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Chairman Hobson, Representative Visclosky and members of the Committee, thank you for the opportunity to appear before you today to discuss our plans to revitalize and transform NNSA's nuclear weapons infrastructure to make it fully responsive to national security needs. In this effort, we have benefited greatly from the work of the Secretary of Energy's Advisory Board (SEAB) Task Force on the Nuclear Weapons Complex Infrastructure recently chaired by Dr. David Overskei. I will report today on our plans to implement several of the Task Force's recommendations.

Introduction

The Department is committed to ensuring the long-term reliability, safety and security of the nation's nuclear deterrent. Stockpile stewardship is working; the stockpile remains safe and reliable. This assessment is based not on nuclear tests, but on cutting-edge scientific and engineering experiments and analyses, including extensive laboratory and flight tests of warhead components and subsystems. Each year, we are gaining a more complete understanding of the complex physical processes underlying the performance of our aging nuclear stockpile.

To assure our ability to maintain essential military capabilities over the long term, however, and to enable significant reductions in reserve warheads, we must make progress towards a truly responsive nuclear weapons infrastructure as called for in the Nuclear Posture Review (NPR). The NPR and its follow-on assessments have led to conceptual breakthroughs in our thinking about nuclear forces, breakthroughs that have enabled concrete first steps in the transformation of those forces and associated capabilities. Very importantly, the NPR articulated the critical role of the defense research and development (R&D) and manufacturing base, of which a responsive nuclear weapons infrastructure is a key element, in the NPR's New Triad of strategic capabilities. We have worked closely with the Department of Defense (DoD) in establishing the following guidelines for stockpile and infrastructure transformation:

- ensure long-term safety, reliability and security of the nation's nuclear deterrent,
- support current stockpile while transforming to a future stockpile and infrastructure,
- execute the Reliable Replacement Warhead (RRW) program to enable transformation to a responsive infrastructure,
- respond on appropriate timescales to adverse geopolitical change, or to technical problems with warheads or strategic delivery systems, and
- provide opportunities for a smaller stockpile to meet the President's vision for the lowest number of warheads consistent with the nation's security.

Last Spring, in testimony to the Congress, Amb. Brooks described NNSA's emerging 2030 vision for a transformed nuclear weapons stockpile and supporting infrastructure, both enabled by RRW concepts. Today, I will address concrete steps that this Department is taking to realize this vision and do so in the context of recommendations from the SEAB Task Force which have greatly influenced our thinking on transformation.

Success in realizing our vision for transformation will enable us to achieve over the long term a smaller stockpile, one that is safer and more secure, one that offers a reduced likelihood that we will ever again need to conduct an underground nuclear test, one that reduces the nation's ownership costs for nuclear forces, and one that enables a much smaller but also much more responsive nuclear infrastructure. Most importantly, this effort will go far to ensure a credible deterrent for the 21st century, thus reducing the likelihood we will ever have to employ our nuclear capabilities in defense of the nation.

DOE's Response to the Recommendations of the SEAB Task Force

At the request of this Committee, the Secretary empanelled a Task Force under the SEAB, chaired by Dr. Overskei, to assess the implications of Presidential decisions on the size and composition of the stockpile; the cost and operational impacts of the new Design Basis Threat (DBT); and the personnel, facilities, and budgetary resources required to support a smaller stockpile. The review evaluated opportunities for the consolidation of special nuclear materials (SNM), facilities, and operations across the nuclear weapons complex so as to minimize security requirements and the environmental impacts of continuing operations.

The SEAB Task Force concluded that: (1) the status quo is neither technically credible nor financially sustainable; (2) the Cold War stockpile should be replaced with a sustainable stockpile; (3) NNSA should complement past investment in the three design labs with investment in a modern 21st century production center; and (4) consolidation of SNM is feasible and will save money and reduce DBT risk. These insights and associated recommendations have not only guided our thinking on transformation, but have provided concrete, practical steps that in large measure we have incorporated into our overall plan for 2030. We have carefully analyzed the Task Force's key recommendations and discuss them briefly here; several are addressed in more detail later in this statement.

We agree with the Task Force's recommendation for the immediate design of a Reliable Replacement Warhead (RRW). Two teams from our nuclear weapons labs—one from Los Alamos and one from Livermore, both supported by Sandia—are engaged in an RRW design competition that will be completed later this year. If RRW is technically feasible, we will seek authorization to proceed to engineering development and production.

