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FUTURE PLANS FOR THE DEPARTMENT OF ENERGY'S NUCLEAR WEAPONS COMPLEX INFRASTRUCTURE

HEARING

BEFORE THE

STRATEGIC FORCES SUBCOMMITTEE

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED NINTH CONGRESS

SECOND SESSION

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FUTURE PLANS FOR THE DEPARTMENT OF ENERGY'S NUCLEAR WEAPONS COMPLEX INFRASTRUCTURE

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
STRATEGIC FORCES SUBCOMMITTEE,
Washington, DC, Wednesday, April 5, 2006.

The subcommittee met, pursuant to call, at 3:30 p.m., in room 2237, Rayburn House Office Building, Hon. Terry Everett (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. TERRY EVERETT, A REPRESENTATIVE FROM ALABAMA, CHAIRMAN, STRATEGIC FORCES SUBCOMMITTEE

Mr. EVERETT. The hearing will come to order.

The Strategic Forces Subcommittee meets today to receive testimony on plans for transforming the Department of Energy's nuclear weapons complex.

Thank you all for coming.

I would like to welcome our first panel of witnesses: Dr. David Overskei, Chairman of the Nuclear Weapons Complex Infrastructure Task Force; and Mr. Peter Stockton, Senior Investigator, Project on Government Oversight (POGO); Mr. Tom D'Agostino, Deputy Administrator for Defense Programs at the National Nuclear Security Administration (NNSA); and Mr. Charles Anderson, Principal Deputy Assistant Secretary in the Office of Environmental Management (EM) in the Department of Energy (DOE).

The subject of how to transform the nuclear weapons complex is not new, nor is it easy. There have been many studies conducted over the last 20 years on how best to modernize our Cold War era weapons complex. In spite of the numerous studies, there has been little change and almost no actual transformation. We cannot continue to proceed down the same path year after year. Doing so will put at risk a key attribute of our national defense: our strategic nuclear deterrent.

In last year's defense authorization bill, this subcommittee drafted and enacted, with bipartisan support, legislation setting forth the objectives of the Reliable Replacement Warhead or RRW program. That legislation was accepted by our Senate colleagues and is now established law. At the time, we saw the RRW program as laying down a foundation for the required capabilities of the future weapons complex infrastructure.

Today, with the RRW program concept in place, we will hear from our witnesses on what steps could or should be taken to modernize our complex, consolidate nuclear material and reduce security costs. There are many different opinions on how best to accom-

plish transformation. Along with my subcommittee colleagues, I look forward to hearing from our witnesses today on this critically important issue.

We have a lot of ground to cover today, and I want to allow each of our Members as much opportunity as possible to ask questions. I would ask our witnesses to please be brief with their prepared remarks. The entirety of your written testimony will be included in the record.

Let me also say if you see me up here wiping the tears, it has nothing to do with your testimony. It is the fact that my allergies have gone crazy.

Let me now introduce my good friend and colleague, Mr. Reyes, the Ranking Member of our subcommittee. Mr. Reyes.

[The prepared statement of Mr. Everett can be found in the Appendix on page 35.]

STATEMENT OF HON. SILVESTRE REYES, A REPRESENTATIVE FROM TEXAS, RANKING MEMBER, STRATEGIC FORCES SUBCOMMITTEE

Mr. REYES. Thank you, Mr. Chairman.

If you have forgotten how hard we work, when it brings the chairman to tears, you know we are working hard.

Thank you, Mr. Chairman, and I join you in welcoming our witnesses to this very important hearing.

I want to thank each of our distinguished witnesses for taking time from their busy schedules to be with us today.

I also want to thank my friend, our chairman, Mr. Everett, for providing me with the opportunity to set the stage for the hearing today from my own personal perspective.

Nuclear weapons and our nuclear weapons complex play a very different role in our national security posture than they did during the Cold War. Almost 15 years have passed since the collapse of the old Soviet Union and almost 14 years since the last nuclear weapons test on September 23, 1992. Much has changed since that time.

The legacy of our nuclear weapons competition with the former Soviet Union lives on in the weapons, facilities and materials that remain, however.

While Russia and the United States agreed in the Moscow Treaty of 2002 to limit deployed nuclear warheads to a level of 1,700 to 2,200 each by the end of 2012, the United States maintains a significant stockpile of old weapons in reserve. DOE's life extension programs for deployed weapons have not convinced the Department of Defense to part with these reserves. The stockpile of old weapons is retained based on concerns that we might find a fatal defect in one or more of our deployed systems and that we cannot rapidly produce new systems.

And while the two nations agreed in June of 2000 to dispose of at least 34 metric tons of plutonium each beginning next year in 2007, this program has been stalled for years over the issue of liability and may face additional hurdles, according to the recent briefings by the administration.

Finally, even in this post-9/11 era, when stocks of nuclear weapons and materials represent particularly attractive targets, weap-

ons-grade nuclear materials remain in storage at facilities such as Hanford, Washington, that no longer perform any nuclear weapons-related activity.

In terms about the safety, security and reliability and the cost of the nuclear weapons enterprise have been of continuing interest for this particular subcommittee. The hearing today allows us to explore the administration's plans for maintaining our nuclear deterrent without returning to testing and for securing nuclear materials within our own borders without further busting our budget.

In January of 2005, the Secretary of Energy established a task force 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." Dr. Overskei chaired that task force, and he is here today to discuss that task force's final report, which was transmitted to the Secretary last October. The task force delivered a bold report that made numerous recommendations, but its key proposals focused on revitalizing the nation's nuclear weapons conflicts through, one, pursuing development of reliable replacement warheads and, two, consolidating all production and storage involving weapons-grade nuclear materials in one underground location.

The NNSA administrator, Ambassador Brooks, assigned Deputy Administrator Tom D'Agostino responsibility for evaluating the task force's recommendations and preparing NNSA's plans for creating a responsive nuclear weapons infrastructure. Mr. D'Agostino will describe those plans for us this afternoon.

The Department of Energy stores weapons-grade nuclear materials at 13 sites around our nation, some of which have no current relationship with nuclear weapons business. After the 9/11 attack, the agency reevaluated its security posture. The department concluded that significant improvements should be made based primarily on the risk of a terrorist being able to fabricate an improvised nuclear device by gaining access to some of these materials.

The new security posture requires expensive upgrades, yet DOE's current security costs are already substantial. The fiscal year 2007 request for nuclear security activities, including both NNSA and the Environmental Management Program, exceeds $1 billion.

The project on government oversight, POGO, conducted an investigation in 2005 evaluating the department's plans for protecting weapons-grade material. They found that disposing of excess nuclear materials and consolidating the remaining materials in fewer and more easily defendable locations, could save our government billions of dollars over three years while also better protecting the public from potential nuclear terrorism. Mr. Stockton is here today to discuss POGO's recommendation.

While the department's efforts to consolidate nuclear materials are intimately related to improving security and reducing costs, it is notable that consolidation plans have been slow in developing. It was not until this past November that the Secretary appointed Charles Anderson the chair of the Department of Nuclear Materials Disposition Consolidation Coordination Committee. Mr. Anderson is here this afternoon to discuss with this subcommittee the department's plans for moving forward with disposition and consolidation efforts.

So we have a busy afternoon, Mr. Chairman.

Thank you, again, for the opportunity to offer these observations, and I look forward to hearing from our witnesses. With that, I yield back my time, sir.

[The prepared statement of Mr. Reyes can be found in the Appendix on page 40.]

Mr. EVERETT. And I thank my friend.

We will start with the first panel, of course.

Dr. Overskei, the floor is yours.

STATEMENT OF DR. DAVID O. OVERSKEI, CHAIRMAN OF THE NUCLEAR WEAPONS COMPLEX INFRASTRUCTURE TASK FORCE OF THE SECRETARY OF ENERGY ADVISORY BOARD

Dr. OVERSKEI. Thank you.

Chairman Everett, Representative Reyes and Members of the committee, thank you very much for inviting me to appear before you today to discuss the work of our task force on the Nuclear Weapons Complex Infrastructure Task Study.

I understand that my written testimony will be accepted for the record.

Mr. EVERETT. Without objection.

Dr. OVERSKEI. Thank you.

I will just spend a few seconds giving you some context about our study and how we went about doing it.

As you have already been informed, this came up as the Secretary of Energy made a commitment to Energy and Water Appropriations Subcommittee in March 2004. This was memorialized in legislation in the Energy and Water Appropriations Bill of 2005.

The Secretary requested the Secretary of Energy Advisory Board (SEAB) to set up this task force, and we were set up in January of 2005. We commenced our work in February and submitted our report for public comment in July. It was submitted to the Secretary of Energy Advisory Board in October of 2005 and then accepted by them and submitted to the Secretary of Energy.

It is important to understand that we wanted to understand the landscape and all the constraints and the diversity of requirements that was being placed on the nuclear weapons complex. And we began our efforts by talking to senior members of the National Security Council, the Office of the Secretary of Defense, the Nuclear Weapons Council, the executive officers in both the Air Force and the Navy who are responsible for the delivery systems for nuclear weapons in those respective services, the Office of Management and Budget, the Commander of U.S. Strategic Command, Members of Congress that are responsible for the oversight committees that authorize and appropriate funds for the Department of Energy in both the Congress and the Senate, and also the National Nuclear Security Administration personnel.

Then we also reviewed the context in which the President established new conditions with regards to a directive for a reconstitution and a new level for the stockpile, and the new weapons level of 2010 of 1,700 and 2,000 weapons—and 2,200 nuclear weapons. And that defined a reduced capacity requirement for the complex.

In addition, the Department of Defense had undergone a new evaluation of how they were going to represent deterrence for the

United States and defenses for national security purposes, and they had a new triad. And this established near-term mission objectives and performance metrics for the Department of Energy and the nuclear weapons complex as an element of this triad.

So with that as background, we began our study, and just to make sure that we know that we are cognizant of the fact, numerous other reports and studies had been conducted since 1980, and we had requested that the Department of Energy give to us a presentation of the major recommendations of the previous studies, of which there were 12 major ones. We requested the recommendation and the outcome of those studies and a perspective as to why those recommendations were not implemented so that we had that as a context. And, ladies and gentlemen, this was a very sobering experience. We found that the recommendations were very substantive and extensive and it gave us great pause as to whether or not our committee was going to have the ability to actually implement change.

With that, we began our review of the complex, and we noted that the complex is currently struggling to transition from the old Cold War approach, with the Cold War weapons, into a new and more agile complex. We did not find that the complex was integrated, and it wasn't operating as a unified enterprise. It was a set of independent design laboratories who were operating independently of the production facilities and the production sites. And all were striving to sustain their past legacy and their past funding rather than preparing for a different future.

The DOD, who is the primary customer, did not consider the complex productive or responsive, and the stakeholders that we interviewed did not find the complex as being responsive in the context of the new triad that was coming out of the Department of Defense.

From a capability perspective, enormous investments in stockpile stewardship we found were starting to bear fruit. We now have superior characterization of the weapons materials and understanding of the nuclear physics processes. However, the design laboratories have not produced a new design in over 15 years and the design laboratories were struggling to resolve some current stockpile issues in a timely fashion.

The production complex was largely old, operating World War II era or early 1950's facilities and did not employ modern production quality control or production processes and techniques. And the production part of the complex was routinely failing to meet the current weapon refurbishment requirements and schedules that were set by the Department of Defense.

From a security perspective, the plutonium and highly-enriched uranium special nuclear materials that were located at six to eight complex sites were rapidly draining the budget of operating funds via security requirements, and this was rapidly approaching the level of about a billion dollars a year. And this was largely because of what we would consider to be arbitrary mandated requirements and methodologies to meet the design basis threat (DBT) that was established by the Administration and the Department of Energy.

There was also some other aspects associated with the geographical constraints and the physical site constraints of these facilities,

which I will address later, but they were never designed to provide the sort of security requirements that we were seeking of our complex sites today.

From a management perspective, the nuclear weapons complex that during the 1980's demonstrated great leadership and decisive decision-making was no longer doing that. The DOD was not operating as a partner. The DOE management was burdening the NNSA with rules and regulations that were inconsistent with mission requirements of the NNSA. And the complex, as I have already said, was not operating as an integrated enterprise with a shared purpose.

The Cold War stockpile, although it be safe and reliable, does not represent now the surety controls and use controls, nor the operating margins the DOD requires and the complex is capable of producing. And this stockpile is being sustained through a very expensive life extension program which will still result in old weapons, albeit with some modern components, and many of these weapons will be, by 2030, will be of a 50- or 60-year-old design. This stockpile is a legacy that has a future maintenance and surveillance cost liability that we believe is unbounded.

Now, we have a vision for the complex of the future. And it would be for a sustained role of nuclear weapons, an important part of our current and future deterrence posture. We would envision a complex that would evolve to a smaller stockpile, consistent with the President's level that he put in the Moscow Treaty for 2012 of 1,700 to 2,200 deployed weapons with some modest reserve. In our analysis, we assumed there would be a reserve of about 1,000 weapons.

We assume comparable ratios between Intercontinental Ballistic Missiles (ICBM) and Submarine-Launched Ballistic Missiles (SLBM) and air-delivered warheads, as we have today, but only for the purposes of analysis, and we assume in discussions with the Air Force, Navy and Strategic Command, that the complex would need to be in a position to produce annually up to 125 weapons for the stockpile as a demonstration of productivity, which is important in the capability aspect of deterrence.

Our vision for the complex is that it would provide these weapons, through continuous design, production and dismantlement, and that this continuity of demonstration of capability is an essential element of deterrence, and it is this type of deterrence that will result in a reliable stockpile. But more than that, it is this deterrence capability that is in the complex that will allow us to meet uncertainty and threats to the future. It is not the stockpile. It is the complex that can address this.

With that, I want to point out several attributes that we would associate and would aspire that would be in the complex of the future.

The first is agility. This is agility in the scientific engineering and technical capital base of the complex that we think is fundamentally the most important. It is that area that will innovate, conceive and develop feasible solutions that then can get produced.

The automated production aspect of the complex would be employing concurrent engineering, which is something that is used now by state-of-the-art manufacturing facilities and market seg-

ments throughout the world, and this automated concurrent engineering production complex would be in a position to rapidly transition from prototype to production.

And responsiveness. We have metrics that are submitted in the written report of 12 months to fix the problem, 18 months to develop a solution for new needs, 36 months to a prototype, 48 months to production and 18 months to resume testing. While we believe that these numbers are very technically credible and can be achieved within the complex, we believe that there is a credible approach where these numbers could be halved.

One of the other requirements here is that in order to achieve all of this it will require a management and leadership organization that is capable of making timely decisions that balance risks, benefits, performance and cost. We feel that such a complex is possible and desirable, and that such a complex can replace and dismantle the entire Cold War weapons stockpile and replace it with the comparable amount of 2,200 or less sustainable nuclear weapons of equivalent military characteristics, and this can be done by 2030.

Now, I wanted to discuss a couple of recommendations that we believe are important to get started immediately to realize this vision.

The first is the immediate design of a reliable replacement warhead, and we are pleased to see that the Administration is doing that and that the DOD is endorsing it. It is important to identify that this is not a weapon as much as this is a new process that gets applied to designing weapons. It is a process where you look for advanced surety and use control, higher margins, utilization of commercial components wherever possible to eliminate the unique production capabilities and you design for cost and reliability over a lifecycle. And that there would be successive versions of an RRW so that over time, in a controlled manner, you can replace the stockpile. And, second, because we would submit that you would go through planned lifecycles of about five years per version, this allows you then to accommodate and incorporate new technology to meet evolving threats, and you can incorporate that into your stockpile solution.

