

Statement of Dr. David O. Overskei
Chairman of the Nuclear Weapons Complex Infrastructure Task Force
of the
Secretary of Energy Advisory Board
to the
Energy and Water Subcommittee
of the
House Committee on Appropriations
hearing on
the implementation of the Secretary of Energy's Advisory Board (SEAB) Nuclear Weapons
Complex Infrastructure Task Force, July 2005 Report, Recommendations for the Nuclear
Weapons Complex of the Future and the Department of Energy's Plan to transform the
existing weapons complex into the responsive complex of the future.
April 26, 2006

Chairman Hobson, Representative Visclosky and members of the Committee, thank you for the opportunity to appear before you today to discuss the work of the Nuclear Weapons Complex Infrastructure Task Force. I hereby submit my written testimony and request that it be included in the Congressional Record.

Mr. Chairman, as you well know, our Task Force was established as result of a commitment made by the Secretary of Energy to your Committee during testimony on March 11, 2004. This commitment was recognized and mandated in the House Energy and Water Appropriations Bill for FY 2005. Based on the legislative request, in January 2005 the Secretary of Energy requested the Secretary of Energy Advisory Board (SEAB) to form the Nuclear Weapons Complex Infrastructure Task Force (NWCITF) reporting to the SEAB. Our charge was to

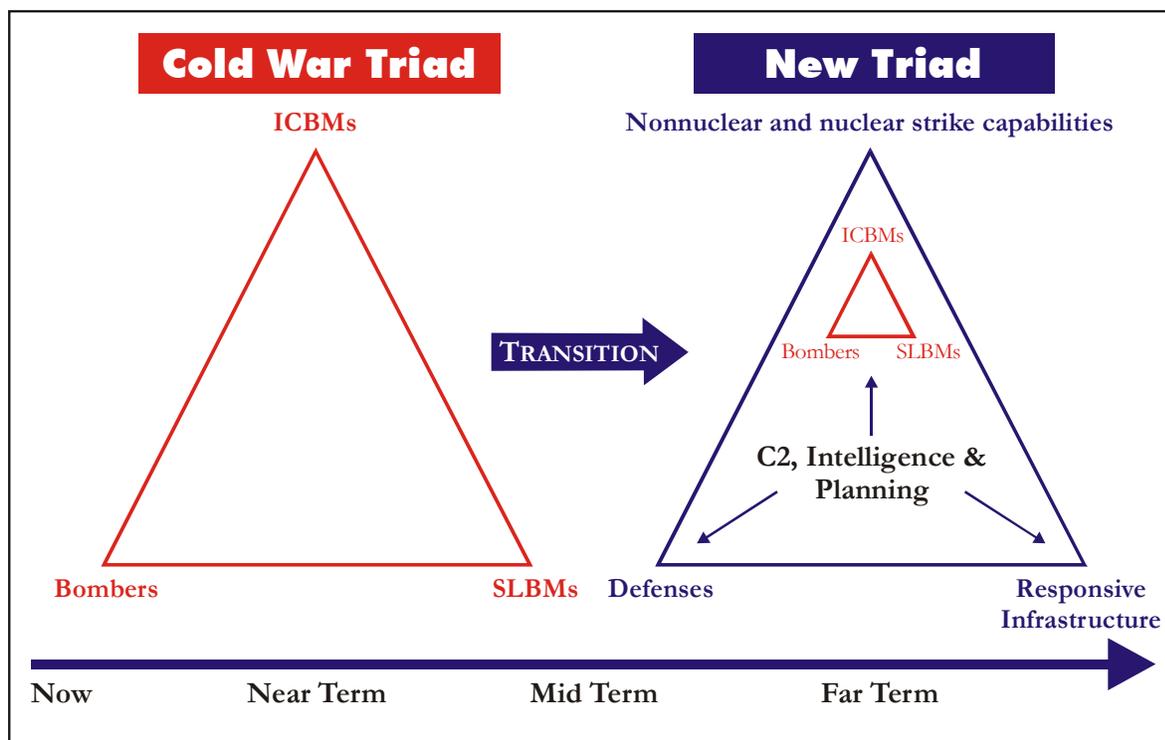
“...gather data, define options and develop recommendations that, if implemented, will create a smaller, modern Complex infrastructure that is responsive to post-Cold War mission requirements.”