The Task Force recommends that NNSA aggressively pursue dismantlement as part of deterrence. We agree and we are. Accelerated warhead dismantlements help to demonstrate a responsive infrastructure, assure other nations we are not building up our stockpile, and reduce the security risks associated with safeguarding retired weapons.

The Task Force recommends that the Department establish an Office of Transformation to serve as agent for change. As a result, NNSA is creating such an office within Defense Programs both to drive change and lead nuclear weapons complex transformation.

The Task Force recommends that we manage risk more effectively in our R&D and production activities by employing cost-benefit analysis and risk-informed decisions. We agree this is a key issue for transformation. By being too risk averse, we hurt productivity at our facilities without improving safety and security. Rather, by implementing methods to better manage risk, including analysis of the costs and benefits of the policies and procedures for ensuring safe and secure operations at our facilities, we will get the job done and do so safely and securely.

There are two key recommendations from the Task Force with which we partially agree, but differ on specifics. The most sweeping recommendation was for DOE to establish, by 2015, a Consolidated Nuclear Production Center (CNPC) to be the single site for all R&D and production involving significant amounts (i.e., Category I/II quantities) of SNM. The CNPC would provide a production capacity of, among other things, about 125 pits per year to the stockpile. We generally agree with the stated production capacity requirements, but disagree on a single site for all Cat I/II SNM-related R&D and production. Our approach will leverage previous and ongoing investments in the current production complex to establish distributed production centers of excellence. It includes transition of all R&D and production involving Cat I/II quantities of plutonium (except sub-critical experiments at the Nevada Test Site) to a single site—the so-called consolidated plutonium center—in the early 2020s.

Following its logic, the Task force also urges consolidation of all Category I/II quantities of SNM to the CNPC as a means of reducing DBT and security capital costs. We strongly agree with the principle of SNM consolidation but, in our 2030 vision, we plan to consolidate SNM to fewer sites, and fewer locations within sites, but not to a single site.

The Task Force has contributed valuable insights that have reinforced the urgency of changing course. Among other things, it called for a more integrated, interdependent nuclear weapons enterprise to support a transformed nuclear deterrent. In response, we are seeking improved ways to achieve such an enterprise. In the near-term, we will add incentives to current contracts to promote integration and interdependence, working towards fewer and more standard contracts and establishing more uniform technical and business practices where appropriate.

What do we mean by "responsive?"

What do we mean by "responsive nuclear weapons infrastructure?" By "responsive" we refer to the resilience of the nuclear enterprise to unanticipated events or emerging threats, and the ability to anticipate innovations by an adversary and to counter them before our deterrent is degraded. Unanticipated events could include complete failure of a deployed warhead type or the need to respond to new and emerging geopolitical threats.

The elements of a responsive infrastructure include the people, the science and technology base, the facilities and equipment to support a right-sized nuclear weapons enterprise as well as practical and streamlined business practices that will enable us to respond rapidly and flexibly to

emerging needs. More specifically, a responsive infrastructure must provide proven and demonstrable capabilities, on appropriate timescales, and in support of DoD requirements, to:

- Ensure needed warheads are available to augment the operationally deployed force,
- Identify, understand, and fix stockpile problems,
- Design, develop, certify, and begin production of refurbished or replacement warheads,
- Maintain capability to design, develop, and begin production of new or adapted warheads, if required,
- Produce required quantities of warheads,
- Dismantle warheads, and
- Sustain adequate underground nuclear test readiness.

We have worked closely with the DoD to establish goals for "responsiveness," that is, timelines to address stockpile problems or deal with new or emerging threats. For example, our goal is to understand and fix most problems in the stockpile within 12 months of their discovery. Alternatively, we seek an ability to design, develop, certify, and begin production of refurbished or replacement warheads within 48 months of a decision to begin engineering development. In both cases, these timelines would restore us to a level of capability comparable to what we had during the Cold War. These goals will help guide our program by turning the concept of responsiveness into a measurable reality.