The second element is the CNPC, the Consolidated Nuclear Production Center. And this is where you would consolidate all nuclear explosive package, production, assembly and disassembly activities in one location. It will be cutting-edge production and manufacturing capability. And it would be designed to produce 125 weapons to the stockpile every year and dismantle 125 weapons, so that we are in a steady state.

This site—and this is an important element—this site should not be selected competitively. There are a number of locations in the United States where this site could be placed. It should be selected by the President with advice based on national security needs from the Secretary of Energy and the Secretary of Defense and in consultation with the Congress. This is a issue of national security. This should not be an issue of jobs.

The third element of our proposal is the consolidation of special nuclear materials (SNM). This will be the only way that we can address the continuously escalating security cost of the complex and

reduce exposure of the current and the future terrorist threat to the complex.

This consolidation would be done at the CNPC and we believe that one of the most effective approaches—but there are other ways of doing this—but one of the most effective approaches would be to have the CNPC underground, because that is one of the most sure ways of capping the potential security threat. We also point out that this consolidation of all of the SNM materials cannot and will not likely be realized until the Cold War stockpile is dismantled.

Dismantlement is another element. This is important to demonstrate to the world that we are not entering into new arms building. We would point out that we believe Pantex is well positioned to aggressively dismantle the existing Cold War stockpile and the same with Y–12. And at the conclusion of the dismantlement of the last of the Cold War weapons, then Pantex and Y–12 could be remediated and all of the SNM materials and components could be relocated to the CNPC or at other DOE complex locations for remediation and disposition.

Office of Transformations is the last of our recommendations. This office is responsible to guide the transformation of the department in areas of leadership, establishing interdependence and teamwork, like establishing contracting incentives and linking deliverables across the complex. It would also be responsible for rationalizing operating decisions and management options and, last, this would be an organization that would provide some insight into the leadership and management of the NNSA. We would like to point out that this is not—this management aspect is not an issue of architecture or organization. It is rather an issue of leadership and empowerment.

The consequences of our recommendations are this: We believe that you can achieve a safe, reliable stockpile of 1,700 to 2,200 nuclear weapons by 2012 and convert that to the new sustainable stockpile by 2030. The complex will evolve into an organization that is far more agile and responsive and will constitute one of the critical elements of the new triad.

We looked at the cost analysis of doing it. Our analysis was by no means complete, nor was it as detailed as we would like, but we did find that with little or no budget increase and excepting reduced diversity in the stockpile, reduced redundancy in the complex, reducing employment within the complex and taking on some future risks, you can make the transition.

On the other hand, with budget increases in the next 10 years, largely for the dismantlement and the construction of the CNPC, you can achieve the transition with no compromise in the current stockpile, no compromise or reduction in the employment at the current sites, and no or very little future risk. And, of course, there is a large continuum between these two options.

Furthermore, we would submit that the status quo is not an option and it is not technically credible nor financially sustainable.

So I submit that this Administration can implement the transformation of the complex if the Congress agrees to support this. We have found, going back to my initial comments, where we had looked at these 12 previous studies, we have found that the things that we are proposing are not dramatically different from steps

that have been proposed in the past, but one of the elements that was missing was congressional legislation to support a lot of those recommendations. And we would submit that at this point, to achieve these transforming actions, it is going to require congressional legislative support for the Administration to actually implement.

In closing, I would say, we have the money and the ability to establish a modern nuclear deterrent complex and it only requires the support of Congress and the Administration and the decision to do so.

This concludes my testimony.

There was a request for me to address a specific question associated with the cost of the CNPC and alternative approaches to the CNPC, which at this point I am capable and willing to do, but I will defer that to questions.

[The prepared statement of Dr. Overskei can be found in the Appendix on page 49.]

Mr. EVERETT. Thank you, Dr. Overskei.

I think we will proceed with Mr. Stockton and then come back.

STATEMENT OF PETER D.H. STOCKTON, SENIOR INVESTIGATOR, PROJECT ON GOVERNMENT OVERSIGHT

Mr. STOCKTON. Chairman Everett and Mr. Reyes, thank you for inviting POGO to your hearing on future plans for the nuclear weapons complex.

The Project on Government Oversight is an independent organization that investigates and exposes corruption and other misconduct in order to achieve a more accountable Federal Government.

We think the Secretary of Energy's Advisory Board report, headed by Dr. David Overskei, was very thoughtful, looking at the nuclear weapons complex over the next 25 years. However, POGO's approach is focused on the near term because of the enormous amount of money that will be spent protecting the nuclear material where there is either a redundant mission or no mission at all.

In consultation with security experts throughout the Federal Government, POGO conducted an investigation to determine how nuclear weapons sites could best meet the new security requirements, the DBT, while also lessening the enormous financial burden of trying to protect the materials at 13 separate sites.

This investigation has found that disposing of excess nuclear materials and consolidating remaining materials in fewer and more easily-defended locations could save the government billions of dollars over the next three years while also better protecting the public from nuclear terrorism. In this post-9/11 world, it is unconscionable that we continue to store plutonium and highly-enriched uranium, the nuclear material most attractive to terrorists, in World War II era buildings, some of which are built of wood.

This material is stored at great cost to the taxpayer, and some of the sites are in highly populated areas. It is incumbent upon the Department of Energy and the Congress to force change, as uncomfortable as that process could be. I think you have maps attached to our testimony there of what the complex looks like now and what we recommend.

There are 13 sites across the country that store large quantities of weapons-grade special nuclear material. The responsibility for these sites is divided between the DOE's NNSA and Environment, Science and Engineering (ESE), and the Nuclear Regulatory Commission.

POGO's 2005 report recommended ways in which DOE should de-inventory six sites of SNM and consolidate these materials at more secure sites in the next three years. In addition, POGO encouraged accelerating the process of blending-down of excess highly-enriched uranium (HEU) and immobilizing excess plutonium.

We were in no way suggesting shutting down sites. We are simply stating that these six sites pose unnecessary homeland security risks and budgetary pressures by continuing to store SNM.

In discussions with NNSA, we have learned that they now have a plan that will significantly consolidate their SNM. They should be congratulated for taking this step. The problem remains however, that they are looking too far into the future to accomplish this plan; at least two administrations into the future. In the meantime, we are spending billions of dollars to protect this material.

The proposed timelines for consolidation are so far into the future that they are easy to accept because the hard work is left for future administrations and other policy makers. Secretary Bodman needs to inject immediacy into this plan to make it successful.

We know from experience that officials throughout the nuclear weapons complex have and will strongly resist any change. Those inside the complex have seen that they can just out-wait any new directives until the current Secretary has moved on, and the status quo can be maintained. And I am sorry I don't have enough time to explain the

That happened to Secretary Richardson as well as Secretary Abraham and Deputy Secretary Kyle McSlarrow. The major reason for the TA–18 move, which I spend half my life on it seems.

An array of concerns arises when it comes to securing America's nuclear material, but security experts' greatest fear is very distinct: the terrorist group successfully reaches its target at one of the facilities and within an extraordinarily short time, within minutes, uses the HEU to create an improvised nuclear device (IND). It only takes a critical mass of HEU of about 100 pounds or potentially less to create an IND.

To put this in perspective, one site alone stores about 400 metric tons of HEU, enough for 14,000 nuclear warheads. NNSA is now struggling to resolve the growing tension that exists between budget constraints and security requirements as long as the material remain spread across the complex. It appears ESE does not even recognize the problem.

POGO has internal emails that indicate that they are engaged in what I can only call the mating dance of the prairie chick about what to report to your committee. I would like to submit them for the record. I have a copy of them right here.

[The information referred to can be found in the Appendix on page 95.]

Mr. EVERETT. Without objection.

Mr. STOCKTON. Thank you.

DOE sites cannot meet the 2003 DBT, which is far less robust than most of the recent—several DOE sites, I am sorry. Several DOE sites cannot meet the 2003 DBT, which is far less robust than the most recent DBT.

The Office of Management and Budget cut the fiscal year 2007 DOE security budget by $200 million, mostly because they were disappointed in the lack of progress in DOE's consolidation efforts. Ambassador Linton Brooks writes that he can't reveal the cut in security funding because he has to defend the President's budget. DOE's Office of Security and Safety Performance Assurance Director Glen Podonsky pointed out that the way out of this morass is to consolidate the SNM and reduce the security cost.

Some sites, as you probably know, are preparing to request waivers from the Secretary to exempt them from the 2003 DBT. One site at Y–12 has already been granted waiver. Hanford and Oak Ridge National Laboratory are in the process of receiving waivers.

I ask that our complete report be submitted for the record. I will focus my testimony on the most urgent priorities for the committee to consider.

[The information referred to is retained in the Committee files and can be viewed upon request.]

Mr. STOCKTON. The first is sites that should be de-inventoried immediately. Lawrence Livermore National Laboratory. When it was built, it was located in the middle of a desert. Since that time, a residential neighborhood has encroached to the fence line of the lab, with houses and athletic fields literally across the street. Nearly 7 million people reside within a 50-mile radius of the lab. Super Block, where the plutonium and highly-enriched uranium is located, is only approximately 900 yards from these houses.

Securing these materials creates a unique problem. How do you adequately protect these materials without unduly endangering the surrounding population? The security forces at Livermore are constrained in a way that no other NNSA security forces are. It is precisely because of these residential neighborhoods that the Livermore security force cannot use the same weapons used by security forces at the other sites.

Despite earlier assurances from DOE that these restrictions on Livermore's defensive measures pose no problems, DOE has reversed course and decided that the restrictions are indeed a problem.

DOE has lifted those restrictions to a degree and is now planning to deploy Gatling Guns that fire 30,000 rounds a minute. The military kill range for such a gun is one mile, but it can kill up to two miles. Within that one-mile range, there are two elementary schools, a preschool, middle school, senior center and athletic fields. Even in an accidental firing, the lab would be spraying lethal bullets into the neighborhoods.

Mr. EVERETT. Mr. Stockton, you are doing so good, I really hate to do this. But if you will put a checkmark where you are, we have about seven minutes to get over to the floor to vote. We have a 15-minute vote, a 5-minute vote and another 15-minute vote, which we don't have to stay for all of it. I am anticipating that we will have probably a 20- to 25-minute recess. And I apologize again, but these kinds of things are out of our control.

The hearing is recessed.

[Recess.]

Mr. THORNBERRY [presiding]. If the hearing will come back to order, the chairman will return momentarily. But he has asked us to go ahead and start. He will be here in just a moment.

Mr. Stockton, if you could conclude your testimony, please, sir, and then we will go to questions.

Mr. STOCKTON. Currently the only mission for SNM at Livermore is for studying the aging of plutonium and studying cracked plutonium pits for nuclear warheads. This same work is conducted at Los Alamos.

DOE has finally acknowledged that Livermore should be de-inventoried of its category I and II SNM. The lab could retain category III and IV quantities for their experiments, as those quantities would be of no use to terrorists.

However, DOE doesn't propose to accomplish this very important step until 2014. It is important to point out that the plan is to wait to move the materials until Chemistry and Metallurgy Research Replacement (CMRR) is built at Los Alamos, a total of at least eight years. And then all of Los Alamos' and Livermore's material is scheduled to move again by 2025 to the Nevada test site. Why build a new building at Los Alamos if only a decade later it is expected to be de-inventoried?

We have, and I think it is attached to the testimony you have, a picture of what is going on around Livermore and the encroaching neighborhood.

POGO's recommendation: If it is determined by NNSA that it wants to continue the redundant mission at Livermore, the material could be moved to the device assembly facility at the Nevada Test Site. The Livermore glove boxes and any necessary equipment could be shipped to the Device Assembly Facility (DAF). The scientists could easily take the one-hour flight to the DAF as they did for years during the nuclear test program when they need to conduct experiments with larger quantities of SNM.

I will go quickly through Oak Ridge National Laboratory (ORNL). The decision about what to do with 1,000 cans of U–233 at Oak Ridge National Laboratory has been difficult to make because the material at ORNL is utterly orphaned. ESE says NNSA owns the material, so they don't have to pay to deal with it. NNSA says it does not own it and it is ESE's problem. This stovepiping is a real problem within DOE. We understand that DOE's ESE is trying to get exempted from the 2003 DBT.

There is also similarly orphaned special nuclear material at Hanford that neither ESE or NNSA are taking responsibility for. If these special nuclear materials were removed from these two sites, both Oak Ridge and Hanford would gain by significantly reducing security needs as well as massive financial costs that go along with them.

On onsite consolidation, Highly-Enriched Uranium Materials Facility (HEUMF) at Y–12, DOE is currently constructing an aboveground building, known as HEUMF, to store the plant's hundreds of tons of HEU. DOE inspector general has criticized both the design and the cost of this new building, including that it will cost

more and be less secure than the original plan for a bermed facility.

In 2004, Sandia National Laboratory was asked by NNSA to evaluate HEUMF plans. It was ultimately Sandia's approval of this design that persuaded DOE headquarters to give the green light for the aboveground building. POGO has learned, however, that the Sandia study never compared HEUMF design with an underground or bermed design, explaining in small print that they did not want to have to consider an entire redesign for the building.

Ironically, it was an earlier Sandia study that had recommended using existing designs from two other government-owned underground facilities to solve the Y–12 storage problem, the DAF and Kirkland Underground Munitions Storage Complex (KUMSC) at Kirtland Air Force Base, which is totally underground.

There is an opportunity, however, to take advantage of the current debacle in the HEUMF construction. As you know, construction was halted about a month and a half ago on HEUMF at Y–12 because the amount of rebar in the concrete does not meet specifications. There is now talk of starting from scratch.

POGO recommendation: We suggest that you take this opportunity to stop throwing good money after bad, dramatically upgrade security at far less cost than the current plan, stop the aboveground design and take the design of the DAF, which the Corps of Engineers built for less than $100 million, far less than the $380 million that is currently estimated for HEUMF.

A second option would be to incorporate berming into the current design. DOE officials have privately suggested that berming would be an important security improvement to the building.

Pantex. Pantex stores thousands of plutonium pits, some for over 40- to 50-year-old weapons, in World War II-era bunkers in an area called Zone 4. Zone 4 is located at the end of an Amarillo airport runway.

Plutonium in Zone 4 should be moved onsite to the more appropriately located and secured Zone 12. I will skip—there are two under-utilized facilities that are terrific to store, especially nuclear material, and one is the DAF, which is hardly used, and the other is building 691 at Idaho National Lab. There was $10 million appropriated for that, but apparently it stalled.

The sites that have inadequate security standards: BWXT and Nuclear Fuel Services. Two facilities that should be of interest to the committee: BWXT in Lynchburg, Virginia and NFS in Erwin, Tennessee. They are commercially operated and primarily funded by the Office of Naval Reactors of the DOE. They house tens of tons of HEU that is owned by DOE's NNSA.

NRC regulates the facilities and is responsible for setting the DBT and to test security at these sites. However, we understand that the DBT at these two sites is significantly lower than the DOE DBT to protect the same dangerous material, HEU.

The recommendation is that POGO recommends transferring authority for security at these sites to the Department of Energy. Even with the strongest leadership from the Secretary's office, the only way these initiatives can be enacted is with your committee's continued vigilance.

DOE's history has shown that without constant pressure from Congress and specifically from this subcommittee, these consolidation initiatives will likely fail.

Thank you.

[The prepared statement of Mr. Stockton can be found in the Appendix on page 61.]

Mr. THORNBERRY. Thank you both for your testimony.

I yield to the gentlelady from California for five minutes.

Ms. TAUSCHER. Thank you, Mr. Chairman.

Dr. Overskei, thank you very much for your very thoughtful testimony.