Ambassador Brooks, Administrator of the National Nuclear Security Administration provided us with our official terms of reference. He encouraged us to be bold in proposing what we felt would be the best Complex for the Nation's national security, unconstrained by the politics. I and five colleagues, along with four support staff provided by the NNSA, worked extensively from the period of February 2005 until July 2005 to fulfill the charge to the Task Force. We completed our draft report in July 2005 whereupon it was posted on the SEAB web site for public comment. On October 4, 2005, our report was submitted to SEAB for discussion, accepted by the SEAB and sent on to the Secretary of Energy.

Mr. Chairman, we believe that our Task Force report does address the spirit and intent of your legislative direction and does respond to the terms of reference given to us by Ambassador Brooks. Our vision for the Complex of the future does not reflect the desires of all stakeholders. However, we believe that we have articulated a bold, but achievable, vision for the Complex of the future, a Complex that meets this Nation's national security requirements and the needs of all of the Complex stakeholders. I hereby submit our report, Recommendations for the Nuclear Weapons Complex of the Future, for the record.

I begin by discussing our process, because it included a broad range of stakeholders in addition to personnel inside the Complex. We began by identifying the demands and diverse constraints being placed upon the DOE's nuclear weapons Complex. This was achieved by interviewing senior personnel at the National Security Council, the Office of the Secretary of Defense, members of the Nuclear Weapons Council, the Executive Officers and their staff responsible for nuclear weapons systems in the Navy and the Air Force, the Commander of US Strategic Command, the Office of Management and Budget, members of Congress and committee staff who have oversight of the DOE nuclear weapons programs, and senior members of the National Nuclear Security Administration. All of the above were accommodating and generally very forthcoming with information requested. Mr. Chairman, we are also appreciative of the time that you and your staff made available to us, giving us clarification, guidance, and latitude in the report due date.

It is apparent that the demands on the Complex are evolving and sometimes conflicting. The President's directive of a stockpile of 1700-2200 nuclear weapons by 2012 defined a much reduced capacity requirement for the Complex. In addition, the capabilities based deterrence posture, as articulated by the Department of Defense in their New Triad, establishes clear near term mission objectives and performance metrics for the DOE's nuclear weapons complex. In this New Triad, a responsive nuclear weapons Complex and a reliable nuclear weapons stockpile are essential parts of two of the three elements.



We also solicited perspectives from experts who have had direct interaction with the nuclear weapons Complex in the recent past.

Of particular value was our review of the numerous previous studies of the nuclear weapons Complex. Since 1980 there have been more than 12 extensive and detailed studies to evaluate and propose changes to the composition and structure of the nuclear weapons Complex. Sandia National Laboratories provided us with an excellent summary of these past studies. I hereby submit their report for the record since it provides a valuable perspective on the challenges of implementing change in the nuclear weapons Complex. We were sobered by the extent and substance of the previous studies, and the soundness of their recommendations, while noting that many of the previous studies had little apparent impact on the Complex. This gave us pause as to our ability to really affect change.

Task Force observations of the current Complex

With the above as context, we began our visits to the eight sites that currently represent the DOE's nuclear weapons Complex. It is apparent that the Complex is struggling to transition from the Cold War approach and Cold War weapons to a new, more agile Complex. We did not find an integrated unified Complex; rather we found a set of independent laboratories and production plants, individually striving to sustain their past rather than preparing for the future. In particular, from a "customer perspective," the DoD considers the Complex neither productive nor responsive, and none of the stakeholders view the Complex as responsive within the context of the New Triad.

From a capability perspective, the three design laboratories have been upgraded with state-of-the-art design and testing capabilities in advanced computing, simulation and non-nuclear component testing. The science based Stockpile Stewardship Program (SSP) investments have greatly increased our characterization of weapons materials and understanding of nuclear weapons physics. However, the design laboratories have not produced a new design in over fifteen years and struggle to resolve current stockpile issues in a timely fashion.

From a production perspective, the production Complex operates in World War II and early 1950's era facilities, lacking in modern production technology and processes. The production sites of the Complex routinely fail to meet current warhead refurbishment requirements. A DOE "modernization-in-place" plan, presented to the Task Force and still being proposed to the Congress, sustains the old sites, augmented with a few dispersed modern facilities. This approach will not result in a responsive 21st century nuclear weapon complex or production capability that is needed, and will be discussed in more detail later.