Today's nuclear weapons infrastructure and how we got where we are

Today's nuclear weapons enterprise consists of eight, geographically separated sites that comprise the R&D and production capabilities of the complex. There are three nuclear weapons design laboratories: Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL) and Sandia National Laboratories (SNL). In addition, numerous R&D activities, including sub-critical experiments, are carried out at the Nevada Test Site (NTS). The production complex, which has undergone significant downsizing since the end of the Cold War, consists of the following "one of a kind" facilities: the Y-12 Plant (uranium and other components), Pantex Plant (warhead assembly, disassembly, disposal, HE components), Kansas City Plant (KCP) (non-nuclear components), and Savannah River Site (SRS) (tritium extraction and handling). In addition, production activities for specific components occur at two national labs: Sandia (neutron generators) and Los Alamos (plutonium/beryllium parts, detonators).

Each of these sites, with the exception of KCP, routinely conduct operations with substantial quantities of plutonium, or highly-enriched uranium, or both. War reserve nuclear warheads are assembled at Pantex. As such, these are some of the most sensitive facilities in the United States. The increased anticipated threats to the physical security of weapons-usable nuclear materials, post 9/11, have led to enormous increases over the past five years in the costs to secure the complex. Any approach to transformation must address this problem.

Budgets for nuclear weapons programs declined precipitously following the end of the Cold War, leading to a decline of the nuclear weapons enterprise. Sites were closed, downsized, or consolidated, and restoration of capabilities at new sites took longer than planned. The lack of new requirements on which to justify the cost of modernizing production capabilities (indeed, the cancellation of several ongoing warhead development programs) coupled with significant

workforce attrition led to loss of key production capabilities needed to sustain the nuclear weapons stockpile into the future. The introduction of new environmental and safety standards and regulations, along with the requirement to clean-up facilities no longer needed, increased the costs of doing business and limited productivity for any work that continued.

These factors, combined with the 1992 moratorium on underground nuclear testing, forced the adoption of a new strategy. We would not continue the Cold War practice of replacing weapons in the stockpile every 15-20 years; rather, we would emphasize science and technology in seeking to extend the life of warheads in the existing stockpile beyond their originally planned lifetime. This was the genesis of the program called science-based stockpile stewardship whose major focus is predicting the effect of changes in an aging stockpile, providing a readiness posture for refurbishing weapons as needed, and developing tools to assess and accept weapon component changes.

Because we had, during the 1980's, just completed a cycle of warhead modernization and production, there was no strong driver to sustain production capabilities. The limited funding available was focused primarily on the R&D complex in order to preserve the scientific and technical capabilities that would be required to certify the future stockpile. As a result, the production complex continued to be seriously underfunded and key capabilities further degraded.

As a result of decisions taken during the Cold War, today's stockpile consists of highly-optimized warheads designed to tight specifications (e.g., maximum explosive yield with minimum size and weight). This was the most cost effective way to meet then existing military requirements but also led to warheads that were designed relatively close to so-called "cliffs" in performance. It also forced the use of certain hazardous materials that, given today's health and safety standards, cause warheads to be more costly to maintain and remanufacture. Maintaining the capability to produce these materials causes the supporting infrastructure to be larger and more costly than it might otherwise be, and certainly less responsive. If we were designing the stockpile today under a test moratorium and to support an operationally-deployed force in which most delivery systems will carry many fewer warheads than their maximum capacity, we would manage technical risk differently, for example, by "trading" size and weight for increased performance margins, enhanced safety and security, system longevity, and ease of manufacture and certification.

Despite efforts over the past five years to restore key capabilities, our current nuclear weapons infrastructure is not responsive. We had been unable to produce certain critical components for warheads (e.g., plutonium parts, tritium) for many years. And today's business practices—in particular, the way we manage risk in authorizing potentially hazardous activities at our labs and plants—have become ineffective, significantly degrading productivity at these facilities. The story is not all bad, however, as we are making progress in several areas:

- We restored tritium production in the Fall of 2003 with the irradiation of special fuel rods in a Tennessee Valley Authority reactor, and anticipate that we will have a tritium extraction facility on-line in FY 2007, well in advance of need.

- We have largely restored uranium purification capabilities at our Y-12 plant, and are modernizing other capabilities so that we can meet demanding schedules of warhead life extension programs (LEPs), including, significantly, the B61 and W76 LEPs which are scheduled to begin production in 2006 and 2007 respectively.