I am impressed that when your commission was put together, that you had the foresight to look back behind you. No one in Washington ever does that. And that you found, I think you said a dozen other assemblages of high ranking, smart people who had come forward with recommendations, and virtually nothing had been done over many years.

Well, I commit to you that that will not be the state of your endeavor. I think that it is well time that we take a good look at this.

I think that your comments were important, specifically because I think you really put a bead on something that I have focused on for quite a long time, which is that RRW in and of itself is not a weapon. It is a concept, and it is an attempt to do what I think has been necessary for quite a long time.

I do represent Livermore and Sandia Lab in California. It is a beautiful place, and we have, I think, some of the smartest people in the world that have worked there for over 50 years and have been silent soldiers in winning the Cold War and doing a fabulous job.

But we do need a complex that is 21st-century, that is revolutionary, and that is really applying the best asset we have, which is thinking people. And I think that the reason to look at RRW specifically is because we need refurbishment and we need reinvestment, we need rejuvenation, and we need to be able to understand how to get the weapons from a state where they are perhaps more dangerous than they need to be, although reliable, and not necessarily the safest places, but safe, and really maximize the opportunity to have everything we can have, including a durable and safe deterrence for the American people.

So I think that I can commit to you from my personal point of view that it has been a long time coming, but perhaps this is the time that has arrived that we can work together.

And, Mr. Stockton, I appreciate your comments, and I think that what you are reflecting is obviously everybody's sense that it is time to take a lot of this material that has been unfortunately spread across a far-reaching complex, and move it into much safer and secure ways, where we can still have use of it, but we can use 21st-century technology to be able to do that and not have it exposed to either my beautiful encroaching suburbs or to bad guys. So I appreciate POGO's work. I know that you have been a longtime soldier in this field, and I appreciate the fact that you came in today to testify.

Mr. Chairman, I don't have a specific question. I am looking forward to engaging Mr. D'Agostino in the future when he testifies,

but I want to—in a very positive way. In a very positive way, because I am very happy with his appointment. But I just wanted to tell—I have an opening statement I also would like to have sent into the record, if you don't mind, Mr. Chairman, because I know that we are going to move on to testimony.

And I appreciate the time to engage both of you.

Thank you.

[The prepared statement of Ms. Tauscher can be found in the Appendix on page 46.]

Mr. EVERETT [presiding]. Mr. Thornberry, you are very good at that.

Mr. THORNBERRY. Well, I was just trying it out to see if it worked.

Thank you, Mr. Chairman.

Let me just ask briefly, Dr. Overskei, of the reports you talked about, was one of them the President's Foreign Intelligence Advisory Board report from about 1996 or so, chaired by Senator Rudman?

Dr. OVERSKEI. Well, I don't know if it was about 1996.

Mr. THORNBERRY. 1999? In that ballpark?

Dr. OVERSKEI. It was one of the ones that——

Mr. THORNBERRY. Well, I guess I beg to differ with you a little bit, because Congress acted very strongly on that, and actually enacted one of its recommendations, which was to create the NNSA to begin with. And most of the reasons, most of the concern in that report was a lot of the things that you are still talking about: not having an integrated, independent enterprise; not managing risks effectively.

So, you know, I am left somewhat with the view that we have acted but it has at least not yet—and there will be different views about why—accomplished the hopes and aspirations of the legislation or that report.

The other thing I am just struck by is that the NNSA has compiled just a chart summarizing your seven major recommendations. The first five are things that they agree need to be done and are in their recommendations. Have you glanced at what they intend to do?

Dr. OVERSKEI. Well, they have shared with me their testimony.

Mr. THORNBERRY. Okay.

Dr. OVERSKEI. And I know that there are a number of items that they are proposing to do, but I have not been privy to the details.

Mr. THORNBERRY. Okay. Well, I am just struck by the fact that many of the things, five of the seven, are basically they say yes.

The differences are more in degree, from both of you. But it seems like everybody says we have got to consolidate production, consolidate materials, and if there is a strong message I am hearing from both of you and from NNSA testimony, it is that they have some differences from you on how much to consolidate.

I think they are very much in line with the POGO testimony about a lot of the consolidation and I think that to me is the strongest thing to come out of that, so we are left with, okay, everybody agrees with this trend. Now we have a certain number of dollars to work with and various things, and we have got to try to figure out how to move down that road.

And that seems to me to kind of be a summary of where all of this wraps up. Do you disagree?

Dr. OVERSKEI. No, sir, I do not. And if I could elaborate, probably the fundamental area of disagreement is associated with the CNPC. I would believe and I would represent and be glad to go through the logic—and some of this is in the written testimony—that in fact, if you upgrade and refurbish the infrastructure in the existing sites, I will represent that it will exceed the cost of CNPC.

And the second element is that there has been some representation that CNPC is a distraction from the obligation that the complex has to sustain and maintain the current stockpile. And again, I would represent that if you have a CNPC where you are not having ongoing construction and modernization at the existing complex, those organizations like Pantex and Y–12, Sandia and the design labs can focus on maintaining the existing stockpile and focus on the RRW, where you build a new CNPC for production. And you will retain the focus and the intensity that will give you enormous benefits as far as productivity and efficiency.

Mr. THORNBERRY. And I appreciate your point of view. I think there are some other elements—people-related elements, among other things—that could be brought into it, but I don't really want to get into a debate on it.

Mr. Stockton, from what you have seen and what you have learned about the general direction NNSA proposes to take on consolidation, it seems to me to be consistent with what you had said too. Do you agree?

Mr. STOCKTON. I haven't seen all of their recommendations, I have to tell you.

Clearly, at Livermore we are not overwhelmed with the schedule there, and from my experience, if the Secretary doesn't say "I want it done" and introduce immediacy to it and have a schedule, you know—as we have mentioned in the testimony, this is two administrations from now. It could be four Secretaries of Energy from now. And everything changes. And I think that, you know, they made the decisions.

I mean, we don't know. We don't understand why they have the material there in the first place under the conditions they have it.

Mr. THORNBERRY. But you would want to push harder, and I think you have made that clear, and I appreciate that.

Thank you, Mr. Chairman. I yield back.

Mr. EVERETT. Mr. Schwarz.

Dr. SCHWARZ. I have no specific questions, but I have an interest, and I will just kind of state the interest, which probably is a universal interest, and then I have personal interest in the next two gentlemen who will testify.

But I assume what we want here is the most efficient, most secure facility we can possibly have to store existing warheads, to get on with the reliable replacement warhead, store uranium, see if plutonium and uranium should be stored in the same facility, should they be separated, and to make that facility as secure as possible.

Which brings up the question, why, if security is paramount, would we have one facility and one facility only for storage? That is a little bit of a mystery to me. And I know that if in fact that

is what at least one of you seems to advocate, you can explain why. It seems to me it would make it terribly vulnerable, even if it were underground and hardened, someone could drop a GPS-controlled, Ms. Tauscher's favorite weapon, on it.

Ms. TAUSCHER. We killed that.

Dr. SCHWARZ. And take that facility out, at which point we have no further nuclear deterrent.

So I have lots of questions. I don't have the answers. My learning curve on this is very steep. But if you get to any of that as you respond to questions, I would be most interested in those responses.

Thank you, Mr. Chairman.

Dr. OVERSKEI. May I have a quick response to that?

Mr. EVERETT. Certainly.

Dr. OVERSKEI. Let me point out that we are not proposing that the nuclear weapons, full up weapons, be stored at the CNPC. Rather, these are deployed and they are in the custody of DOD and they are stored at distributed locations. Number one.

Number two, it is important to understand that there are already four, at least four single points of failure in the complex. There is only one location that does tritium. There is only one location that does assembly. There is only one location that does pits, and actually, it doesn't produce pits, unfortunately. And there is only one location that does secondaries and the uranium.

So if you take out any one of those locations, you have taken out the capability of producing a weapon. And if this country runs into a situation where we have deployed, where we have utilized the entire deployed stockpile plus the reserves and failed for want of one additional weapon out of the complex, then we have other issues that are of greater severity.

Mr. EVERETT. Thank you.

I would say the learning curve here is really steep.

Dr. Overskei, you wanted to talk about some costs earlier, and I want to use my time to allow you to do that.

Dr. OVERSKEI. One of the elements about the cost, and I would refer to—we are talking about the cost of the CNPC, for example, because that is one of the big driver elements.

If you look at the infrastructure investment costs that have to go in—let me back up. Pantex, Y–12, our two main production facilities, are very old. Both of them require substantial investment in the infrastructure, the electricity, the steam, other support services and utilities, in addition to rebuilding the actual physical structures. And the infrastructure investment in those two locations alone are a substantial portion, greater than 50 percent, of the cost of a CNPC. But they are going to be retrofit, so you will be putting in security systems and production systems that would only meet requirements, but it is a retrofit.

And any of you that have had any real property where you have had to modernize, you realize that the cost of building something and building it to design is far cheaper than refurbishment of existing infrastructure. So we would represent that the infrastructure costs at Pantex, Y–12, are already a major portion of the cost of the CNPC.

And then as you go to Los Alamos National Laboratory, it is going to cost—and these numbers are very speculative in the sense that I don't have the accurate numbers that the Department of Energy and the NNSA is working on. But our estimation of, if you put a CMRR that is capable of doing class one and two work at LANL and if you put in the security system at LANL that they are talking about, which is a quarter of a billion dollars alone for the pit production, and about $1 billion to $1.5 billion of modernization of the pit production at LANL, and you still won't have the capacity that DOD requires, when you aggregate that with the infrastructure investments of Pantex and Y–12, you have paid for the CNPC and you will just have refurbished buildings at old World War II sites, and they will not have the security requirements that you will need in the future.

I could go into much greater detail, but I feel quite passionate about this.

Mr. EVERETT. Ms. Tauscher, have you another question?

Ms. TAUSCHER. I don't of these witnesses. I do want to get to Mr. D'Agostino, the deputy director. Why does everybody think that that is such an ominous thing? It is a good thing.

Mr. EVERETT. Let me thank this panel for being here today. We appreciate you showing up, and we also invite you to stay if you would like for the next panel.

Thank you, again. And I dismiss you at this time.

Mr. D'Agostino, I believe it is your turn at bat. You may proceed at any time. Your complete testimony will be made a part of the record.

STATEMENT OF THOMAS P. D'AGOSTINO, DEPUTY ADMINISTRATOR FOR DEFENSE PROGRAMS, NATIONAL NUCLEAR SECURITY ADMINISTRATION

Mr. D'AGOSTINO. Chairman Everett, Members of the committee, thank you for the opportunity to appear before you today to discuss our plans to revitalize and transform nuclear weapons complex infrastructure.

I have submitted my full testimony for the record. I would like to briefly summarize it here.

In this effort, we have benefited greatly from the work of the Secretary of Energy's Advisory Board Task Force on the Nuclear Weapons Complex Infrastructure, subsequently referred to as the task force, and chaired by Dr. David Overskei. Today I will describe the concrete actions that our department is taking to realize our vision for the future of the complex.

The chart that you have before you, which was referred to previously, compares our path forward with the recommendations of the task force. We agree with the task force's recommendation for the immediate design of a reliable replacement warhead or RRW. And we really believe the RRW is an enabler, providing enormous leverage for a more efficient and responsive infrastructure and opportunities for a smaller stockpile.

In addition, the greater performance margins of RRW concepts are expected to significantly reduce the possibility of the United States ever needing a return to nuclear testing.

The task force recommends that NNSA aggressively pursue dismantlement. We agree and we are. Dismantlements will increase by 50 percent next year.

The task force also recommends that the department establish an Office of Transformation to serve as an agent for change. We are creating such an office.

The task force contributed valuable insights relative to the way we manage risks and called for a more integrated and interdependent nuclear weapons complex. Already under way, we are creating multi-site key incentives and more uniformity in technical and business practices to achieve such an enterprise.

There are two key recommendations from the task force with which we partially agree but differ on specifics. The most sweeping recommendation was to establish by 2015 a consolidated nuclear production center, or CNPC, to be the single site for all production involving large amounts of special nuclear material, or SNM, that require very high levels of security.

Our approach is to establish distributed production centers of excellence which take advantage of expertise imbedded in the workforce and leverage significant prior investment in the infrastructure at these production centers. The task force also urges consolidation of large quantities of SNM to the CNPC. We strongly agree with the principle of SNM consolidation and we have proposed an approach that will move from our national laboratories large quantities of SNM requiring costly security.

Our 2030 vision will drive SNM to fewer sites and fewer locations within sites, but not to a single site.

The second chart that you have summarizes the key aspects of transformation to complex 2030. Our future complex retains two independent centers of excellence for nuclear physics located at Los Alamos and Livermore, each supported by Sandia for non-nuclear component design and a site in Nevada for testing.

Consistent with the recommendation of the task force, we plan to eliminate duplicative capabilities and activities and operate our major laboratory research capabilities and user facilities to support the entire complex. All research, development and production involving large quantities of highly enriched uranium would be carried out at Y–12. When the new uranium storage and processing facilities are operating, they will permit a major consolidation of activities and a reduction in the high security footprint by nearly 90 percent, thus lowering costs.

All activities involving large quantities of plutonium will be transferred to a consolidated production center by the early 2020's. The existing plutonium facility at Los Alamos will provide an interim capability until the new center is operational. The consolidated plutonium center is not a repackaged modern pit facility but a center that would consolidate into a single site all of the plutonium research development, production and surveillance activities that require costly security.

The location of the center remains to be determined in compliance with any required national environmental policy act process, but it would be situated at an existing DOE site having security capabilities for large quantities of SNM. We won't be creating a new site.

A new modern and efficient non-nuclear production facility building for the Kansas City plant would be in operation by 2012 and sized to produce components and conduct operations that cannot be procured from commercial vendors.

While we agree with much of what the task force recommends, we cannot commit to a CNPC. Let me explain why.

Investments in an accelerated CNPC would be in conflict with our ability to support the existing stockpile. Further, based on a review of other large one-of-a-kind projects, it is not plausible for the CNPC to be designed, built and operating on the short timeline proposed by the task force necessary to realize subjective benefits. Also, the challenges of transitioning the highly-skilled workforce to a new location, particularly in the unique and highly-skilled jobs involving uranium and plutonium are often underestimated.

Our approach achieves the benefits of the task force approach, consolidation of SNM and facilities, integrating research and development and production, aggressive dismantlement, but it does so in a way that supports near-term national security needs, is technically feasible and is affordable over both the near and the longer term.

We recognize that business as usual is not sustainable, will not be successful and it cannot be the path we choose. Indeed, our complex 2030 vision represents a significant departure from the current strategy. Working closely with Charlie Anderson and the Nuclear Materials Disposition and Consolidation Coordination Committee, SNM will be consolidated to fewer sites and fewer locations within sites.

Nuclear production will take place at centers of excellence for uranium, plutonium and assembly/disassembly in modern, non-nuclear component production facilities would significantly reduce costs associated with non-nuclear production. Focused design and certification activities will take place at national laboratories that are not encumbered by responsibilities for nuclear production or security requirements for large quantities of SNM.

The Nevada Test Site would become the single site for all testing involving large quantities of SNM. As a result of these activities, the physical footprint of the weapons complex will be substantially reduced.

Finally, accelerated dismantlement of retired warheads and fewer deployed warheads based on RRW concepts that reduce the need for nuclear testing ensure the stockpile and infrastructure transformation is not misperceived as restarting the arms race.