From a security perspective, significant quantities of plutonium and highly enriched uranium, Special Nuclear Materials (SNM), are located at six of the eight Complex sites. The security costs alone are rapidly approaching \$1B per year, largely driven by the mandated and arbitrary response to the Design Basis Threat associated with the presence of SNM or nuclear weapons. Owing to the geography and facility constraints at these six sites, the security measures taken have adverse effects on productivity and responsiveness, and there are no foreseeable bounds on future security costs. A more reasoned approach needs to be considered.

From the management perspective, there is not a unified interdependent nuclear weapons enterprise vision or set of mission priorities. Instead the following was found:

- The Nuclear Weapons Council does not provide the leadership and decisive direction that had been demonstrated in the years prior to the test ban,
- The DoD does not operate as a partner with DOE. The DoD does not provide DOE with unified and integrated weapon requirements, tending to issue requirements with little regard to the potential cost impact on the DOE,
- The DOE management has burdened the Complex with rules and regulations that focus on process rather than mission performance, productivity, and responsiveness. Cost/benefit analysis and risk informed decisions are absent, resulting in a bureaucratic risk-averse posture at all management levels,
- The Complex does not operate as an integrated enterprise with a shared purpose. The physics design laboratories aggressively seek independence rather than cooperative interdependence, resulting in redundant programs and facilities, increasing costs and reducing productivity.

Finally the Cold War stockpile, although safe and reliable, does not have the surety controls or the operating margins that the DoD desires, and that the DOE is capable of providing. The Cold War Stockpile is sustained through an expensive Life Extension Program (LEP), resulting in old weapons (the newest designed in the mid 80s and the oldest a derivative of a 60s design) with some new replacement components. This stockpile is already a legacy that requires an extensive maintenance program, may not be well suited to future threats, and the future maintenance and surveillance cost liabilities are unbounded.

In summary, the Task Force found a Complex neither robust, nor agile, nor responsive, with little evidence of a master plan. However, the Task Force did find a Complex with skilled and talented professionals who seek to carry out the nuclear weapon Complex mission. In addition, the Task Force noted a generation of young professionals entering the Complex because of a sincere desire to participate in sustaining an effective nuclear deterrence for the future, but uninterested in geriatric weapon care.

Task Force Vision for the Complex of 2030

The Task Force recognizes that nuclear weapons are an important part of our current and future deterrence posture. We do not now know, nor can we predict, the composition of the stockpile of the future or any specific weapon characteristic.

Thus, for our analysis, we envisioned a Complex that would support the current stockpile as it evolved to a stockpile comparable in size to the President's directive of 1700-2200 weapons by 2012. A complex that can support that stockpile could of course support a smaller stockpile as well. We also assumed that the ratio between ICBM, SLBM, and air delivery warheads would be comparable to the present ratio, although the actual numbers may be different. The officers

responsible for nuclear weapons in the Air Force, Navy and STRATCOM, and members of OSD confirmed that a Complex that could produce and deliver 125 new weapons to the stockpile each year would meet DoD productivity metrics. For our purposes, we envisioned that the Complex of 2030 would also be dismantling 125 weapons from the stockpile each year, thus a steady state stockpile.

Our vision has the Complex in steady state design, production, and dismantlement. This continuous exercising of all of the Complex capabilities is an essential element of deterrence, critical to our vision of a Complex that contributes to deterrence through its capabilities, not just through the stockpile it produces and maintains. This type of deterrence is different from that achieved by the existence of a reliable nuclear weapon stockpile, since it is the Complex that can respond to the unknown threat to our security, not the stockpile. In keeping with these boundary conditions, we envision a nuclear weapons Complex of 2030 with several key attributes:

Agility - This means a broad based and highly skilled scientific and engineering staff at the design laboratories. This staff would innovate, conceive and test solutions to address any future threat to our national security. Agility lies in the capabilities of the personnel in the Complex, much more so than the facilities, since the facilities of the past may not be relevant to resolving or testing solutions to the threats of the future.

Automated production – The production portion of the Complex would be highly integrated and modernized with automated precision equipment to facilitate rapid transition from concept to prototype to production. The Complex should be capable of adding 125 weapons of any type to the stockpile in any year, with single shift operation.

