secure. Restructuring of major R&D facilities was also an objective in order to eliminate unnecessary and costly redundancy across the enterprise. More than two thousand people participated in the more than 84 hours of public meetings held last year as part of this environmental assessment process. We received more than 100,000 comment documents on our proposed plans. As selected through the process, production “centers of excellence” for plutonium, uranium, tritium, and assembly/disassembly of weapons will be created to support the nuclear security mission.

To preserve intellectual competition and robust, rigorous peer review, two independent design/certification “centers of excellence” will be maintained for nuclear development and assessment. The process confirmed the need to reduce the amount of space protected by high-security perimeters, the acreage of testing sites, and square footage of buildings in today’s enterprise. Also, the process affirmed that the facilities providing our future warhead stewardship and production capabilities need to be modern, safe, and secure. Finally, the enterprise of the future will be integrated and interdependent to apply leading-edge science and technology to maintain the nuclear security capabilities that are essential to our nation.

In addition to the fundamental technical challenges of maintaining a nuclear deterrent, the costs simply to maintain the *current* physical infrastructure continue to rise; we cannot afford the status quo. Our challenge is to *move from a nuclear complex designed for the Cold War to a 21st century enterprise that is at the forefront of science and technology and responsive to our current and future nuclear security requirements*. Several of the specific challenges we face are:

- Our uranium facilities date back to the Manhattan Project of the 1940s. Securing these facilities against terrorist threats, as well as addressing safety basis deficiencies, is increasingly difficult and costly. Future nuclear security mission work will require a uranium capability. For example, uranium facilities in Oak Ridge, TN, where our warhead dismantlement work is accomplished, are vital to support the Naval Nuclear Propulsion mission. The sooner that the existing, antiquated facilities are replaced, the sooner we will be able to realize the full security, safety and cost benefits of consolidating uranium activities into a smaller security and facility footprint.
- Our newest plutonium facility is thirty years old and one Los Alamos research building (Chemistry and Metallurgy Research) dates from the early 1950s and has served well beyond its economic lifetime. A plutonium capability is a core competency that must be retained. Independent of the quantity of pits needed in the future, we need the Chemistry and Metallurgy Research Replacement – Nuclear Facility to consolidate our plutonium capabilities as we (1) remove Category I/II quantities of plutonium from Lawrence Livermore National Laboratory’s “Superblock,” (2) close the existing Chemistry and Metallurgy

Research (CMR) facility, and (3) consolidate plutonium operations within Los Alamos. Sustaining this capability is both complex and technologically challenging. In addition, maintaining a capability means maintaining the skills of the people who understand plutonium, including both plutonium research and component manufacturing. In the end, we are best served by exercising the capability to conduct advanced plutonium research and to manufacture plutonium components in facilities designed to meet 21st Century security, safety and health requirements.

- Security, both physical and cyber, will continue to require substantial resources unless we move away from maintaining a Cold War infrastructure. The current enterprise, including some Manhattan Project facilities, is not optimized to provide both a robust and cost-effective security posture.
- Similarly, assuring the nuclear safety of our enterprise will become increasingly challenging and more costly until we replace aging facilities with new ones built to modern standards with more engineered safety features. Thus, replacing Cold War-era uranium and plutonium facilities is a key element of our long-term strategy to enhance nuclear safety and security at a sustainable cost.

Our Most Important Resource - People

Our actions to achieve our vision must include much more than our physical infrastructure. We must also address our most important resource--our people. We are able to solve complex problems and improve on our national security capabilities because we have scientific and technical talent beyond comparison. The people at our nuclear security laboratories and production plants are truly world leaders in the science and technology that sustain our nuclear deterrent that helps keep America safe from hostile threats. Enabled by our core weapons-related programs, these same individuals are able to apply their skills and experience in other areas of national security importance, such as maintaining state-of-the-art emergency response capabilities, nonproliferation research and development, nuclear forensics, threat reduction technology, and analytical nuclear counterterrorism support to the intelligence community.

Maintaining the science and technology base provided by personnel at our nuclear security laboratories and plants is essential. For more than a decade, a comprehensive science-based approach – the Stockpile Stewardship Program – has been the foundation for the continued viability of the stockpile. While focusing on this core weapons mission, people at our labs and plants have also provided many technological solutions to broader national security challenges. These solutions were derived from the capabilities developed as part of our weapons mission. The scientific capabilities resident in our highly-skilled workforce and infrastructure are a unique and very valuable national resource.

For example, our Defense Nuclear Nonproliferation program also uses the specialized technical experts and capabilities of the nuclear security enterprise to support its international nuclear nonproliferation mission. Specific examples include:

- Utilizing technical expertise and assessments to support NNSA's statutory export control obligations through technical export license reviews,
- Employing material attractiveness studies; security measures, practices, and assessments; equipment-testing capabilities; and technical and practical know-how in support of nuclear and radiological security programs,
- Leveraging weapons program-facilitated resources to advance our understanding of technical issues and impacts associated with potential future arms control monitoring and verification activities, and
- Incorporating lab-based technical assessments and nuclear weapons expertise into efforts to mitigate programs of concern such as Iran's and North Korea's.

As we look to updating and reducing the cost of maintaining our nuclear security infrastructure, we need to be vigilant in order to prevent any unintended weakening of our scientific foundation. However, we believe that the greatest potential for long-term damage to our scientific capabilities arises from taking no action. Simply stated, the overhead costs of maintaining our existing infrastructure are just too large, and are growing. Over time, this reduces the funds available for staffing levels required for direct mission work including our science base. We must selectively fund some near-term capital investments to solve this problem for the long-term.