Over the next 18 months, I seek to demonstrate that the transformation path that I described here today is fully viable and through the list of commitments on the third chart show that we are getting the job done. By 2030, the vision I set forth is of a world where a smaller, safer, more secure stockpile with assured reliability over the long term is backed by an industrial and design capability to respond to changing technical, geopolitical or military needs. It offers the best hope of achieving the President's vision of a small stockpile consistent with our national security needs.

Thank you for your attention, and I look forward to your questions.

[The prepared statement of Mr. D'Agostino can be found in the Appendix on page 73.]

Mr. EVERETT. Thank you.

Mr. Anderson.

STATEMENT OF CHARLES E. ANDERSON, PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR THE OFFICE OF ENVIRONMENTAL MANAGEMENT

Mr. ANDERSON. Good afternoon. My name is Charlie Anderson. I am the Chairman of the Department's Nuclear Materials Disposition and Consolidation Coordination Committee (NMDCCC), quite a mouth full.

I am pleased to be here today with Deputy Administrator D'Agostino to provide you an update and answer your questions on the Department's efforts to consolidate and disposition its nuclear materials.

Mr. Chairman, I want to thank you and your subcommittee for your interest in this complex challenge. It is vital to our nation's security.

Last year Secretary Bodman formally chartered the Nuclear Materials Disposition and Consolidation Coordination Committee. While individual programs, such as the NNSA, as addressed by Tom a moment ago, the Office of Nuclear Energy and Environmental Management have their own disposition and consolidation projects, the purpose of the Department's committee is to ensure integration of individual program efforts thus identifying opportunities for resource sharing.

The principal mission of our 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.

I have personally been involved in nuclear material management for a number of years, currently with the Office of Environmental Management and previous positions, including with NNSA.

Nuclear material disposition and consolidation is important to the Department and while progress on intra-site consolidation has been made, the Department has been less successful in transferring nuclear materials from one site to another. But some progress has been made.

As illustrated by a few charts that I have brought today, currently we have our nuclear materials in category I facilities at 10 sites across the DOE complex. Category I materials are typically those materials, types and amounts that are stored in one location that could easily be made into a nuclear weapon.

In 1995 there were 36 category I facilities across the complex. As noted on the chart here, it is a different location. I will note the ESE designation there for environment, science and energy is basically just to show the non-NNSA locations versus the NNSA. And then, also, then, as we show, in Tennessee, where we have both interests.

As the next chart will show, in 2006 we are down to 21 category I facilities. I won't go into each one of those, but the charts are available for you and we can follow up with questions related to that later.

Since becoming Chairman of the committee in November 2005, meetings have occurred at least once a month, and have included representatives from each of the DOE organization that are responsible for nuclear materials, as well as senior advisors from other organizations within the department. I am also briefed with the Defense Nuclear Facilities Safety Board monthly since my appointment on the progress of the committee.

It is made clear to me that the Secretary expects the NMDCCC to make progress. Our committee needed a streamlined approached to and a clear understanding of the challenges it faced. I indicated in testimony before the House Energy and Commerce Subcommittee on Oversight and Investigation in October 2005 that the committee was about a year and a half away from delivering a strategic plan. We are making progress on a strategic plan and it sets the stage for my committee to develop individual implementation plans.

An individual implementation plan will consist of: a clear, concise statement of the problem; a listing of all known pertinent facts, including source documents for those facts; a listing of alternatives; cost evaluation of viable alternatives; and a recommended path forward. I refer to this a lot as the scientific approach to solving our disposition and consolidation problem.

Implementation plans will be transmitted, as appropriate, to the Secretary for final decision after approval by the committee.

Through our work on the strategic plan, the committee has identified eight near-term issues we need to address. Consolidation of excess plutonium-239, which you have heard some discussion about today. I will note that some of these issues have some overlap, which I will try to address either in questions or through some of the discussion here.

This consolidation of plutonium-239 is particularly noted in relation to the material in Hanford, the material at Lawrence Livermore and the material at Los Alamos.

The removal of surplus weapon pits from zone 4 at Pantex. Plutonium-239 material, the surplus material destined mostly for the mixed oxide (MOX) fuel fabrication facility we constructed at the Savannah River site. Removal of all category I and II material from Lawrence Livermore National Laboratory. I speak to this as not all the material there is just plutonium-239, but we have to look at all of the special nuclear material there that needs to be removed and relocated to another area.

Disposition of the uranium-233 from the Oak Ridge National Laboratory. Removal of surplus material from Y–12, including material like the Aberdeen material. Removal of surplus material from Los Alamos National Laboratory. Removal of the Sandia National Laboratory nuclear materials. And consolidation of plutonium-238.

As you can see from this list, a lot of it overlaps both the needs of the consolidation or the complex 2030 program that Tom D'Agostino talked about here, as well as some programs with Nuclear Energy and the Office of Science.

We have concluded the top priority currently facing our committee was to identify a path forward for the plutonium-239 at our Hanford site, determined to be the highest priority at this point

chiefly because of the urgency associated with removal of this material in order to avoid the expenditure of significant funding at Hanford to meet the latest security requirements, which would require a new facility at Hanford.

While developing the implementation plan of consolidation of plutonium-239, the committee has identified three alternatives primarily and is currently evaluating each. That would be the continued storage at the current sites, consolidation and storage at an interim site and consolidation and storage at the disposition site.

Consolidation of this material is being encouraged by Members of Congress, stakeholders, the Government Accountability Office, and the Defense Nuclear Facilities Safety Board. Our committee is currently reviewing the pertinent facts and evaluating the cost associated with the alternatives, including looking at previous reports and studies that have been done over the past decade about this material, ever since the end of the Cold War.

These facts include the necessary steps that need to be taken to meet applicable statutory requirements, before developing the recommended path forward.

In closing, it is very important to keep in mind that, while the Department has not yet made a decision to further consolidate nuclear materials, the committee is very active, and our activities are initially focused on completing the strategic plan and the implementation plan for the plutonium-239 material.

Thank you for allowing me the opportunity to testify, and at this time I would like to submit my full statement for the record.

Mr. EVERETT. Without objection.

Mr. ANDERSON. And I would be pleased to answer any questions related to consolidation and disposition efforts.

[The prepared statement of Mr. Anderson can be found in the Appendix on page 86.]

Mr. EVERETT. Thank you.

Mr. D'Agostino, perhaps you can help me understand something. Around here, we know if we postpone something for a year, then by X factor it is more expensive the next year and then the next year and then the next year.

Mr. D'AGOSTINO. Yes, Mr. Chairman.

Mr. EVERETT. There are those who say that the life expectancy of these warheads is 40 or 50 years, and then there are those who say it is anywhere from 70 to 80 and perhaps 90 years. Can you give me an idea of how long the life expectancy may be? And if the life expectancy is longer than we have been given by NNSA, are we better suited to go ahead and start replacement because of the increase in cost that we will incur later on?

Mr. D'AGOSTINO. I will take the question, and the answer to the first question will then get into the second question. And if I miss the intent of the second question, I would ask you to repeat the question.

The history of the weapons program was such that the nuclear weapons complex during the 1960's, 1970's and 1980's was always in a mode, as Dr. Overskei described, of continually exercising the various legs of design, development, production, certification, testing and back around again. So we were constantly in a mode of cycling just the nature of where we were at the time.

And so, in essence, we were going through a cycle of where warheads would be cycled through, depending on the specific military need and the design cycle, in 50- and 30-year cycles. So, in essence, the original design life, and again, the weapons were based around that type of a flow rate.

In the early 1990's, when we shifted into a stockpile stewardship program, where requirements essentially stopped, we realized that we needed to ensure through stockpile stewardship and the tools we developed, that we understood exactly the aging mechanisms, because we figured we don't have a history beyond 30 years typically on many of these components.

And so we went through a system-by-system, component-by-component and part-by-part analysis across the whole set of warheads and legacy stockpile to determine which parts need to be replaced exactly the way they were previously designed in order to ensure ourselves that we were maintaining that stockpile out into the future. And we call this the life extension program. And we gather these types of activities in blocks.

We completed the life extension program for the W87 warhead and we are in the process, as you know, sir, on the B62 warhead, the W76 warhead and the W80 warhead life extension activity. So the path we are on right now continues on with the idea that every 20 to 30 years or so we would cycle warheads through a successive series of life extension, as Dr. Overskei describes. The key is that the life extension process that I have just described replaces components exactly the way that they were designed before. It is an exact replica.

The difference with RRW is to build robustness into the components themselves, instead of just replacing the exact internals, we would ensure that we have the right components, that are sustainable over the long term, that are easier to manufacture, that drive safety and security into the system itself.

So there is no magic number that says after a certain period of time the weapon is essentially not useable anymore, because our approach over the last 15 years has been to employ the stockpile stewardship, and we were in the process of continuing that stockpile stewardship lifecycle of LEPs.

But now we are entering into a new phase, and with the concepts that Ms. Tauscher described earlier and Dr. Overskei described earlier, there is an opportunity to drive the complex in a different direction, one we feel that has better long-term sustainability for the complex in addition to ensuring that our design margins over time remain sufficiently far away so we will never need to come back to nuclear testing.

In that long answer, I probably forgot your second question. I apologize, Mr. Chairman.

Mr. EVERETT. No. I was just concerned that the cycle is every 30 years, and we know that the warheads last for 50 years. Should we be on a 50-year cycle of replacement? Or should we be continuing on a 30-year cycle of replacement when we put RRW into effect?

Mr. D'AGOSTINO. The danger, of course, even with a 30-year cycle, and Dr. Overskei talked about it, we agree, is this concept of exercising the workforce. We need to get the workforce commensurate with the size of the stockpile, get it focused, and exercise

our design and production complex so we don't go through periods similar to where we are right now, where for essentially the last 15 years we have not exercised our production complex the way you would exercise when you are maintaining an automobile vehicle, which is to keep it exercised so that we know that it works.

So even if some say that the warhead would last 50 years, the problem is that if it lasts 50 years with a design that is 50 years—that was done 50 years ago and it doesn't introduce modern surety and safety features into the weapon itself and allows us to make sure that that weapon is protected.

So the concept of exercising the complex, whether it is on a 15-year cycle or a 20-year cycle, I think we are going to be running through some detailed cost studies to figure out what the optimum cycle is to maintain the smallest, most cost efficient production complex and at the same time ensure that we have a workforce that feels that they are engaged in the program and are there for a reason, and they are not just waiting for 15 years for that next system to come through.

I cannot overestimate the importance of the workforce in the weapons complex. These are folks that are committed professionals. They have very unique skills. They know what they have been doing. They have passed on these skills to successive workers that have come through behind them, and it is really not just the facilities and the infrastructure that we talked about, which we think of as a lot of bricks and mortar and maybe special tools that Congress authorizes and we go off and build. But it is actually the workers that know how to use these tools that really make these things happen.

Mr. EVERETT. Thank you.

Mr. Anderson, my time is up, but I want to come up to you a little later. Right now I am going to give Ms. Tauscher 5 minutes.

Ms. TAUSCHER. Thank you, Mr. Chairman.

Deputy Administrator D'Agostino, welcome. This is your maiden voyage——

Mr. D'AGOSTINO. Yes, it is. Thank you, Ms. Tauscher.

Ms. TAUSCHER [continuing]. After your confirmation and your swearing in.

Mr. Anderson, welcome too.

Let me see, Mr. D'Agostino. This plan to consolidate the plutonium from Livermore over to CMRR at Los Alamos, I just want to have some assurances that Lawrence Livermore scientists that actually go to Los Alamos will have, you know, significant enough peer review ability and that won't be impacted, that there will be protocols developed to ensure that they can really effectively and safely operate at CMRR. I mean, this is part of what a congresswoman representing Livermore would do. But I think that this is an important issue, that these assurances are made clear and on the record and I assume that you would make them.

Mr. D'AGOSTINO. Absolutely. I will wholeheartedly agree with your position and your points. I think it is consistent with the idea of an integrated and interdependent enterprise. The concept of interdependency is one that we haven't capitalized on and we need to, and part of that recognizes the fact that scientists at Lawrence

Livermore are interdependent on the facilities and capabilities the Nation has placed at Los Alamos.

That doesn't mean that one laboratory gets a precedent over the other laboratory. Peer review is critically important here and I agree completely with the concept. I support it 100 percent.

Ms. TAUSCHER. I am very impressed by your statements today and your testimony and our private conversations.

I think that it is very important to recognize the partnership here between the intellectual asset base that we have in our scientists in these jewels in the crown in the national labs, and also that we have a very deteriorated complex that has ill-served everyone for a while, and that it is important to maximize their capabilities by now refurbishing the complex and bringing it up to not only code, but certainly to deliver for them and for the American people the kind of assurances that we have them doing the work that they need to do.

Coming off of the chairman's question about the utility and the age of weapons, I think the pits are the real issue here, and I think that you and I have had a conversation before. There seems to be—and I know you are doing a study—there seems to be widely varying estimation of how pits age and actually are we at the half-life of pits at 50 years or are they really, really old and have to be replaced, or actually were the scientists and the designers so conservative over the last 30 years that actually—this would not surprise me, by the way—that actually they can go for 2X more time. They actually could go a lot longer.

And I know you are doing a study to take a look at that. I think this is an important piece of our decision on investment policy going forward, because the pits—could either be a big thing, which I am not for right now, intellectually.

But can you just talk, very briefly, or even answer us, to the staff specifically, in writing, your concept of what, depending on the answer for this study, what you think the opportunities are going forward on the pit facility and how that kind of goes into everything else?

Mr. D'AGOSTINO. Absolutely. I would like to do both, actually, respond orally and then follow it up with writing to the subcommittee. I think it is important that you have a written down answer to that question.

But let me talk a little bit about plutonium. Plutonium, as you know, is a manmade material. The oldest bit of plutonium we have dates back, obviously, many decades ago, but that is it. That is as far as we know about the aging of plutonium, and we are conducting accelerated aging studies, as you have described in your question.

We do have what we call a level 1 milestone, which is a milestone that we track, which we feel has got significant importance not only within the program, but within the department, and has interest across government agencies, including the legislative branch of the government itself, and that level 1 milestone has to do with determining, getting a system specific pit age characteristic for each of our systems. Since our systems are different, it is not just a matter of taking a number like, maybe 45 years, for example,

and saying, well, that is it for everybody. Because each system is different.

And you are right, there have been a wide variety of years that have been out in the press and in discussions over a wide range, describing what this would be. Our level 1 milestone is due to be complete at the end of this fiscal year and it will be independently reviewed by the group that you are aware of, a technically competent, independent group. And in all likelihood, they will probably ask for more data, but we do have information that we will be able to provide.

But even looking at the concept of, let's say, for example, that the age is 2X or maybe even 3X, whatever the case may be, it is important to recognize that the reason why—responsive infrastructure is one of the legs of the nuclear posture review, an important element, an important part of assuring not only ourselves but our allies that we have a nuclear weapons enterprise that is responsive, that serves as an effective deterrent. Because essentially we want our deterrent to reside in our complex itself, not necessarily in the number of warheads we would have. And that helps us drive the stockpile numbers down.

So by not having a plutonium capability, it gives our customer in the Defense Department and ourselves pause on whether we truly have a responsive infrastructure. But even setting responsive infrastructure aside, I would even submit that the idea behind the RRW, reliable replacement warhead concept, is to design in margin into the pit itself in order to ensure that we push our way further away from nuclear testing and get ourselves away and design a sustainable nuclear weapons stockpile.

In addition to the sustainability question, we want to be able to design in features that enhance the security and surety of the weapon itself, so that the weapon itself is safer, easier to handle, easier to manufacture, gets us further away from design margins and reduces our chances of testing, and is in a situation where if somebody should happen—if we happen to lose control of a weapon itself, it would essentially not be a weapon because of the types of technology features we have inserted, and that is a very important part of RRW concept that we talked about.