- We are on track to deliver, in 2007, a certified W88 pit to the stockpile and restore a small (10 pit/year) war reserve production capacity at LANL.

- We have taken steps to recruit and retain a strong workforce with the right skills for the focused mission.

- We are devoting substantial resources to restoring facilities that have suffered from years of deferred maintenance.

- We seek improved ways to manage risk including rigorous analysis of the costs and benefits associated with the means for ensuring safe and secure nuclear operations.

That said, much remains to be done to achieve stockpile and infrastructure transformation. Among other things, we must maintain the strong scientific and technical base that is the foundation of stockpile stewardship, while continuing efforts to restore the production complex. Our challenge is to find ways to carry this out that reduce duplication of effort, support consolidation of facilities and SNM, and promote more efficient operations complex-wide.

Concrete First Steps to the 2030 Stockpile and Infrastructure

The "enabler" for transformation is our concept for the RRW. The RRW will benefit from relaxed Cold War design constraints that maximized yield to weight ratios. This will allow us to design replacement components that are easier to manufacture; are safer and more secure; eliminate environmentally dangerous, reactive and unstable materials; and increase design margins thus ensuring long-term confidence in reliability and a correspondingly reduced chance we will ever need to conduct a nuclear test for stockpile confidence. RRW, we believe, will provide enormous leverage for a smaller, more efficient and responsive infrastructure and opportunities for a smaller stockpile.

The 2030 nuclear weapons complex that we envision will thus support a smaller stockpile consisting of warheads employing designs and technologies developed in the RRW program as well as legacy warheads from the Cold War that have been refurbished in warhead life extension programs. By that time, we will have gained enough experience with RRW to be in a position to address whether that approach could provide sufficient stockpile diversity to permit evolution to a stockpile based entirely on RRW designs. If this is the case, it will likely still take another decade or more to complete that transition. Thus we must be prepared to support some number of legacy warheads, and their associated LEPs, even as we seek to evolve to a stockpile consisting primarily of RRW designs.

The envisioned 2030 infrastructure to support the stockpile would have the following characteristics:

- a strengthened, but consolidated R&D infrastructure;
- a modern production complex with a consolidated plutonium center and increased production throughput;
- consolidation of Cat I/II materials to fewer sites and fewer locations within sites, and
- streamlined business practices, including a more effective approach to managing risks inherent to our operations.

The future *R&D complex* would retain two independent centers of excellence for nuclear warhead design/development located at LANL and LLNL, each supported by Sandia for non-nuclear component design. At the same time, following the recommendations of the SEAB Task Force, we plan to eliminate redundant capabilities and programs reflected in today's complex. For example, starting this year, major scientific and experimental facilities (e.g., Omega, Z, NIF, DARHT) will become national, shared user facilities managed to benefit the entire complex. Plutonium R&D involving Cat I/II quantities, currently carried out at both LLNL and LANL, would be relocated to a single-site for plutonium R&D and production—the so-called consolidated plutonium center. We intend to cease operations at the Tonopah Test Range by the end of 2009 and exploit non-NNSA operated ranges to conduct required flight tests. In the 2020's, large-scale hydrodynamic test facilities would transition to the NTS. In eliminating redundancies, however, we must ensure that intellectual competition required for truly independent peer review and assessment (critically important for an anticipated continued moratorium on nuclear tests), and essential capabilities for nuclear weapons science and technology, are preserved.

The future *production complex* will be smaller than today's complex, distributed geographically, and modernized with manufacturing, production, assembly/disassembly facilities and equipment that employ 21st century "cutting edge" technologies. Its warhead production capacity will be modest when compared with the capacity we had during the Cold War—more than a factor of ten below Cold War levels. The following describes our proposed plan for the 2030 complex.

- **Highly-Enriched Uranium (HEU) operations:** All R&D and production involving Cat I/II quantities of HEU would be carried out at a single site located at Y-12. Storage of HEU, currently distributed at several locations within Y-12, would be consolidated to a single facility on that site—the HEU Materials Facility (HEUMF). All production of HEU parts and secondary assemblies, and associated disassembly of retired components, would be carried out at a single facility that is currently being planned—the Uranium Processing Facility or UPF. When these two facilities are jointly operating, it would permit a major consolidation of activity within Y-12, enabling a substantial reduction in floor space and substantially reduced annual costs for physical security at that site.