Over the past two years we have increased our science and engineering planning to ensure that we protect essential scientific capabilities during consolidation and change. We recently announced a "Laboratory Vision for the Future" to address some of these concerns. I appointed a senior science advisor, who reports directly to me, to focus on sustaining our science base and the people that are the foundation of it. We are actively seeking strategic partnerships with other Department of Energy entities and federal agencies to better leverage and sustain critical competencies at our laboratories.

Why Transform Now – Why Not Wait?

Maintaining required nuclear security capabilities has a greater impact on the minimum size of our facilities and workforce than throughput capacity. Neither our workforce numbers nor facility square footage scale linearly with the size of the stockpile. In today's era of small stockpiles, the required square footage in an up-to-date facility for a minimum, essential capability frequently provides sufficient capacity to meet our future requirements. For example, the Uranium Processing Facility (UPF) is being designed to provide minimum essential capabilities that by their very existence in a modern facility are able to support the likely range of future stockpile projections. This basic facility is also instrumental in consolidating the current uranium missions for Naval Reactors fuel production, Defense Nuclear Nonproliferation's highly-enriched uranium blend-down, and work for others, including medical isotope production. Because our focus is on sustaining and modernizing a set of efficient production capabilities and not on establishing a specified production rate, we are confident that many changes in the infrastructure can proceed while a more precise size and composition of our stockpile is defined in the coming years.

Reducing Costs While Going Forward

Realigning our capital and business infrastructure takes time and some initial investments must be made in replacement facilities or business processes before significant savings are realized. In the long-term, this realignment will reduce staffing and overall costs with much less impact on capabilities by eliminating maintenance on buildings no longer needed, security on unnecessary fence lines, or inefficient business practices. Based on extensive business evaluations that have been shared with the public, our proposed transformation path offers the lowest overall cost and risk going forward. That is why we are planning to move forward with preparations for infrastructure changes where costs are not dependent on the size or composition of our future stockpile. As the reports of the Bipartisan Congressional Commission on the U.S. Strategic Posture and subsequent Nuclear Posture Review are completed this year, we will continue to look for opportunities to further reduce costs.

We propose to implement transformation within our budget projections, assuming, of course, that savings from early transformation actions (e.g., supply chain management improvements, SNM consolidation, and non-nuclear production transformation) are available to be reinvested. We propose to pay for transformation through a combination of the following:

- Infrastructure savings through footprint reductions, replacement of buildings that are long past their economic lifetimes, and updated cost-sharing models for work-for-others customers,
- Reduced overhead costs through contract reforms, improved risk management strategies, greater business practice uniformity, improvements in product assurance processes, and commodity purchase savings through a supply chain management center,
- Review by DoD and Department of Energy of alternative stockpile weapons mixes,
- Reductions in staff supporting weapons activities through attrition and reassignment to other national security missions, and
- Optimization of federal staffing enabled by contract reform and improved line oversight of contractor assurance systems.

In short, these changes require us to reform our current business practices and consolidate the nuclear security enterprise while we ensure that our most important resource – our people – are energized and challenged.

What if We Don't Transform?

What will happen if we do not transform and just maintain the status quo? The short answer is *we will reach the point where NNSA will be unable to perform America's nuclear security mission, including maintaining the nuclear deterrent*. Every year the costs to maintain, operate and secure our physical infrastructure continue to rise. The

JASONS, an independent group of scientists that advises the government, the Defense Nuclear Facilities Safety Board (DNSFB), the Defense Science Board and the Secretary of Energy Advisory Board have all issued reports or findings over the past several years highlighting the need for changes in NNSA and the nuclear security enterprise. Delay in beginning this phase of transformation will only increase the costs and risks of maintaining the nuclear deterrent.

We cannot continue to do 21st Century national security business with a 50-year-old Cold War infrastructure. The need for sustaining future plutonium and uranium capabilities is without question. One common thread among all these experts is the agreement that we will need these capabilities to maintain our nuclear deterrent. Take the 50-year-old Chemistry and Metallurgy Research (CMR) Facility at Los Alamos, for example. The DNSFB has clearly stated that the CMR has significant safety issues which cannot be addressed in the existing structure. Similar issues exist at Y-12 with regards to Building 9212, which currently houses many of our legacy uranium processing operations. The country can not afford to wait any longer.

Conclusion

As Administrator, I am responsible for sustaining our capabilities that support the Nation's commitment to maintain the lowest number of nuclear weapons consistent with U.S. national security requirements. Since my first day as acting Deputy Administrator for Defense Programs, I have taken a long hard look at the nuclear security enterprise, and where we need to be. I am convinced that what I have outlined here is the best path. And I also feel that the need for change is urgent. We must stop pouring money into an old, Cold War complex that is too big and too expensive.

This will not be easy, but the key to successfully meeting our mission is to ensure that we become a *smaller, safer, more secure, and less expensive enterprise that leverages the scientific and technical capabilities of our workforce to meet all our national security requirements*. We need buildings, methods and materials that are safer for our workers than those used during the Cold War.

Our dedicated workforce is the key to transformation and its success. They will be the agents of transformation and their insights, experience and proven dedication will be needed to carry it out. Their expertise constitutes a key element of our nation's national security. In the end it all comes down to people and unsurpassed technical capabilities. It comes down to maintaining and attracting the best people in this country, doing incredibly challenging and important work for our Nation's security. And it comes down to good stewardship, retiring large Cold War-era facilities and modernizing the infrastructure that our people rely on for "Getting the Job Done."

Thank you, I'll be happy to take your questions.