Responsive – Responsiveness is the ability to meet the national security (as determined by DoD, DHS, NSC) requirements in a timely fashion: 12 months to fix a problem, 18 months to develop a solution to a new military need, 36 months to prototype, 48 months to production of a weapon, and the ability to resume nuclear testing in 18 months. It is felt that these time scales could credibly be further reduced by a factor of two.

We believe that these attributes must be constantly exercised, demonstrated, and tested. Thus, our vision would have the Complex continuously designing, testing, producing and dismantling nuclear weapons on a regular schedule. However, the enabler lies in the Complex management. For the Complex to be an effective contributor to the New Triad of deterrence, it is imperative that the Complex management and leadership organization makes timely decisions that balance risk, benefit, performance, and cost

With such a Complex, it is possible and desirable to replace and dismantle the Cold War Stockpile with approximately 2200 sustainable nuclear weapons of equivalent military characteristics by 2030. These weapons would incorporate advanced surety and use controls, have higher margins, be safer to produce and cheaper to maintain over their lifetime. In aggregate, we believe that a Complex with these attributes could well justify a substantial reduction in both the deployed and reserve nuclear weapon stockpile without compromising our national security or our deterrence posture.

Task Force Recommended Actions to Realize the Vision

The Task Force submits the following recommendations as implementation steps to transform the nuclear weapons Complex into an agile, responsive organization. Furthermore, the act of implementing these recommendations will contribute directly to two of the three elements of the New Triad. The recommendations in priority order are:

Immediate design of a Reliable Replacement Warhead (RRW)

The Task Force recommends the immediate initiation of the modernization of the stockpile through the design of a Reliable Replacement Warhead. The RRW is not only a weapon, but also a process whereby one achieves the sustainable stockpile of the future. Within the current military requirements the RRW should be designed for production with: 1) current requirements of surety and use control, 2) higher margin, 3) utilization of readily available materials that do not pose undue hazards to the Complex workforce, and 4) reduced production, maintenance, and disposition costs over the weapon life-cycle. To be absolutely clear, this is a new weapon; but one with the same military characteristics of a Cold War weapon it will replace. The Task Force recommends that successive versions of the RRW, incorporating further improvements in achievable margin, surety features, and reliability, be initiated on planned five-year cycles. Based on the Stockpile Stewardship investments made in the design laboratories, the Task Force is confident that RRW's as described above can be designed and certified without underground testing. If each version of the RRW replaces ~20% of the Cold War stockpile, then by 2030 the Cold War stockpile could be replaced by a stockpile of sustainable weapons. Thereafter, that stockpile could continue to be modernized at the same rate on a five year cycle.

Construction of a Consolidated Nuclear Production Center (CNPC)

To meet the responsive infrastructure aspects of the New Triad, the Task Force recommends that the NNSA consolidate all nuclear explosive package production, assembly, and disassembly activities to one location. This site should be a collection of modern plutonium and uranium production facilities with 21st century cutting-edge nuclear component production, manufacturing, and assembly technologies, all at one location. It is important to recognize that because the RRW will be designed for modularity, for production and assembly using precision numerically controlled tools and robots, the CNPC will require a substantially smaller labor force and a smaller footprint than required to maintain and operate production at the current Complex production sites. The site should be designed to achieve minimum production rates of 125 pits and 125 weapons to the stockpile/year, 125 disassemblies/year, and 50 surveillances/year, with single shift operation. These numbers were proposed to and accepted by the DoD as representative of a responsive and productive nuclear weapons Complex. The site for the CNPC should not be the result of a competition. Rather it should be selected by the President, based on national security needs, upon advice from the Secretaries of Energy and Defense, and in consultation with the US Congress. We highly recommend that this

site be underground. Prior to the operation of the CNPC, the RRW weapons should be assembled at the DAF facility at the Nevada Test site. The CNPC is not proposed as a location to store nuclear weapons, but weapon components and materials only.

Consolidation of SNM

To address the escalating security costs to the Complex and reduce exposure to current and future terrorist threats to the Complex, the Task Force recommends consolidating all Category I and II SNM and weapon primary and secondary components, to the CNPC. Note that an underground CNPC offers the greatest safety and cost savings against current and future as yet unspecified Design Basis Threats. Consolidation of SNM to a single site will substantially reduce Complex exposure to terrorist threats while increasing Complex efficiency in transportation, security, and SNM materials disposition. In addition, this action will reduce if not eliminate the exposure to terrorist attacks of residential and commercial communities contiguous to the future weapon Complex sites. Consolidation will not be fully realized until the entire Cold War stockpile is dismantled.