- **Plutonium operations:** All R&D (except sub-critical experiments at NTS), surveillance, and production involving Cat I/II quantities of plutonium would be transferred to the consolidated plutonium center. The center would have a baseline production capacity of 125 pits per year net to the stockpile by 2022. The location of the center remains to be determined but it would be situated at an existing Cat I/II site. To support interim pit production needs prior to 2022, the plutonium facility at Tech Area 55 at LANL would be upgraded by 2012 to a production rate of 30-50 war reserve pits per year continuing until

the center can meet the needs of the stockpile. To support plutonium operations at LANL, and to absorb Cat I/II plutonium R&D currently being carried out at Building 332 at LLNL, the Chemistry and Metallurgy Research–Replacement (CMRR) facility would be operated as a Cat I/II facility up to 2022. Once the consolidated plutonium center is operational, all Cat I/II activities at TA-55 and CMRR would be transitioned there.

- **Tritium:** Tritium production and stockpile support services would remain at the SRS.

- **Non-nuclear component production:** Where possible and cost-effective, relatively more non-nuclear components would be purchased from commercial suppliers compared with today. A new, modern and efficient non-nuclear production facility would be in operation by 2012 and sized to produce components and conduct operations that cannot be purchased commercially (e.g. use control components and component final assembly).

- **Warhead assembly/disassembly operations involving HE and SNM:** All weapons assembly and disassembly would be carried out at Pantex modernized for increased throughput for the long-term. The NTS Device Assembly Facility could be employed as a backup for weapon assembly/disassembly to hedge against a single-point failure.

We have come to understand that an infrastructure that is not continuously exercised cannot be responsive. In our vision, therefore, the entire complex would carry out a continuous cycle of research, non-nuclear testing, weapons development, production, certification, surveillance, retirement and dismantlement. This concept, I should add, is also a key element of the SEAB Task Force's vision for the 2030 complex.

Why not a CNPC?

We agree with much of what the SEAB Task Force recommends, except in one critical area—we simply cannot commit to a CNPC at this point, even setting aside the serious question of political feasibility. Let me explain why.

Briefly, the Task Force developed three "business cases" for transforming the nuclear weapons complex, two of which are characterized as "high risk." The preferred "least-risk" option would accelerate site selection, environmental assessment, and CNPC construction leading to initial operation in 2015, seek rapid consolidation of SNM thereafter, accelerate dismantlements, and carry out early implementation of the other major transformation recommendations. According to Task Force estimates, this option would require an additional $1B per year for weapons program activities for the next ten years, leading to a net savings through 2030 of $15B in comparison with the "flat budget" case.

But, accelerating a CNPC will not let us avoid near term spending to restore and modernize production capabilities to meet LEP schedules and support the existing stockpile. Nor is it plausible that a CNPC could be designed, built and operating by 2015. The Task Force underestimates the challenges of transitioning a skilled workforce to a new location, particularly in such unique and highly-skilled jobs as materials processing/component manufacture involving HEU or plutonium. As a result, a CNPC approach would almost certainly lead to substantial delays in completing LEPs, reduced support to the stockpile, and a resulting negative impact on

our nation's deterrent. On the other hand, our approach achieves many of the benefits of the Task Force's approach—consolidation of SNM and facilities, integrated R&D and production involving SNM, aggressive dismantlements—in a way that supports near-term national security needs, is technically feasible, and is affordable over both the near and longer term.

Not "business as usual"

"Business as usual" is not sustainable, will not be successful, and cannot be the path we choose. Indeed, our Complex 2030 vision represents a significant departure from the current strategy. I will illustrate with a few key points.

Progress on RRW

Progress on RRW has been remarkable. Last year, the DoD and DOE jointly initiated an RRW competition in which two independent design teams from our nuclear weapons laboratories—LLNL and LANL both in partnership with Sandia and the production complex—are exploring RRW options. A competition of this sort has not taken place in over 20 years, and the process is providing a unique opportunity to train the next generation of nuclear weapons designers and engineers. Both teams are confident that their designs will meet established requirements and be certifiable and producible without nuclear testing. The program is on schedule—preliminary designs are being completed. An intensive, in-depth peer review process is underway that will lead to selection of a preferred option for engineering development.