I will follow up with a written answer——

[The information referred to can be found in the Appendix beginning on page 108.]

Ms. TAUSCHER. I appreciate that.

Mr. D'AGOSTINO [continuing]. On the numbers themselves on pits, if I could, please.

Ms. TAUSCHER. That is right, and we can share it with the committee.

And, Mr. Anderson, thank you for a good job at EM. I don't have a question for you.

Thank you, Mr. Chairman.

Mr. EVERETT. Dr. Schwarz.

Dr. SCHWARZ. I never thought that I would have to deal with physics again, because that is why I became a surgeon, because they kind of lost me after the incline plane and the mechanical advantage of pulleys in physics. So here we go.

What I think would be best, Mr. D'Agostino, is perhaps if you could arrange some kind of a private tutorial for me, especially on the characteristics of the isotopes about which you speak. I was more conversant with them at one time. I did know a little bit about plutonium-238 and plutonium-239 and the various isotopes in uranium and what their qualities are, their half-lives, their applicability in atomic weapons. I do not anymore. It has long since been forgotten.

And so I am not, Mr. Chairman, going to ask any questions, unless you would like to do a real quick couple of minutes on the characteristics of these isotopes. But I think I need to spend a little time with yourself or someone that you have appointed to come in and reacquaint someone who has been out of any sort of physics and only had just a smattering, a smidgeon of nuclear physics, when I was a student. It would help to understand this a lot more, and I want to understand it. I don't want to sit on this subcommittee or on the full committee not precisely understanding what you are doing.

Mr. D'AGOSTINO. Mr. Schwarz, I would love to come in with some folks and bring you up to speed on some of your questions. And we will be able to set that up with the staff.

Dr. SCHWARZ. Thank you.

Thank you, Mr. Chairman.

Mr. EVERETT. I promised, Mr. Anderson, I would come back to you, and here I am.

We spent an awful lot of money on—I will get it out in a minute—plutonium, especially at Hanford. Can you give us an idea of what obstacles you face, particularly state obstacles in Washington state and South Carolina, that has caused us not to move perhaps as quick as we should?

Mr. ANDERSON. Yes, sir.

First of all, as we are looking at the alternatives, one of the mistakes we did not want to repeat previously is to make sure we clearly laid out all of the alternatives. So in doing so, in going through the alternatives, we look at what some of the obstacles are. Some of those being dealing with a couple of the public laws that exist, the National Defense Authorization Act for Fiscal Year 2002, commonly referred to as Public Law 107–107, which requires a clear identification of the disposition path for all plutonium received at Savannah River site after a date in 2002.

That is for material that was not—that is for all of the plutonium material. There is another, the National Defense Authorization Act for Fiscal Year 2003, which has certain requirements related to the performance objectives for the mixed oxide fuel fabrication facility, for those materials that are planned to be processed through the mixed oxide fuel fab process. We have to make sure that we satisfy those. Some of those are reports that are required to Congress. The first one is a report that is required for disposition for all of the material that is received into Savannah River site.

Obviously, there is a need for analysis that we are reviewing to make sure we are covered and make sure we both have the analysis and also determine where we would have to amend any Record's of Decision (ROD's) for a decision that we would make.

And in this case, almost any decision we are going to make here would require some amended ROD, at a minimum.

Those would be the primary things that we are looking at. I mean, we are looking hard to see if there is anything else, because we don't want to go down a path and find that we missed a law.

Some of these also have to do with shipping containers, shipping casks. Not all of this material is in one form. In fact, most of it is in varied forms, and that is why I alluded to some overlap from the issues that we have.

I mean, a lot of times, when we are questioned in relation to removing material, people will be discussing the majority of the material, which may already be in a form or in a container that is pretty straightforward, but there will be substantial other material that has to have some work done on it, or a special shipping container if we are going to ship it. And those are the primary barriers that we have looked at.

Mr. EVERETT. Ms. Tauscher.

Ms. TAUSCHER. Mr. Chairman, I have nothing else to ask. Thank you for offering, though.

Mr. EVERETT. Dr. Schwarz.

Dr. SCHWARZ. I said my piece and now I need to be taught.

Mr. EVERETT. Gentlemen, thank you very much.

We may have, for both panels, we may have some questions for the record, which we would ask you to respond to in real-time rather than Washington time, and I am talking about maybe 30 to 45 days, and we will make that distinction a little plainer in our request.

Thank you again for coming.

And the hearing is adjourned.

[Whereupon, at 5:58 p.m., the subcommittee was adjourned.]

A P P E N D I X

April 5, 2006

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

APRIL 5, 2006

Opening Statement
The Honorable Terry Everett
Chairman, Strategic Forces Subcommittee

Hearing on Plans for Transforming the Department of Energy's Nuclear Weapons Complex

April 5, 2006

The hearing will come to order.

The Strategic Forces Subcommittee meets today to receive testimony on plans for transforming the Department of Energy's nuclear weapons complex. Thank you all for coming.

I would like to welcome our first panel witnesses:

- **Dr. David Overskei (O-ver-ski), Chairman of the Nuclear Weapons Complex Infrastructure Task Force**
- **Mr. Peter Stockton, Senior Investigator, Project on Government Oversight**

Our second panel witnesses will be:

- **Mr. Tom D'Agostino (Da go sti no), Deputy Administrator for Defense Programs at the National Nuclear Security Administration, and**
- **Mr. Charles Anderson, Principal Deputy Assistant Secretary in the Office of Environmental Management at the Department of Energy**

The subject of how to transform the nuclear weapons complex is not new—nor is it easy. There have been many studies conducted over the last twenty plus years on how best to modernize our Cold War era weapons complex. In spite of numerous studies, there has been little change and almost no actual transformation. We cannot continue to proceed down the same path year after year. Doing so will put at risk a key attribute of our Nation's defense: our strategic nuclear deterrent.

In last year's defense authorization bill, this subcommittee drafted and enacted, with bipartisan support, legislation setting forth the objectives of the Reliable Replacement Warhead or "RRW" program. That legislation was accepted by our Senate colleagues and is now established law. At the time, we saw the RRW program as laying down a foundation for the required capabilities of the future weapons complex infrastructure.

Today, with the RRW program concept in place, we will hear from our witnesses on what steps could or should be taken to modernize our complex, consolidate nuclear material and reduce security costs. There are many different opinions on how best to accomplish transformation. Along with my subcommittee colleagues, I look forward to hearing from our witnesses today on this critically important subject.

We have a lot of ground to cover today, and I want to allow each of our members as great an opportunity as possible

to ask questions. I would ask our witnesses to please be brief with their prepared remarks – the entirety of your written testimony will be entered into the record.

Let me now recognize my good friend and colleague, Mr. Reyes, the Ranking Member of the subcommittee. Mr Reyes…

[Following Mr. Reyes' remarks]

[Recognize Mr. Hunter and/or Mr Skelton if present]

We will now start with our first panel. Dr. Overskei, the floor is yours.

[Following Dr. Overskei's testimony]

Thank you Dr. Overskei. Mr. Stockton, the floor is yours.

[Following Mr. Stockton's testimony]

Thank you Mr. Stockton. We will now proceed with questions for our first panel.

[Proceed with Q&A for first panel]

That concludes our first panel session. Gentlemen, thank you for coming. You are invited to remain in the hearing room for the second panel.

We are now ready to commence our second panel session. Mr. D'Agostino, the floor is yours.

[Following Mr. D'Agostino's testimony].

Thank you Mr. D'Agostino. Mr. Anderson, the floor is yours.

[Proceed with Q&A].

Thank you all for taking the time to be with us today. Your statements and comments are very helpful as we consider this complex and important issue.

The hearing stands adjourned.

Opening Statement
Honorable Silvestre Reyes

Hearing on the Department of Energy's Plans for Consolidating Nuclear Materials and Creating a Responsive Nuclear Weapons Complex

Subcommittee on Strategic Forces
House Armed Services Committee
April 5, 2006

Thank you, Mr. Chairman, and I join you in welcoming our witnesses: Dr. David Overskei, who chaired the Nuclear Weapons Complex Infrastructure Task Force for the Secretary of Energy; Peter Stockton, Senior Investigator for the Project On Government Oversight; Tom D'Agostino, NNSA's Deputy Administrator for Defense Programs; and Charles Anderson, Principal Deputy Assistant Secretary for Environmental Management.

I want to thank each of our distinguished witnesses for taking time from their busy schedules to be with us today.

I also want to thank my friend, Chairman Everett, for providing me with the opportunity to set the stage for the hearing today from my perspective. Nuclear weapons and our

nuclear weapons complex play a very different role in our national security posture than they did during the Cold War.

Almost 15 years have passed since the collapse of the old Soviet Union, and almost 14 years since the last U.S. nuclear weapons test on September 23, 2002. Much has changed since that time; however, the *legacy* of our nuclear weapons competition with the former Soviet Union lives on in the weapons, facilities and materials that remain.

While Russia and the United States agreed in the Moscow Treaty of 2002 to limit deployed nuclear warhead to a level of 1,700 to 2,200 each by the end of 2012, the United States retains a significant stockpile of old weapons in reserve. DOE's life extension programs for deployed systems have not convinced the Department of Defense to part with its reserves. The stockpile of old weapons is retained based on concerns that we might find a fatal defect in one or more of our deployed systems and that we cannot rapidly produce new systems.

And while the two nations agreed in June 2000 to dispose of at least 34 metric tons of plutonium each beginning next

year – in 2007, this program has been stalled for years over the issue of liability and may face additional hurdles according to recent briefings by the Administration.

Finally, even in this post-9/11 era, when stocks of nuclear weapons and materials represent particularly attractive targets, weapons-grade nuclear materials remain in storage at facilities such as Hanford, Washington that no longer perform any nuclear weapons-related activities.

Concerns about the safety, security, reliability and cost of our nuclear weapons enterprise have been of continuing interest to the subcommittee. The hearing today allows us to explore the Administration's plans for maintaining our nuclear deterrent without returning to testing and for securing nuclear materials within our own borders and without further busting our budget.

In January of 2005, the Secretary of Energy established a Task Force 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." Dr. Overskei chaired that Task

Force and is here today to discuss the Task Force's final report which was transmitted to the Secretary last October.

The Task Force delivered a bold report that made numerous recommendations. But its key proposals focused on revitalizing the nation's nuclear weapons complex through: (1) pursing development of a Reliable Replacement Warhead and (2) consolidating all production and storage involving weapons-grade nuclear materials in one underground location.

The NNSA Administrator, Ambassador Brooks, assigned Deputy Administrator Tom D'Agostino responsibility for evaluating the Task Force's recommendations, and preparing NNSA's plans for creating a responsive nuclear weapons infrastructure. Mr. D'Agostino will describe those plans for us this afternoon.

The Department of Energy stores weapons-grade nuclear materials at 13 sites around the nation, some of which have no current relationship to the nuclear weapons business. After the 9/11 attack, the agency reevaluated its security posture. The Department concluded that significant improvements should be made, based primarily on the risk of a terrorist

being able to fabricate an improvised nuclear device after gaining access to these materials.

The new security posture requires expensive upgrades. Yet DOE's current security costs are already substantial – the FY 2007 request for nuclear security activities, including both NNSA and the Environmental Management program, exceeds $1 billion!

The Project on Government Oversight – POGO – conducted an investigation in 2005 evaluating the Department's plans for protecting weapons-grade materials. They found that "disposing of excess nuclear materials and consolidating the remaining materials in fewer and more easily-defended locations could save the government billions of dollars over three years while also better protecting the public from nuclear terrorism." Mr. Stockton is here today to discuss POGO's recommendations.

While the Department's efforts to consolidate nuclear materials are intimately related to improving security and reducing costs, it is notable that consolidation plans have been slow in developing. It was not until this past November that

the Secretary appointed Charles Anderson to Chair the Department's Nuclear Materials Disposition and Consolidation Coordination Committee. Mr. Anderson is here this afternoon to discuss with the subcommittee the Department's plans for moving forward with disposition and consolidation efforts.

Mr. Chairman, thank you again for the opportunity offer my opening remarks on these important issue. I look forward to hearing from our witnesses and I yield back the balance of my time.

Statement
Strategic Forces Subcommittee Hearing
Rep. Ellen O. Tauscher

Thank you, Mr. Chairman. I look forward to the testimony of our witnesses, and to working with you and Mr. Reyes to ensure that the NNSA and our nuclear weapons complex are equipped to maintain the U.S. nuclear deterrent without testing.

As we consider changes to Stockpile Stewardship and to the designs of our nuclear weapons, it is essential that the NNSA sustain the intellectual capital that underpins our deterrent.

People are vital but structures matter as well. I look forward to working with Mr. D'Agostino and Ambassador Brooks to ensure that the NNSA becomes a more effective steward of our nuclear complex.

I reject the current proposal from the Department of Energy to merge the NNSA's intelligence functions with those of DOE.

I also believe that this subcommittee should review NNSA's role in the budget process as priorities and funding for nonproliferation and other programs has been contentious at times.

This is a time of great opportunity for the complex.

The Reliable Replacement Warhead Program holds the promise to transform our nuclear footprint, make the enterprise more effective and reduce the likelihood of underground testing.

If we are successful in achieving a safer, more reliable arsenal that makes use of more benign materials and if it is accurate that plutonium has a longer shelf life than expected, we will be able to achieve drastic cuts in the size of the arsenal.

Ultimately, I believe that RRW and the improved arsenal it promises will confirm the need for the United States to ratify the Comprehensive Test Ban Treaty.

Ratification would strengthen US leadership in controlling the spread of weapons of mass destruction and bolster global norms against proliferation.

I will continue to work with the NNSA to ensure that it supports the national laboratories as they provide innovative solutions to maintain confidence in our weapons and the processes needed to assess, maintain and certify them.

As Tom knows, Lawrence Livermore National Laboratory in my district has been a leader in the effort to maintain the U.S. nuclear deterrent without nuclear testing, in fact LLNL led the invention of the Stockpile Stewardship Program in the early 1990s.

A vital LLNL will continue to be critical to the successful transformation of the nuclear weapons complex.

In fact the work of all three national labs will be vital as the nation confronts a number of other challenges from addressing the threat of a nuclear North Korea and Iran; implementing the vision put forth in the Department of Energy's Global Nuclear Energy Partnership; potentially strengthening our nonproliferation efforts in South Asia; and developing new critical homeland security technologies.

In closing, I look forward to Tom's leadership at the NNSA in transforming the complex into an efficient and integrated system that successfully employs the scientific ingenuity of the NNSA labs.

Statement of Dr. David O. Overskei
Chairman of the Nuclear Weapons Complex Infrastructure Task Force
of the
Secretary of Energy Advisory Board
to the
Strategic Forces Subcommittee
of the
House Committee on Armed Services
hearing on the topic of
The National Nuclear Security Administration's (NNSA) Future Plans for the Nuclear Weapons Complex Infrastructure
April 4, 2006

Chairman Everett, Representative Reyes 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.