Dismantlement of the Cold War Stockpile

To demonstrate to the world that the US is not entering a new phase of arms build-up, and while building the sustainable stockpile of the future, the Task Force recommends that Pantex and Y-12 be directed to focus on dismantlement of the entire Cold War stockpile. Pantex and Y-12 have the authorization basis to assemble and disassemble weapons with conventional high explosives and other materials associated with Cold War weapons. This step coupled with the production of the RRW offers the only credible path to potentially reducing the number of nuclear weapons while maintaining our national security posture. The dismantled SNM components and subsystems would be sent to the CNPC for long term storage or reuse, or sent to other locations in the DOE Complex for non-weapon disposition.

Establish the Office of Transformation

To achieve the responsive nuclear weapons Complex of 2030, the Task Force recommends that the DOE create an Office of Transformation. This office is an agent of change, focusing on transforming the Complex into the responsive infrastructure, constructing the CNPC, and consolidating SNM. This office should be in place at least until the CNPC is under construction and the DoD regards the Complex as being responsive. The Office of Transformation should facilitate and monitor the following management changes:

Leadership: The Nuclear Weapons Council and the Secretaries of Energy and Defense should endorse and support the transformation to a responsive Complex and a sustainable stockpile.

Interdependence and Team Work: Contracting incentives (fee, deliverables, contract term, etc.) should be used to promote Complex interdependence and teamwork. The Task Force recommends that all mission critical facilities in the Complex become

user facilities and that redundant facilities be closed. Centers of excellence or lead laboratory designation for major technology areas should be encouraged.

Rationalizing operating decisions and management options: A risk-informed cost-benefit analysis should be performed on all programmatic, safety, and security recommendations. Rational decision making should balance risks and benefits while implementing change. No program or project should be implemented without clear written requirements and a cost estimate to complete. The NNSA Administrator should selectively apply DOE orders in a manner consistent with the unique nature of the NNSA mission.

A facet of this recommendation is that a substantial improvement in the management and direction of the Complex must be realized for the Complex to be agile and responsive. This is not an issue of architecture or organization; it is an issue of leadership and empowerment.

The Consequences

The President's directive of a stockpile of 1700-2200 nuclear weapons by 2012 permits a smaller-scale Complex. The capabilities-based deterrence posture, as articulated by the Department of Defense in their New Triad, sets the tone for a new type of Complex. In tandem, the reduced stockpile and the New Triad should result in a smaller, more agile, more innovative, more responsive, and thus more potent Complex, a Complex so feared and so respected that no nuclear weapon is ever used; that is the true metric of successful deterrence.

The above recommendations are deemed to be logical first steps to realize a responsive nuclear weapons Complex. The Task Force performed an assessment of the financial impact of our recommendations on near term DOE nuclear weapons Complex funding requirements and total Complex costs over the next 25 years. Our analysis was by no means complete or as detailed as we desired, but was the best possible given the constraints. We focused on analyses of the sensitivity to specific actions. We concluded that implementing all recommendations can be done with little or no budget increase if one is willing to: 1) reduce diversity in the current stockpile, 2) reduce redundancy in the Complex, 3) reduce employment at each site, and 4) accept some degree of future risk. On the other hand, with budget increases in the next 10 years one can implement the recommendations with little or no compromise to the current stockpile, the current employment at the sites, and little future risk. Many have asked for detailed financial modeling of specific paths to achieve the Complex of the future. We did indeed consider various paths, from both technical and financial perspectives. However, we concluded that if the Administration or Congress does not adopt our proposed vision of the Complex of the future, the path is irrelevant. And if Congress and the Administration do adopt our vision of the Complex of the future, there are multiple ways to achieve that vision, depending on the Administration's nuclear weapon stockpile policy, the cooperation and leadership in the DoD and DOE, and the funding appropriated by Congress. However, the RRW is the single most important element to realize a change in Complex attributes, and the consolidation of SNM and production at a CNPC has the single greatest impact on controlling and reducing future Complex costs and security risks.