Consolidation of Cat I/II SNM

We will start consolidating Category I/II SNM to fewer sites, and to fewer locations within sites, in 2006. We will improve the security posture at our national laboratories by phasing out operations involving Cat I/II quantities of SNM. This includes eliminating the need for a Cat I/II SNM security posture at Sandia by 2008. Our plan is to remove all Cat I/II SNM from LLNL by the end of 2014. By 2022, all R&D/production activities involving Cat I/II SNM would cease in facilities operated by LANL. As that is accomplished, these labs could transition to a common defense industry site security posture with reduced security costs. The consolidated plutonium center, once operational, would host all R&D, surveillance, and manufacturing operations involving Cat I/II quantities of plutonium. The Uranium Processing Facility (UPF) at Y-12 would consolidate existing HEU contained in legacy weapons, dismantle legacy warhead secondaries, support associated R&D, and provide a long term capacity for new secondary production. As a result, Y-12 would reduce its production and SNM storage footprint by about 90%, leading to significantly reduced costs for physical security at that site.

Last year Secretary Bodman formally chartered the Nuclear Materials Disposition and Consolidation Coordination Committee. While individual programs, such as the Office of Nuclear Energy, NNSA, and EM, have their own disposition and consolidation projects, the purpose of this committee is to ensure integration of individual program efforts thus identifying opportunities for resource sharing. The principal mission of the committee is to provide a forum to perform cross-cutting nuclear materials disposition and consolidation planning with the objective of developing implementation plans for consolidation and disposition, as appropriate.

Progress on intra-site consolidation has been made, such as the relocation of plutonium from the Savannah River Site's F-Area to K-Area and consolidation of Hanford materials at the Fast Flux

Test Facility to its Plutonium Finishing Plant. Although, the Department has been less successful in transferring nuclear materials from one site to another -- either for continued programmatic use or for storage pending disposition some progress has been made --. NNSA has recently completed the relocation of Category I/II nuclear materials from the Criticality Experiments Facility at Los Alamos to more secure facilities at Los Alamos and the Nevada Test Site. EM consolidated its surplus plutonium at Rocky Flats to the K Area at the Savannah River Site and Idaho's Highly Enriched Uranium to Savannah River. As long as nuclear materials continue to be stored at multiple sites around the country, safe storage, and proper security must be maintained at each of those sites -- at substantial cost to the taxpayers. In addition, materials located at EM cleanup sites hinder progress of the cleanup of those sites until the materials are disposed of or removed from the site. Consolidation of nuclear materials requires adequate storage space at the receiving site, compliance with all applicable laws, appropriate National Environmental Policy Act analyses, and sufficient transportation resources. Additionally, stakeholder support is also critical, particularly in the State and around the site proposed to receive nuclear materials.

Consolidation of Facilities

In addition to the consolidation described above, NNSA plans to create a new, non-nuclear component production facility by 2012 to significantly reduce infrastructure costs associated with overall non-nuclear production. It plans to cease operations at the Tonopah Test Range further driving cost effectiveness. LLNL would cease Cat I/II operations with plutonium and close the Site 300 hydrodynamic test facility. The NTS would become the only site for large-scale hydrodynamic testing including testing involving significant quantities of SNM and high explosives. As a result of these plans—SNM consolidation, non-nuclear consolidation and the construction of new more efficient, right-sized facilities—by the 2020s, the physical footprint of the weapons complex would be substantially reduced.

Consolidated Plutonium Center

Our plan for a consolidated plutonium center is not based on the concept for a modern pit facility (MPF) but on a far broader and more aggressive concept employing consolidation to a single site of all R&D and production involving Cat I/II quantities of plutonium. It will be a small, modular, and flexible facility. We will be engaging Congress as we develop this concept further including budget profiles. The pit production capacity that we seek through the center is modest when compared to Cold War pit production levels but essential to our long-term evolution to a responsive nuclear weapons infrastructure. Indeed, our need to work with plutonium, and have capacity to manufacture pits in quantity, did not go away simply because Congress zeroed the President's request for the MPF project in the FY 06 budget.