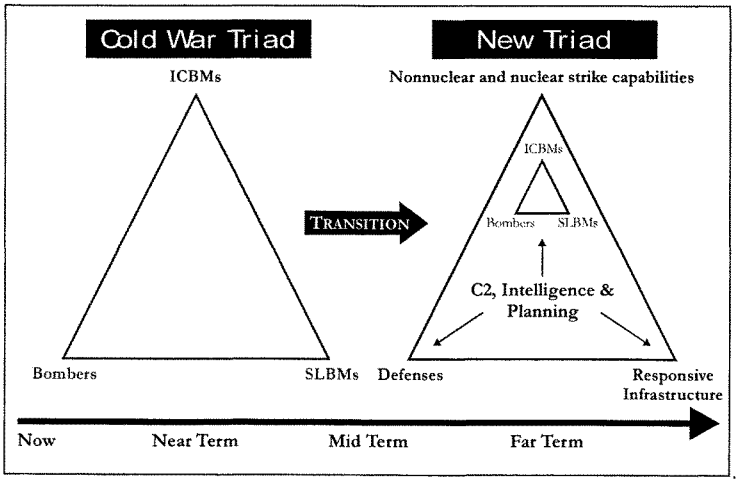
To give you some context, our Task Force was established as result of a commitment made by the Secretary of Energy to the House Appropriations Subcommittee on Energy and Water in testimony on March 11, 2004. This commitment was recognized and mandated in the House Energy and Water Appropriations Bill 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."

I and five colleagues, along with four support staff provided by the NNSA, worked virtually full time on this effort from the period of February 2005 until July 2005. We completed our report in July 2005 and it was submitted to and accepted by the Secretary of Energy Advisory Board on October 4, 2005. We believe that our conclusions represent a vision for the future that meets this Nation's national security requirements and the needs of all of the Complex stakeholders, but we recognize that our report does not reflect the desires of all the stakeholders. I hereby submit our report, Recommendations for the Nuclear Weapons Complex of the Future, for the record.

I want to spend a few minutes discussing our process, because it included a broad range of stakeholders in addition to personnel inside the Complex. We began the process by studying 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, the staff and members of Congress who have oversight of the DOE nuclear weapons programs, and senior members of the National Nuclear Security Administration.

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. I shall dwell on this last point, because I believe it is important.

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, noting that, generally, few of these efforts had much impact on the Complex. This gave us pause as to our ability to really effect 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 does not consider the Complex productive or responsive, and none of the stakeholders view the Complex as responsive in 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 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.

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 past,
- The DoD does not operate as a partner with DOE. The DoD does not provide DOE with unified and integrated weapon requirements,
- 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 desire. 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 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 would 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 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 scientific and engineering intellectual capital base at the design laboratories. This base would innovate, conceive and test feasible solutions to address any future threat to our national security. This should not be facility driven since the facilities of the past may not be relevant 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 to the stockpile, of any type, in any year, 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, and the ability to resume testing in 18 months. It is felt that these time scales could credibly be further reduced by a factor of 2. This also implies a management and leadership organization capable of making timely decisions that balance risk, benefit, performance, and cost.

We believe that these attributes must be constantly exercised, demonstrated, and tested for the Complex to be an effective contributor to the New Triad of deterrence. Thus, our vision would have the Complex continuously designing, testing, producing and dismantling nuclear weapons on a regular schedule.

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

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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. The Task Force recommends that successive versions of the RRW, incorporating new design concepts and surety features, 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. 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 the current and future terrorist threat 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 future as yet unspecified Design Basis Threats. This will substantially reduce Complex exposure to terrorist threats while increasing Complex efficiency in transportation, security, and other operating areas. In addition, this action will reduce if not eliminate the exposure of communities contiguous to the future weapon Complex sites that could be targets of terrorist attacks. This 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 need to 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 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 nor as detailed as we desired, but was the best possible given the constraints. We focused on analyses of the sensitivity to specific actions. Implementing all recommendations can be done with little or no budget increase if one is willing to reduce diversity in the current stockpile, reduce redundancy in the Complex, reduce employment at each site and 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. There is of course a continuum between the two options.

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 will be a critical element of the New Triad, our overall deterrence posture, and our national security capability well into the future.

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 I 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.

I close by drawing your attention again to the report published by Sandia National Laboratories, mentioned in my introduction, summarizing the consequences of the numerous studies of the Complex conducted since 1980. It is sobering to realize that our Task Force proposes steps not that different from what has been proposed by others repeatedly over the last 25 years. The fact that little has changed is a testament to the resistance to change in the Complex, the DOE, and the DoD. Further, this is a consequence of a Congress who has not been willing to support change through legislation.

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 Congress and the Administration just needs to decide to do it.

This concludes my testimony. However, I was also asked to specifically provide perspectives on budget constrained alternatives that do not include a CNPC. There are two aspects to the CNPC: first a modern production capability; second a secure site for consolidation of SNM to reduce risk and minimize security costs. The current Complex sites and facilities were not designed for modern production or to meet the security requirements associated with the Design Basis Threat, which continues to evolve. In addition, the current sites have deteriorated infrastructure, which need to be repaired if it is decided to continue the use of these sites long into the future. Further, the CNPC would be designed for these applications, not retrofitted, and would be designed for the DBT. Both are important considerations. Thus, the infrastructure and security investments in the individual current Complex sites will greatly exceed the cost of the CNPC. A more detailed response is in my written statement.

Mr. Chairman and members of the Committee, I thank you for your attention and I am prepared to take questions.

A More Detailed Response to the Alternatives to a CNPC.

I was asked to specifically provide perspectives on budget constrained alternatives that do not include a CNPC. The comments in the remaining portions of my statement are my own and should not be construed as representing a consensus of the Task Force, in whole or in part.

There are two aspects to the CNPC, one modern production, the second the site for consolidation of SNM to reduce risk and minimize security costs. I shall treat each separately.

1. **Modern Production.**
   a. **Modernization in place:**
   There are 3 locations that currently perform functions critical to the production of nuclear weapons: Pantex for assembly and disassembly; 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. The relevant facilities at all three locations are antiquated and need to be modernized. For example, as of the conclusion of our report, TA 55 did not have one numerically controlled machine or non-contact metrology devices to produce and measure pits, the most critical precision component in a weapon. They are 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 infrastructure to support ongoing 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. Here are the projected capital costs for modernization in place of the complex production capability (these projections are lower bounds and still increasing):

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:	
HEUMF for HE storage:	~$320 M*
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*

   * means that these activities are currently in process, although many just started
   If we modernize in place, instead of building a CNPC, we will invest ~$3 B in modernizing 3 separate sites, each of which is a challenge to secure from a physical security perspective. Because they are at three different locations, there are no savings in

shared infrastructure and shared operating expenses; in addition, SNM transportation costs will grow.

b. Modernizing only plutonium and uranium production:
Great benefit is achieved by consolidating all of the plutonium and uranium work at Y-12. These are the precision manufacturing and associated production chemistry facilities for plutonium and highly enriched uranium. This approach will remove production from LANL, one of the premier design labs, which will have salutary benefits to LANL as a multi-purpose national security research institution. Some savings would be realized as compared to modernizing all three sites separately, and definite operating efficiencies are realized. This may reduce capital costs by ~ $300 M from modernizing in place. The cost savings could be substantially greater if the CMRR currently in construction at LANL is only a Category III or below research facility. There are some savings in operating and SNM transportation costs.

c. Modernizing assembly and pit production at one location:
Take advantage of the Device Assembly Facility that already exists at the Nevada Test Site and equip it to be the modern assembly/disassembly facility. Locate a modern plutonium processing and pit production facility contiguous to the DAF. NTS very likely already has the AB, EIS and NEPA approvals to support both activities. It is unclear what the costs will be, but security savings alone should be of the order of $300 M, and you should avoid the capital improvements at Pantex, which save another $130 M, but you will incur the cost of a MPF, which will exceed $ 1.5 B unless it is underground.

2. Alternatives to Consolidating SNM:
Since this was one of the benefits of the CNPC, there are few things that can be done to reduce the security and handling costs of having category I and II SNM when SNM is distributed among multiple sites. Nevada will always be a SNM site, so it should be the location to maintain all of the testing with SNM. In support of that, I would propose all of the combined HE and SNM testing at LANL (DARHT II and the gas guns) be relocated to NTS, along with all of the Site 300 capability from LLNL. In addition, I would remove all plutonium category I and II material from LLNL immediately and send it to TA 55 at LANL or to the DAF at the NTS. LLNL can and likely should continue to perform the research, but actual sample work would be done at NTS or LANL. TA 55 has space issues, but that is because the DOE is using part of the TA 55 space for nuclear power fuel research. That work should be transferred to other DOE facilities. Plutonium work at TA 55 is unique and critical to the weapons program. These actions will reduce security costs and result in some operating efficiencies.

Another approach
BWXT currently provides services to the US nuclear Navy at their Lynchburg, VA facility. The Government could relocate all uranium work to the BWXT facility in Lynchburg, in contractor provided facilities. The government would retain control over all SNM inventory and specify security considerations. It is anticipated that substantial savings would be realized to all of NNSA, both in Navy reactor programs and in the nuclear weapons production complex. Y-12 would then be closed and remediated.

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 continue their use long into the future. And, as in your own home, the cost to refurbish and modernize an old structure is substantially greater than building new. 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, hopefully as an underground installation. Both are important considerations.

The largest driver in CNPC cost is the plutonium manufacturing. The need for plutonium manufacturing is independent of the lifetime of plutonium, although that is an important consideration in timing it is not the only consideration. Rather, in the next 15 years, a number of weapons will need to be refurbished. For some of them, refurbishment does mean making new pits, albeit of the current 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. If you look at the numbers, the current TA 55 facility cannot meet the workload, unless you reduce the number of weapons in the deployed stockpile. 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/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 a viable nuclear weapon deterrence. That investment grants future administrations and defense professionals greater flexibility to meet truly unanticipated future threats to our national security.

Testimony of
Peter D.H. Stockton
Senior Investigator
Project On Government Oversight (POGO)
before the
House Armed Services Committee
Subcommittee on Strategic Forces
April 5, 2006

Chairman Everett and Mr. Reyes, thank you for inviting me to testify at your hearing on future plans for the nuclear weapons complex. The Project On Government Oversight (POGO) is an independent organization that investigates and exposes corruption and other misconduct in order to achieve a more accountable federal government. We think the Secretary of Energy's Advisory Board report, headed by Dr. David Overskei, was very thoughtful, looking at the nuclear complex over the next 25 years. However, POGO's approach is focused on the near-term, because of the enormous amount of money that will be spent protecting the nuclear material where there is either a redundant mission or no mission at all. In consultation with security experts throughout the federal government, POGO conducted an investigation to determine how nuclear weapons sites could best meet the new security requirements, or Design Basis Threat (DBT),[1] while also lessening the enormous financial burden of trying to protect the materials at 13 separate sites. This investigation has found that disposing of excess nuclear materials and consolidating remaining materials in fewer and more easily-defended locations could save the government billions of dollars over three years while also better protecting the public from nuclear terrorism. In this post-9/11 world, it is unconscionable that we continue to store plutonium and highly-enriched uranium – the nuclear material most attractive to terrorists – in WWII-era buildings, some of which are even built of wood. This material is stored at great cost to the taxpayer, and some of the sites are in highly-populated areas. It is incumbent upon the Department of Energy (DOE) and the Congress to force change, as uncomfortable as that process may be.

[1] The Design Basis Threat (DBT) describes the level of threats the protective force is required to defend against – the number of outside attackers and inside conspirators, and the kinds of weapons and size of truck bombs that would be available to terrorists.

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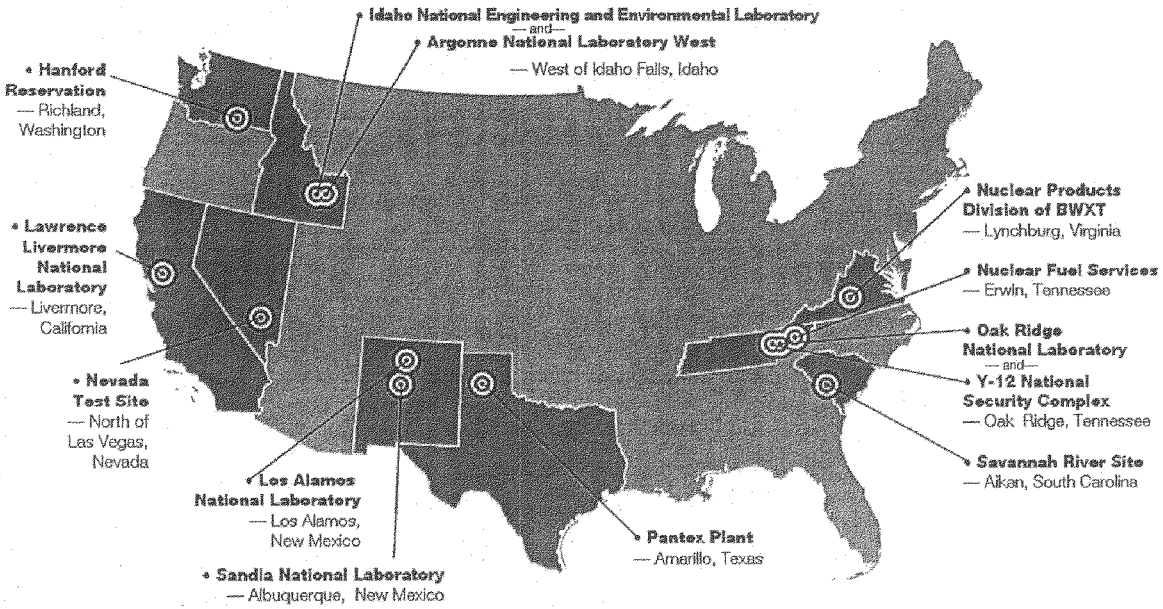
Current Sites Where Special Nuclear Materials* Exist



** Category I and II weapons grade plutonium and highly-enriched uranium*

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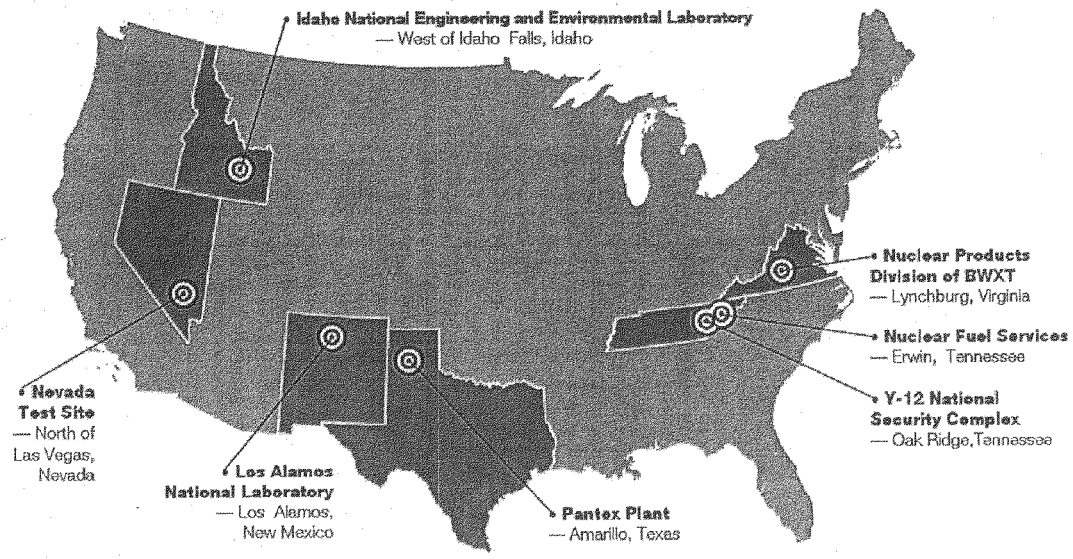
POGO's Recommendations for Consolidation of Special Nuclear Material *



** Category I and II weapons grade plutonium and highly-enriched uranium*

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There are 13 sites across the country that store large quantities of weapons-grade Special Nuclear Materials (SNM). The responsibility for these sites is divided between the Department of Energy (DOE)'s National Nuclear Security Administration (NNSA) and Energy, Science & Environment (ESE), and the Nuclear Regulatory Commission (NRC). In POGO's 2005 report, "U.S. Nuclear Weapons Complex: Homeland Security Opportunities," we recommended ways in which DOE should de-inventory six sites of SNM and consolidate these materials at more secure sites in the next three years. In addition, POGO encouraged accelerating the process of blending-down of excess highly-enriched uranium (HEU) and immobilizing excess plutonium. We are in no way suggesting shutting down sites, but are simply stating that these six sites pose unnecessary homeland security risks and budgetary pressures by continuing to store SNM.