Furthermore, we respectfully submit that the status quo is not an option. The status quo is neither technically credible nor financially sustainable. The Complex today is lacking vision, agility and a commitment to deliver. We offer a vision for a responsive and modern nuclear weapon Complex of the future. That Complex will be a critical element of the New Triad, our overall deterrence posture, and our national security capability well into the future.

The DOE Approach to Transformation

The preceding comments represent the opinions of the Task Force. The following comments are those of the author and should not be construed to represent the opinion of the Task Force.

The Department of Energy has proposed steps that implement portions of our recommendations. I am encouraged by their proposals. The role of the RRW is critical to the transformation process, and Congress and the DoD must share in that initiative. But it is worth noting that the most significant changes are deferred to future years. I respectfully submit that the DOE's proposals on restructuring the Complex's production capability or to control the costs associated with the current and future DBT, both within the DOE's control, are not sufficiently aggressive. I also note with interest that the DOE has not provided its own analysis of the cost of the CNPC nor has the DOE requested from Congress the funds to proceed with a cost benefit analysis of a CNPC as compared to modernization in place. However, the DOE represents that the CNPC is too expensive (based on what?) and there are insufficient funds, but the DOE has not asked Congress for CNPC funds. I, therefore, shall provide an analysis of the CNPC cost effectiveness.

There are two aspects to the CNPC: 1) modern cost effective production, 2) consolidation of SNM to realize operating and security cost reduction. I shall treat each separately.

1. Modern cost effective production.

a. Modernization in place:

As of January 2005, the NNSA had identified a **deferred maintenance liability of \$2.4 B** at the eight Complex sites, with ~ ½ of this amount associated with the four production sites and production being performed at SNL and LANL. This deferred maintenance liability does not necessarily go away by building a new building at the site. Focusing on production, there are three locations that currently perform functions critical to the production of nuclear weapons: Pantex for assembly and disassembly and high explosive machining; TA 55 at LANL for plutonium processing and pit machining; Y-12 for secondary assembly/disassembly, highly enriched uranium processing and machining, and case manufacture. (I shall address non-nuclear components later) The relevant facilities at all three locations are antiquated and need to be modernized. For example, as of the July 2005, LANL did not have one numerically controlled machine or non-contact metrology device to produce and measure pits, the most critical precision component in a weapon, at TA 55. Rather, LANL is using technologies and machines, many of which were built in the 70's, imported from Rocky Flats. The situation is not much better at Y-12 or Pantex. In addition, Y-12 and LANL require major upgrades to their basic infrastructure to support future SNM work. So, if you put in a new/upgraded SNM production facility at each location, you will need to upgrade the infrastructure and the

security as well. The projected major capital cost items (based on NNSA projections provided to the Task Force) for modernization in place of the production complex are:

LANL costs to support TA 55 modernization for pit manufacturing:

CMRR building:	~\$850 M*
TA 55 building upgrade and equipment:	~\$250 M
TA 55 perimeter security:	~\$250 M
Infrastructure modernization (SNM waste reprocessing, etc.):	~\$ 80 M*

Y-12 costs to support uranium production and processing:

EUMF for uranium production and processing:	~\$750 M
Infrastructure modernization (water, electrical, steam, etc.):	~\$140 M*
Security systems	~\$130 M*

Pantex new evaluation facility and infrastructure:

Infrastructure modernization:	~\$130 M*
New evaluation facility and HE processing facility	~\$130 M*
Security (there are additional security proposals under consideration that range up to \$300M. Note that this is complicated since the Pantex plant is in the Amarillo airport approach flight path, which makes security more difficult, expensive, and problematic.)	

* indicates those activities in process, although most have just started.

Therefore, modernization in place will require a minimum investment of ~\$3 B in three separate sites, each of which is a challenge to secure from a physical security perspective, and additional security costs may be incurred with future DBTs. Each separate Cat I & II SNM location requires significant infrastructure, operating personnel, security systems and SNM transportation costs to distribute the SNM between the locations.

b. The DOE proposal to modernize only plutonium production at a new location:

The Task Force estimated that plutonium R&D and production represented ~ 2/3 the capital cost of a CNPC. The DOE approach will incur all of the modernization costs in a) above in addition to incurring the cost of a new facility plutonium production site. This is a redundant and expensive approach. However, the issue of authorization and cost of the new plutonium center is moved to a new Administration and a new Congress, and the new location will not be ready until 2022. Thus, all of the major security and production investments must be made in TA 55, only to be replicated in the new location, albeit far in the future. Further, by locating this capability at a new site which is not Pantex or Y-12, there is no efficiency or operating cost reduction that can be realized by leveraging the infrastructure investments that the DOE proposes to make at those Pantex and Y-12 sites, which again I point out, are hard to secure against future DBTs.