The production capacity that can be established at TA-55—about 30-50 pits per year—is not sufficient to meet anticipated future needs. There are three reasons why we believe this to be true. First, our best estimate of minimum pit lifetime is 45-60 years. That estimate is under review at our national laboratories. Nonetheless, we must anticipate that, as the stockpile ages, we will need to replace substantial numbers of plutonium pits in stockpiled warheads. Second, even if pits were to live forever, we will require substantial production capacity in order to introduce, once feasibility is established, significant numbers of RRW warheads into the stockpile by 2030. We should not assume that RRW could employ pit reuse and still provide

important efficiencies for stockpile and infrastructure transformation. Finally, at significantly smaller stockpile levels than today, we must anticipate that an adverse change in the geopolitical threat environment, or a technical problem with warheads in the operationally-deployed force, could require us to manufacture and deploy additional warheads on a relatively rapid timescale. All this argues for a production capacity that exceeds that planned for TA-55. Indeed, for planning purposes, an annual production capacity of about 125 war reserve pits per year is about right. The SEAB Task Force agrees with this estimate.

Driving the Science and Technology (S&T) Base

A robust scientific underpinning to stockpile stewardship and certification is essential for the long-term future as some legacy Cold War warheads are retained for the next few decades and as the stockpile is transformed via RRW. We must drive the science base even as we seek new efficiencies. In this regard, we will develop a weapons program S&T roadmap by the end of 2007 defining the full set of capabilities needed to sustain the future stockpile. NNSA will partner with the DOE Office of Science, and other national R&D sponsors, on leading edge science and engineering needed both for national security and for broader scientific, technological, and economic competitiveness.

Warhead Dismantlements

We will increase dismantlements planned for FY 07 by nearly 50% compared to FY 06. The Department has committed to increasing average annual warhead dismantlements at the Pantex Plant by 25% and has established an average annual secondary dismantlement requirement at Y-12. More classified detail is available in the March 2006 Dismantlement Report to Congress. Out-year funding in the FY 08 budget submittal will be consistent with the revised plan.

Warhead dismantlements are a key element of our strategy to ensure that stockpile and infrastructure transformation is not misperceived by other nations as "restarting the arms race." We earlier noted that a continued commitment to a nuclear test moratorium is reinforced by our efforts on RRW. In a similar way, our commitment to a smaller stockpile is made concrete by our record of accelerated dismantlements.

Streamlined Business Practices and More Effective Risk Management

We plan to create a fully integrated, interdependent weapons complex with several uniform business enhancements. We will manage risk, rather than seek to eliminate it, by applying risk-analytical techniques to programmatic, safety, security, and environmental decisions. We will make the Phase X/6.X warhead acquisition process more relevant to stockpile and infrastructure transformation. We will move to fewer and more standard Management and Operating (M&O) contracts to capitalize on integration and interdependencies within the complex. In the near-term, multi-site incentives will be added to the current contracts for a nuclear weapons complex with shared risks and rewards. Contracts will reflect a new way of doing business, acquisition activities will be centralized, and all large-scale experimental facilities will become user facilities for the entire complex with committees to review priorities for work.

"Getting the job done"

Over the next 18 months, we will seek to demonstrate that the transformation path I have described today is fully viable. We will continue support to the nuclear deterrent through

successful execution of the planned programs of refurbishment, surveillance, limited life replacement, dismantlement, and other core activities. Among other things we will:

- Eliminate the warhead surveillance backlog by the end of FY 2007,
- Accelerate dismantlement of retired weapons (~50% increase from FY06 to FY07),
- Streamline the safety authorization basis process while ensuring safe nuclear operations,
- Increase Pantex throughput by the end of FY 2006,
- Achieve first production for the B61 LEP in FY 2006, and the W76 LEP in FY 2007,
- Deliver a certified war reserve W88 pit in FY 2007,
- Demonstrate 10 W88 pits per year war reserve production capacity at LANL in FY 2007,
- Extract tritium in 2007 from rods irradiated in a commercial nuclear reactor.

At the same time, we will demonstrate we are moving forward on transformation:

- Complete the RRW study and move forward with concept,
- Begin the National Environmental Policy Act (NEPA) process in 2006 to inform decisions on the 2030 complex,
- Begin to implement plans to ramp up to 30-50 pits per year at LANL by 2012,
- Create an Office of Transformation within Defense Programs in 2006 to lead transformation,
- Acquire, in 2006, a systems engineering and integration contractor (such as being used for managing LEPs) to support, more broadly, NNSA decision-making on weapons,
- Drive uniformity in management of Readiness in Technical Base and Facilities (RTBF) through common work breakdown structure, activity-based costing, and reducing federal management to one program office in 2006,
- Initiate a Supply Chain Management Center at Kansas City by the end of 2007 to centralize some procurement activities consistent with the Task Force's recommendation.