In discussions with NNSA, we have learned that they now have a plan that will significantly consolidate their SNM. They should be congratulated for taking this step. The problem remains however, that they are looking too far into the future to accomplish their plan – at least two Administrations into the future. In the meantime, we are spending billions of dollars to protect this material.

Former Energy Secretary Spencer Abraham encouraged consolidating nuclear materials stating, "Ultimately, I believe we need to both reduce the number of sites with Special Nuclear Material to the absolute minimum, consistent with carrying out our missions, and to consolidate the material in each of those sites to better safeguard that material." At first, we were encouraged when Secretary Bodman ran a consolidation task force out of his office. However, the consolidation effort slid down into the Environmental Management bureaucracy. The proposed timelines for consolidation are so far into the future that they are easy to accept because the hard work is left for future Administrations and other policy makers. Secretary Bodman needs to inject immediacy into this plan to make it successful. We know from experience that officials throughout the nuclear weapons complex have and will strongly resist any change. Those inside the complex have seen that they can just out-wait any new directives until the current Secretary has moved on, and the status quo can be maintained. That happened to Secretary Richardson as well as Secretary Abraham and Deputy Secretary Kyle McSlarrow. The major reason for the resistance from both the sites and the program offices is their concern that if a site loses its SNM, the site would be closed.

An array of concerns arises when it comes to securing America's nuclear material, but security experts' greatest fear is very distinct: a terrorist group successfully reaches its target at one of the facilities and, within an extraordinarily short time, uses the HEU to create an improvised nuclear bomb on site (known as an Improvised Nuclear Device, or IND). It only takes a critical mass of HEU (about 100 pounds) to create an IND. To put this in perspective, one site alone stores about 400 metric tons of HEU, enough for 14,000 nuclear warheads.

Let me give you an example of how these timelines get stretched out by the bureaucracy. I began working on these issues while acting as Special Assistant to then-Secretary of Energy Bill Richardson in 1999. At that time, we identified Los Alamos' Technical Area 18 (TA-18) as

the most vulnerable site that demanded immediate attention. It is at the bottom of a canyon, and the site's security force had lost all independent force-on-force's run there, including the famous "garden cart" incident, and the October 2000 force-on-force test. Several mock "terrorists" got into one of the facilities where large plates of highly-enriched uranium were outside the vault. The protective force could not get the mock "terrorists" out, and as a result the attackers had time to create an IND – potentially a 10 kiloton nuclear detonation – that would have destroyed a significant portion of northern New Mexico.

It is worth noting that it was pre-9/11, in 2000, when then-Secretary Richardson ordered TA-18 to be de-inventoried by the end of 2004. Somehow Los Alamos was able to ignore him. After the 9/11 attacks, you would think DOE would have acted quickly. In fact, it has taken the six years, with tremendous focus by Secretary Abraham, Deputy Secretary McSlarrow and DOE site manager Ed Wilmot (as well as POGO) to finally de-inventory TA-18 of its SNM. A large part of it is still waiting at TA-55 until it is ultimately delivered to the Device Assembly Facility at the Nevada Test Site. We hope the excruciating story of TA-18 will not be the model for inaction in the face of both security and budgetary needs.

NNSA is now struggling to resolve the growing tension that exists between budget constraints and security requirements as long as the materials remain spread across the complex. It appears ESE does not even recognize the problem. POGO has internal DOE emails that indicate they are engaged in what I can only call the mating dance of a prairie chicken about what to report to your Committee. I'd like to submit them for the record. Several DOE sites cannot meet the 2003 DBT – which is far less robust than the most recent DBT. The Office of Management and Budget cut the FY 2007 DOE security budget by $200 million, mostly because they were disappointed in the lack of progress in DOE's consolidation efforts. Ambassador Linton Brooks writes that he can't reveal the cut in security funding because he has to defend the President's budget. DOE's Office of Security and Safety Performance Assurance Director Glenn Podonsky pointed out that the way out of this morass is to consolidate the SNM and reduce the security costs. Some sites, as you probably know, are preparing to request waivers from the Secretary to exempt them from the 2003 DBT. One site, Y-12, has already been granted a waiver. Hanford and Oak Ridge National Laboratory (ORNL) are in the process of receiving a waiver.

Now that TA-18 is de-inventoried, POGO has broken down the remaining sites into the following categories:

- Sites that should be de-inventoried immediately
    - Lawrence Livermore National Laboratory
    - Oak Ridge National Laboratory
    - Sandia National Laboratory
    - Hanford Reservation

- On-Site Consolidation Opportunities
    - Y-12 Facility at Oak Ridge
    - Pantex Plant
    - Unused or Under-used Secure Storage Sites
    - Device Assembly Facility at the Nevada Test Site
    - Building 691 at the Idaho National Lab
    - Facilities that Should Ultimately be De-inventoried
    - Savannah River Site

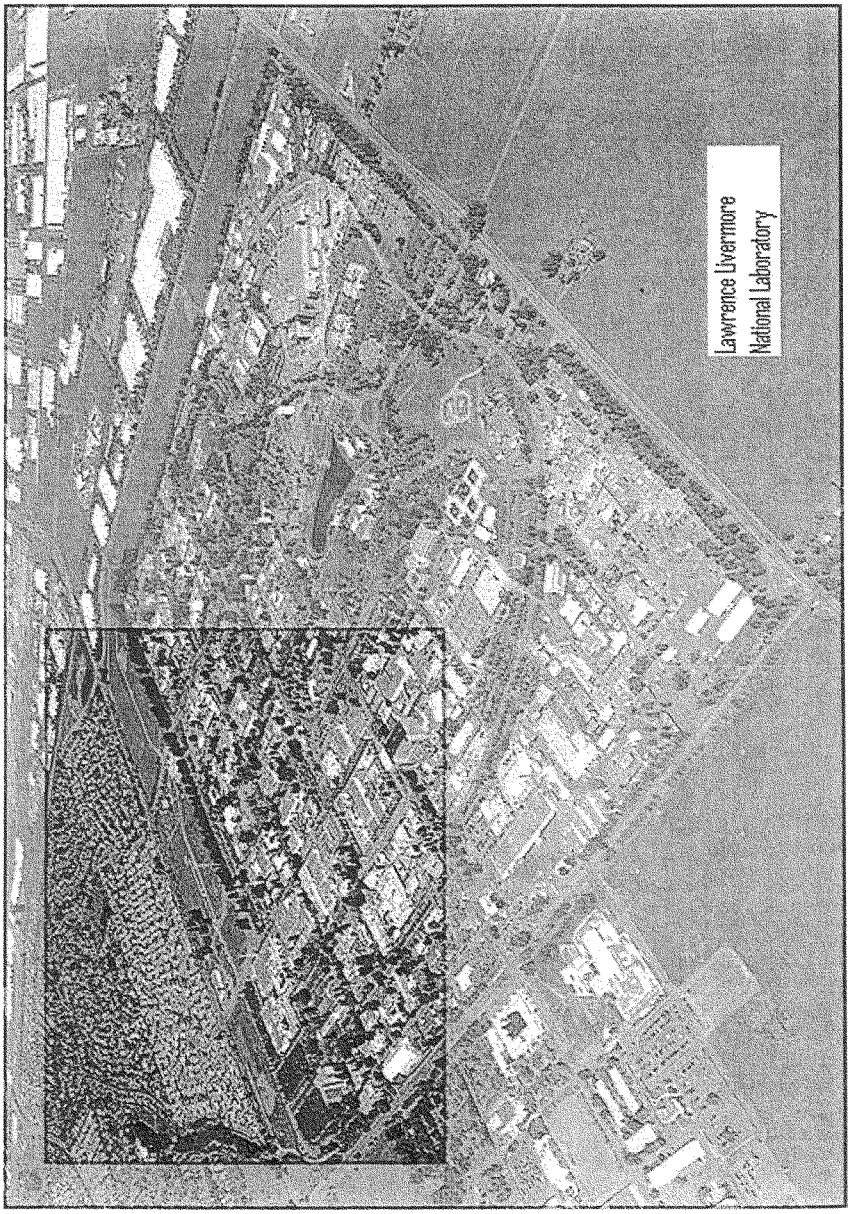
I ask that our complete report be submitted for the record. I will focus my testimony on the most urgent priorities for the Committee to consider.

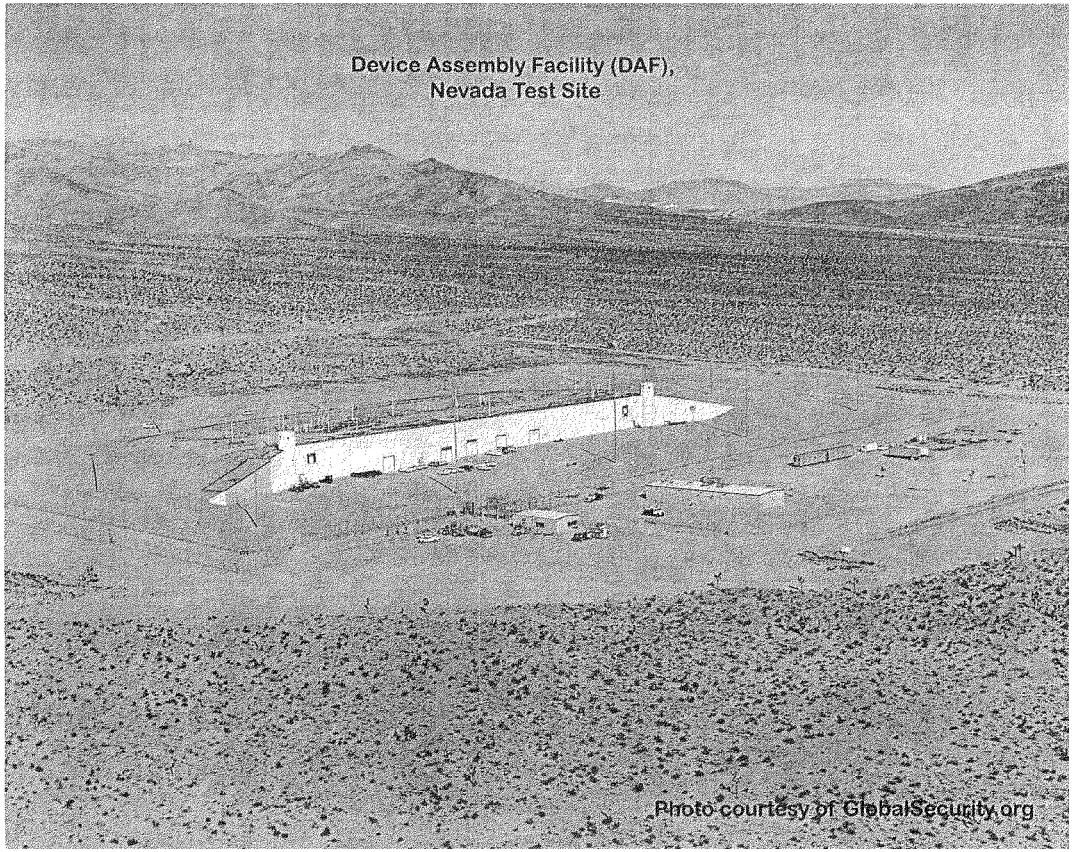
SITES THAT SHOULD BE DE-INVENTORIED IMMEDIATELY

Lawrence Livermore National Lab

When Livermore Lab was first built, it was located in the middle of a desert. Since that time a residential neighborhood has encroached to the fence line of the lab, with houses and athletic fields literally across the street. Nearly seven million people reside within a 50-mile radius of the lab. Superblock, where the plutonium and highly-enriched uranium is located, is only approximately 900 yards from these houses. Securing these materials creates a unique problem. How do you adequately protect these materials without unduly endangering the surrounding population? The security forces at Livermore are constrained in a way that no other NNSA security force is. It is precisely because of those residential neighborhoods that the Livermore security force cannot use the same weapons used by the security forces at the other sites. Despite earlier assurances from DOE that these restrictions on Livermore's defensive measures posed no problems, DOE has reversed course and decided that the restrictions are, indeed, a problem. DOE has lifted those restrictions to a degree and is now planning to deploy Gatling guns that fire 3,000 rounds a minute. The military kill-range for such a gun is one mile, but it can kill up to two miles. Within that one-mile range are two elementary schools, a pre-school, a middle school, a senior center, and athletic fields. Even in an accidental firing, the lab will be spraying lethal bullets into the neighborhood.

Currently the only mission for SNM at Livermore is for studying the aging of plutonium, and studying cracked plutonium pits for nuclear warheads. This same work is conducted at Los Alamos National Laboratory.


Lawrence Livermore
National Laboratory


Device Assembly Facility (DAF),
Nevada Test Site
Photo courtesy of GlobalSecurity.org

DOE has finally acknowledged that Livermore should be de-inventoried of its Category I and II Special Nuclear Materials (SNM). The lab could retain Category III and IV quantities for their experiments, as those quantities would be of no use to terrorists. However, DOE doesn't propose to accomplish this very important step until 2014. It is important to point out that the plan is to wait to move the materials until the Chemistry and Metallurgy Facility Replacement (CMRR) is built at Los Alamos–a total of at least eight years. Then all the Los Alamos and Livermore material is scheduled to move again by 2025 to the Nevada Test Site. Why build a new building at Los Alamos, if only a decade later it is expected to be de-inventoried?

POGO's Recommendation:

If it is determined by NNSA that it wants to continue the redundant mission at Livermore, the material could be moved to the Device Assembly Facility (DAF) at the Nevada Test Site. The Livermore glove boxes, and any other necessary equipment, could be shipped to the DAF. The scientists could easily take the one-hour flight to the DAF, as they did for years during the nuclear test program, when they need to conduct experiments with larger quantities of SNM.

Oak Ridge National Laboratory

Oak Ridge National Lab (ORNL) maintains some stockpiles of Neptunium-237 and stores 1,000 cans of Uranium-233. It has generally been assumed that the Uranium-233 could not be transported, nor would it be accepted by Y-12, which is more capable of protecting the materials. This material is as potent and dangerous as highly-enriched uranium in terms of making an improvised nuclear bomb. POGO's staff was at ORNL last September, and walked unescorted around the Building 3019, which houses 1,000 cans of U-233, for 15 minutes before there was a response from the guard force. There was virtually no physical security around the building, and no stand-off for truck bombs. We were able to walk up and touch the building. Since then, DOE has sent three teams to ORNL in the past few months to determine how they could possibly meet the 2003 DBT. In the last force-on-force conducted there, the entire ORNL protective force was "killed" by the mock terrorists in 90 seconds. Currently, ORNL security relies on a SWAT team from Y-12 to come to their rescue if there is an attack on ORNL. The problem with this arrangement is that such a move would leave Y-12 under-protected, if indeed the ORNL attack was simply a diversion.

The decision about what to do with this material has been difficult to make because the material at ORNL is utterly orphaned. ESE says NNSA owns the material, so they don't have to pay to deal with it; and NNSA says it does not own it, and that it is ESE's problem. This "stove-piping" is a real problem within DOE. We understand that DOE's ESE is trying to get exempted from the 2003 DBT.