c. A new non-nuclear production facility:

If the DOE is implying that they intend to build and operate a new non-nuclear production facility as a GOCO, I represent that this is not cost effective now or in the future. Rather, if the Nation decides to proceed only with LEPs of Cold War weapons, the Kansas City Plant (KCP) operator has already demonstrated that they can perform that

task effectively. Indeed, the KCP operator has made proposals to the DOE whereby the further incorporation of commercial standards and codes, a greater freedom to outsource, and the approval to eliminate component inventory for deactivated Cold War weapons could realize immediate cost reductions and efficiencies in all of the services that KCP currently provides to the Complex.

If, however, a modern non-nuclear production plant is being considered for RRW components, then such a plant should not be considered nor planned until the Nation agrees to proceed with an RRW, and the DoD customer has agreed to the degree of modernization, componentization, and commercial components that will be acceptable in the RRW family of devices. The plant can then be designed and equipped appropriately, in time for the first RRW production unit.

Rather, I propose that regardless of LEPs or the RRW, the DOE and the Complex would be better served by requesting the current KCP contractor to quote using their own commercial facilities, new or existing, to provide the DOE with ALL non-nuclear components, including neutron generators and detonators, to DOE specifications. The current KCP plant operator clearly has the skills to perform all of these tasks, is skilled in diverse production, and has some of the best (if not the best) concurrent engineering and production skills in the Complex. The existing KCP facility, again a WW II vintage building of which less than 50% of the building footprint is currently used for weapons work, could then be de-activated and returned to the GSA.

2. Consolidation of SNM to realize operating and security cost reduction:

The NTS will for the foreseeable future be a SNM location; thus, locating the CNPC at the NTS results in the absolute minimum physical security costs and transportation costs to the Complex. In addition, unless DARHT is moved to the NTS, LANL will always be a SNM Cat I facility because the DOE needs to have the capability to perform a hydro-test with scaled Pu devices to meet future weapon program needs. The Task Force did not consider altering the HEUMF at Y-12 since it was under construction. However, since the report was finalized, a major deficiency in the HEUMF and associated cost growth has developed. Thus, rather than proceed with the HEUMF as planned, it would be now be appropriate to immediately plan to relocate the HEUMF to the CNPC, or to the future consolidated Pu production site. The cost for the HEUMF is scheduled to be in the range of \$400+M based on events to date.

In general, the physical security costs scale with the number of SNM Category I & II sites. The secure transportation costs scale with the number of transportation routes (between sites) and quantity of SNM that must be transported around the Complex (number of shipments). Therefore, consolidation of the SNM at the CNPC, realizes cost reductions/savings only if you reduce the number of sites and routes that require SNM Cat I & II and associated DBT security measures. In the proposed FY 2007 budget, the combination of safeguards and security/secure transportation represent ~ \$210 M/\$750 M respectively of the ~\$6.4 B budget request for weapons activities.

With the above comments providing context, the summary table below facilitates understanding the cost implications of the DOE proposed plan compared to the SEAB, just based on security

costs and SNM transportation costs to move SNM components between sites. Substantial security and transportation cost reductions can be realized through 2030 depending on the rate of dismantlement in the SEAB proposal, but not in the DOE proposal.

Year	DOE Proposal		SEAB Proposal	
	# of SNM sites	# of SNM transport routes*	# of SNM sites	# of SNM transport routes*
2006	6 (NTS, SNL, LLNL, LANL, PX, Y-12)	8 + X to DoD	6 (NTS, SNL, LLNL, LANL, PX, Y-12)	8 + X to DoD
2015	4 (NTS, LANL, PX, Y-12)	5 + X to DoD	4 (NTS, PX, Y-12 + CNPC)	5 + X to DoD
2022	5 (NTS, LANL, PX, Y-12 + Pu site)	7 + X to DoD	2-4 (depending on dismantlement)	1-5 + X to DoD
2030	5	7 + X to DoD	2: NTS + CNPC	1 + X to DoD
			1: NTS is CNPC	0 + X to DoD

* The X represents the number of transport routes to deliver/receive nuclear weapons to/from the custody of the DoD. For this analysis we assume that X is invariant between now and 2030 and is independent of either the DOE and or SEAB proposal.