Via these near term actions, the NNSA will strengthen the confidence of the DoD, other key stakeholders, and its own employees that we can achieve our longer-term objectives.

How the FY 07 budget request supports the vision for the 2030 complex

NNSA's FY 07-11 budget proposal continues significant efforts to start us down the path to a responsive nuclear weapons infrastructure. As the "enabler" for transformation, we are requesting a ten percent increase in funding for the RRW program over last year. In addition, various implementation actions for the 2030 strategy are being incorporated into existing program elements that are part of the FY 07 budget request. Examples include:

- Accelerated dismantlements including upgrades to Bldg 12-44 & 12-64 at Pantex,
- Interim pit manufacturing capacity in the pit campaign,
- Shipments to support material consolidation,
- Highly Enriched Uranium Materials Facility (HEUMF),
- Uranium Processing Facility (UPF),
- Initial steps in facility transformation in the RTBF account,
- LANL Criticality Experiments Facility relocation to NTS,

- Component Evaluation Facility at the Pantex Plant.

Our FY 07 budget request is fully consistent with our 2030 vision—"responsive infrastructure" is broken out as a new line in the Directed Stockpile Work budget category. This will partially fund the continuing business case development needed to assure efficient implementation of transformation, as well as immediate start of the NEPA process.

Conclusion

Transformation will, of course, take time. We are starting now with improving business and operating practices, both in the federal workforce and across the nuclear weapons complex, and through restoring and modernizing key production capabilities. Full infrastructure changes, however, may take a couple of decades. The major challenge is to ensure a transition path to the future that is both affordable and feasible while continuing to meet the near-term needs of the current stockpile.

But let me take you forward 25 years when the Administration's emerging vision for the nuclear weapons enterprise of the future has come to fruition. The deployed stockpile—almost certainly considerably smaller than today's plans call for—has largely been transformed. RRWs have relaxed warhead design constraints imposed on Cold War systems. As a result, they are more easily manufactured at fewer facilities with safer and more environmentally benign materials. These replacement warheads have the same military characteristics, are carried on the same types of delivery systems, and hold at risk the same targets as the warheads they replaced, but they have been re-designed for reliability, security, and ease of maintenance. Confidence in the stockpile remains high without nuclear testing because RRW offers substantially increased performance margins and because of our deeper understanding of nuclear phenomena enabled by the stockpile stewardship program and the R&D tools that come with it.

By 2030, according to our vision, the deployed stockpile will be backed up by a much smaller non-deployed stockpile than today. The elimination of dangerous and toxic materials has enabled a more efficient and less costly production complex and obviated the need for large numbers of spare warheads to hedge against reliability problems. The world in 2030 will not have gotten more predictable than it is today. We still will worry about a hedge against geopolitical changes and attempts by others to instigate an arms race. But that hedge is no longer in aging and obsolete spare warheads but in the responsive infrastructure.

The 2030 responsive infrastructure will provide capabilities, if required, to produce weapons with different or modified military capabilities. The weapons design community that was revitalized by the RRW program will be able to adapt an existing weapon within 18 months and design, develop, and begin production of a new design within 4 years of a decision to enter engineering development—goals that were established in 2004. Thus, if Congress and the President direct, we will be able to respond quickly to changing military requirements.

Security remains important in our future world. But the transformed infrastructure has been designed with security in mind. More importantly, new, intrinsic features built into the growing number of RRWs have improved both safety and security. In short, the vision I set forth is of a

world where a smaller, safer, more secure and more reliable stockpile is backed up by a robust industrial and design capability to respond to changing technical, geopolitical or military needs.

This isn't the only plausible future, of course. But it is the one we should strive for. It offers the best opportunity for achieving the President's vision of the smallest stockpile consistent with our nation's security. It provides a hedge against an inherently uncertain future. That's why we are embracing this vision of transformation. We should not underestimate the challenge of transforming the enterprise, but it is clearly the right path for us to take.