In the above table, SNM refers to Category I or II levels only. These are the levels that require the most stringent security measures in compliance with the Design Basis Threat. Pu site refers to the DOE proposed plutonium center, the location is not yet specified.

In addition, the logistics associated with the transport to a location of final disposition of SNM no longer required for the stockpile is not included in the above. That transport is highly dependent on the size of the stockpile, the technical nature of the SNM disposition, not resolved, and where the final disposition site or station is located, not resolved. Regardless, as soon as you have dismantled the last of the Cold War stockpile, you can remediate Pantex and Y-12 and immediately reap substantial security, transportation, and operating cost reductions.

Is the CNPC too expensive?

I now return to the issue as to whether the CNPC is too expensive. As evidenced in the previous discussions, modernizing in place is an expensive alternative. Many of the current sites have deteriorated infrastructure, which need to be repaired if it is decided to operate the site long into the future. And, as in your own home, the cost to refurbish and modernize an old structure, designed for other purposes, is substantially greater than building new structures designed for function. Thus, the infrastructure investments in the current complex alone would pay for a major portion of the CNPC. The CNPC would be designed for these applications, not retrofitted, and would be designed for the DBT (an underground installation would be optimum.) Both are important considerations. Furthermore, based on the current and extrapolated costs of securing SNM at various locations and transporting SNM between Complex sites, it is far cheaper and more efficient to secure the SNM at one location and transport the scientific and engineering experts to the SNM consolidated location for the few experiments with Cat I & II quantities.

The largest driver in CNPC cost is the plutonium manufacturing. The need for plutonium manufacturing is independent of the lifetime of a plutonium pit. Although that is an important consideration in CNPC timing, it is not the only consideration. Rather, in the next 15 years, a number of Cold War weapons will need to be refurbished (LEPs). For some of them, refurbishment does mean making new pits, albeit of the same design. During that refurbishment, it is highly likely that new pits may also be required to implement safety and reliability requirements, independent of desired margin improvements, as discussed for the RRW. Improved surety and margin will require new pits. If you look at the numbers, unless you reduce the number of weapons in the deployed stockpile, the current TA 55 facility cannot meet the workload. The only way to meet that workload is to have a new pit production capability. This was another facet that entered into our consideration of 125 pits to the stockpile/year as a requirement from the CNPC, even with TA 55 producing 50 pits to the stockpile per year.

So, if pit lifetime is not an issue, and if we will not redesign the pits to achieve greater surety, use control, or improved margin, and if we reduce the number of warheads in the deployed stockpile, the TA 55 facility at LANL might be adequate. However, if we might need the capability, then you need an MPF. And once you decide to build an MPF, putting it at a location that could become the CNPC will result in substantial capital cost reductions (true savings) and operating cost avoidance, to the Complex. In summary, the CNPC is a modest cost in the overall DOE and DoD nuclear weapon system operating budgets in the context of value for sustaining viable nuclear weapon deterrence. That investment grants future administrations and defense professionals greater flexibility to meet truly unanticipated future threats to our national security.

Concluding Remarks

I submit that if this Administration chooses and this Congress agrees that nuclear weapons and a responsive nuclear weapons Complex are critical to the long term national security of this great Nation, then the vision for the Complex is not far different from what we have proposed. If one agrees on the vision and the necessity of nuclear deterrence, there are many paths that one can take to achieve the end result, and we may not have articulated the optimum. However, the vision and the path should not be chosen based on jobs or domestic political constituency. It should be based on the future security interests of the Nation.

For a Nation that could put a man on the moon in less than 10 years; for a Nation that designed, built and tested the first nuclear weapons without the benefit of computers and previous nuclear test results; for a Nation that can spend billions on a war in another Continent, for that Nation to say we do not have the money nor the ability to achieve a modern nuclear deterrent and associated Complex of the future in 10 years is truly incredible.

I believe it can be done. The President, based on national security needs, upon advice from the Secretaries of Energy and Defense, and in consultation with the US Congress, should propose this Complex of the future, and the Congress should dispose through legislation or it will not happen. This concludes my testimony. Mr. Chairman and members of the Committee, I thank you for your attention and I am prepared to take questions.