POGO's Recommendation:

ORNL should be de-inventoried of all Special Nuclear Materials immediately. The cost should be borne equally by NNSA and ESE – largely to stop the senseless finger pointing. The Neptunium-237 should be shipped to the underground storage facility in Idaho. There are two options for the U-233: immediately downblend it at ORNL, or move it for temporary storage to Y-12 and downblend it there.

Sandia

The only weapons quantities of SNM stored at Sandia, on the edge of Albuquerque, are some minor weapons parts and the HEU fuel plates for the labs' SPR III burst reactor. This material poses a risk because the fuel plates can be used to make an IND in minutes. In 2004, then-Secretary Abraham announced that Sandia would be de-inventoried of these materials by 2007. That schedule has now slipped to 2008.

POGO's Recommendation:

We recommend the immediate de-inventorying of all of Sandia's SNM. If it is determined later that there is a mission-related need for the SPR III, there are two reactors that could perform the same tests at White Sands and Aberdeen.

Hanford

Hanford has retained a large quantity of plutonium that is not scheduled to be moved until 2007, and some SNM from the Los Alamos Molten Plutonium Experiment (LAMPRE), for which there are no plans for disposition. This is of particular concern, as Hanford failed a force-on-force exercise after 9/11, and they are currently trying to get exempted from their DBT requirements. This material is also orphaned. Neither NNSA nor ESE acknowledges ownership of or responsibility for this material.

POGO's Recommendation:

All the remaining SNM should be shipped temporarily to the DAF until final disposal at Savannah River, or Building 691 at Idaho National Laboratory. Again, NNSA and ESE should share in the burden.

ON-SITE CONSOLIDATION OPPORTUNITIES

Highly-Enriched Uranium Materials Facility (HEUMF) at Y-12

Until five years ago, when Lockheed Martin still managed Y-12 near Oak Ridge, Tennessee, there were plans to build an underground or bermed storage facility. Virtually all

modern nuclear storage facilities are underground, including the DAF and Kirtland Underground Munitions Storage Complex (KUMSC) at Kirtland Air Force Base. An underground facility would be much harder to penetrate and would serve as a greater deterrent to terrorists. U.S. Special Operations Command personnel have told POGO that an above-ground facility is a substantially more vulnerable design and that the underground option is the only credible one. Yet the current contractor, BWXT, changed the plan to build an underground or bermed facility to that of an above-ground facility.

DOE is currently constructing the above-ground building known as the Highly-Enriched Uranium Materials Facility (HEUMF) to store the plant's hundreds of tons of HEU. The DOE Inspector General has criticized both the design and cost of this new building, concluding that it will cost more and be less secure than the original plan for a bermed facility.

In 2004, Sandia National Lab was asked by NNSA to evaluate the HEUMF plans. It was ultimately Sandia's approval of this design that persuaded DOE Headquarters to give the green light for the above-ground building. POGO has learned, however, that the Sandia study never compared the HEUMF design with an underground or bermed design, explaining in the small print they did not want to have to consider an entire redesign for the building. Ironically, it was an earlier Sandia study that had recommended using existing designs from two other government-owned underground facilities to solve the Y-12 storage problem – the DAF or KUMSC.

There is an opportunity, however, to take advantage of the current debacle in the HEUMF construction. As you know, construction was halted several weeks ago on HEUMF at Y-12 because the amount of rebar in the concrete does not meet specifications. There is now talk of starting from scratch.

POGO Recommendation:

We suggest you take this opportunity to stop throwing good money after bad, and dramatically upgrade security at far less cost than the current plan. Stop the above-ground design and take the design of the DAF, which the Corps of Engineers built for $100 million – far less than the $380 million that is currently estimated for the HEUMF. A second option would be to incorporate berming into the current design – DOE officials have privately suggested that berming would be an important security improvement to the building.

Pantex

Pantex stores thousands of plutonium pits, some from 40 to 50-year old weapons, in World War II- era bunkers in an area called, "Zone 4." Zone 4 is located at the end of an Amarillo Airport runway. There has been concern for over 30 years about a plane, either accidentally or intentionally, crashing into these bunkers and causing a major radiological

dispersal of plutonium. These plutonium pits will never be used in either refurbished or new nuclear weapons.

POGO Recommendation:

The pits should be declared surplus and immobilized as soon as possible at Pantex. In the meantime, plutonium in Zone 4 should be moved onsite to the more appropriately located and secure Zone 12.

UNDER-USED SECURE STORAGE SITES

Device Assembly Facility at Nevada Test Site and Building 691 at Idaho National Lab

There are two secure underground sites where SNM could be stored at far less cost that are under-used, or not used at all, in the complex. In addition to the DAF, a bermed facility at the Nevada Test Site, there is also the equally well-protected underground Building 691 at the Idaho National Lab. Until the SNM of TA-18 was moved to the DAF over the last year, both buildings remained entirely empty. We have been informed by top DOE officials that there is enough storage space in each of these facilities to store the entire stockpile of SNM in the complex.

SITES WITH INADEQUATE SECURITY STANDARDS

BWXT and Nuclear Fuel Services

Two facilities that should be of interest to the Committee are the Nuclear Products Division of BWXT in Lynchburg, Virginia, and Nuclear Fuel Services (NFS) in Erwin, Tennessee. They are commercially operated, and primarily funded by the Office of Naval Reactors of the DOE; they house tens of tons of HEU that is "owned" by DOE's NNSA. NRC regulates the facilities and is responsible for setting the DBT and to test security at these sites. However, we understand that the DBT for these two sites is significantly lower than the DOE DBT to protect the same dangerous material – HEU.

POGO's Recommendation:

POGO recommends transferring authority for security at these sites to the Department of Energy.

Even with the strongest leadership from the Secretary's office, the only way these initiatives will be enacted is with your Committee's continued vigilance. DOE's history has shown that without constant pressure from Congress and specifically from this Subcommittee, these consolidation initiatives will likely fail.

Statement of Thomas P. D'Agostino
Deputy Administrator for Defense Programs
National Nuclear Security Administration
Before the
House Armed Services Committee
Subcommittee on Strategic Forces

April 5, 2006

Chairman Everett, Representative Reyes 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 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 Congress, 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 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. 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.

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 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.

Testimony of Charles E. Anderson
Principal Deputy Assistant Secretary for the Office of Environmental Management
Before the
Subcommittee on Strategic Forces
Committee on Armed Services
U.S. House of Representatives

April 5, 2006

Good morning. My name is Charlie Anderson and I am the Chairman of the Department's Nuclear Materials Disposition and Consolidation Coordination Committee (NMDCCC). I am pleased to be here today to answer your questions regarding the Department's efforts to consolidate and disposition its nuclear materials. Mr. Chairman, I want to thank you and your subcommittee for your interest in this complex challenge as it is vital to the security of our country.

I have personally been involved with nuclear material management for a number of years, currently with the Office of Environmental Management (EM) and in previous positions, including with the National Nuclear Security Administration (NNSA). Nuclear material disposition and consolidation is very important to the Department as there are 21 Catergory-1 facilities at 10 sites across the DOE complex. Proper management of these materials is also one of the biggest challenges facing the Department, with respect to cost, security, and the schedule of reducing the footprint of the DOE complex.

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.

Since becoming Chairman of the committee in November 2005, meetings have occurred at least once a month, and have included representatives from each DOE organization that is responsible for nuclear materials, as well as senior advisors from other organizations within the DOE. I have also briefed with the Defense Nuclear Facilities Safety Board monthly since my appointment on the progress of the committee.

It was made clear to me that the Secretary expects the NMDCCC to make progress. That is the message I have conveyed to the committee at our meetings. Since my appointment as Chairman of the committee it has been clear to me that the NMDCCC needed to have a streamlined approach to and a clear understanding of the challenges it faced. The committee has initially outlined four major areas that needed progress:

1) Listing of near-term materials the committee would address,
2) Prioritization of these materials,
3) A strategic plan to address the path forward, and
4) Development of implementation plans to address each individual issue.

The committee has identified eight near-term issues:

- Consolidation of excess plutonium-239
- Removal of surplus weapon pits from Zone 4 at Pantex
- Disposition of U-233 from Oak Ridge National Laboratory
- Removal of surplus material from Y-12 (also Aberdeen material)
- Removal of surplus material from Los Alamos National Laboratory
- Removal of all Category I and II material from Lawrence Livermore National Laboratory
- Removal of Sandia National Laboratory nuclear materials
- Consolidation of plutonium-238

After examining these issues, the committee concluded the top priority facing the committee was to identify a path forward for the plutonium-239 at our Hanford site. This issue was determined to be the highest priority for the committee chiefly because of urgency associated with removal of this material in order to avoid the expenditure of significant funding at Hanford to meet the latest security requirements.

I indicated in testimony before the House Energy and Commerce Subcommittee on Oversight and Investigations in October 2005, the committee was about a year and half away from delivering the strategic plan. The committee is making progress on this strategic plan. The strategic plan sets the stage for the committee to develop individual implementation plans. An individual implementation plan will consist of a:

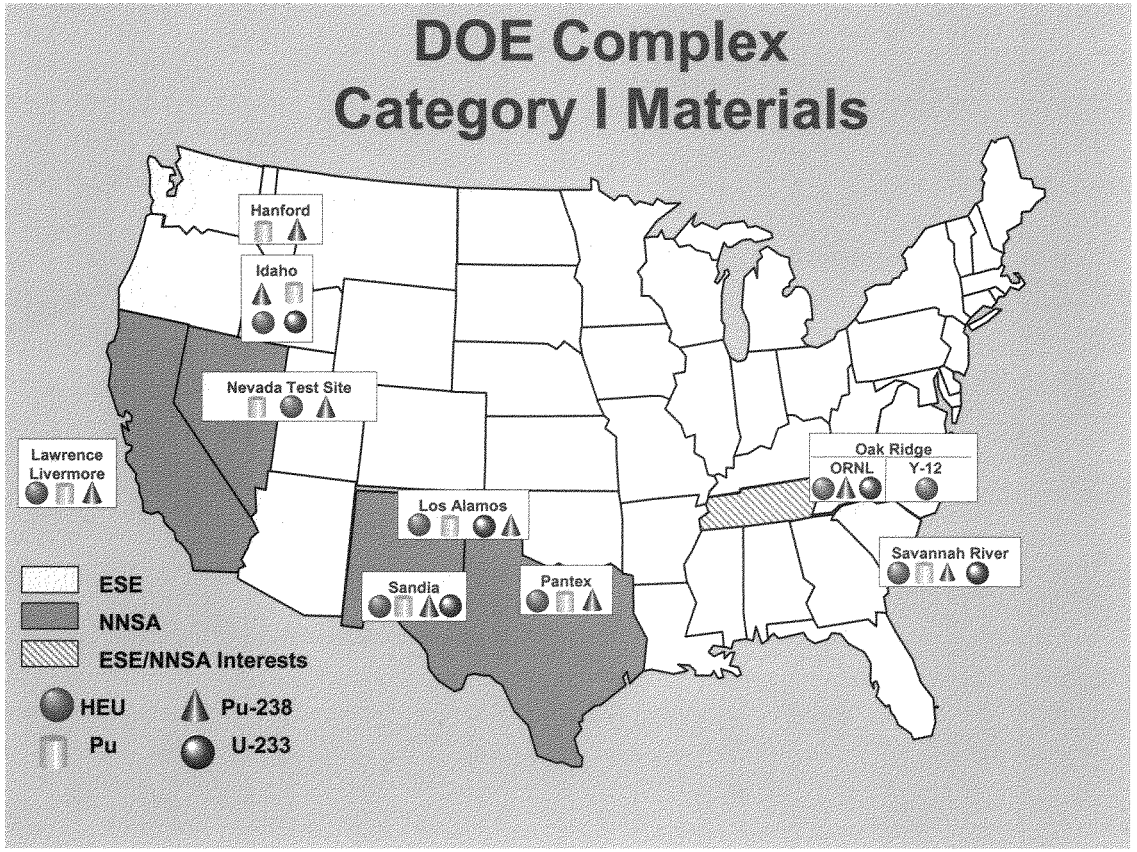
- Clear concise statement of the problem,
- Listing of all known pertinent facts, including source documents,
- Listing of alternatives,
- Cost evaluation of viable alternatives, and
- Recommended path forward.

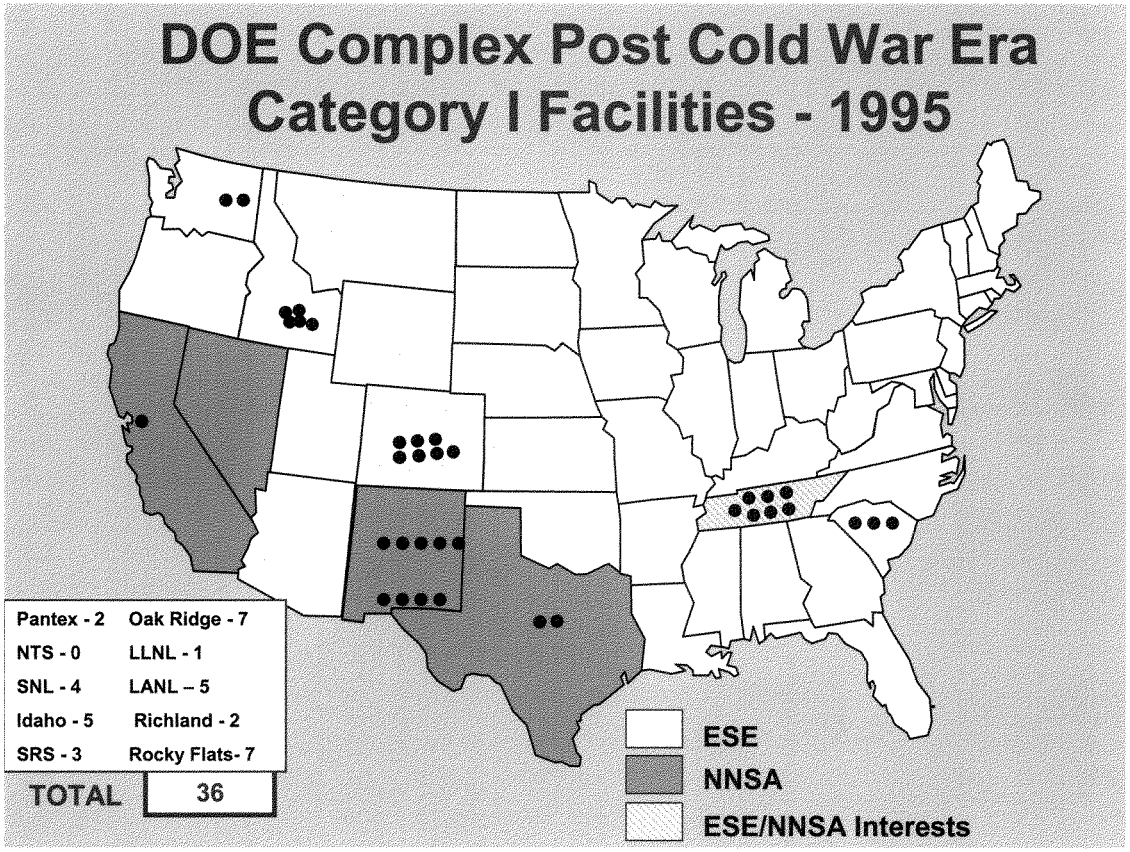
Implementation plans will be transmitted, as appropriate, to the Secretary for final decision after approval by the NMDCCC.

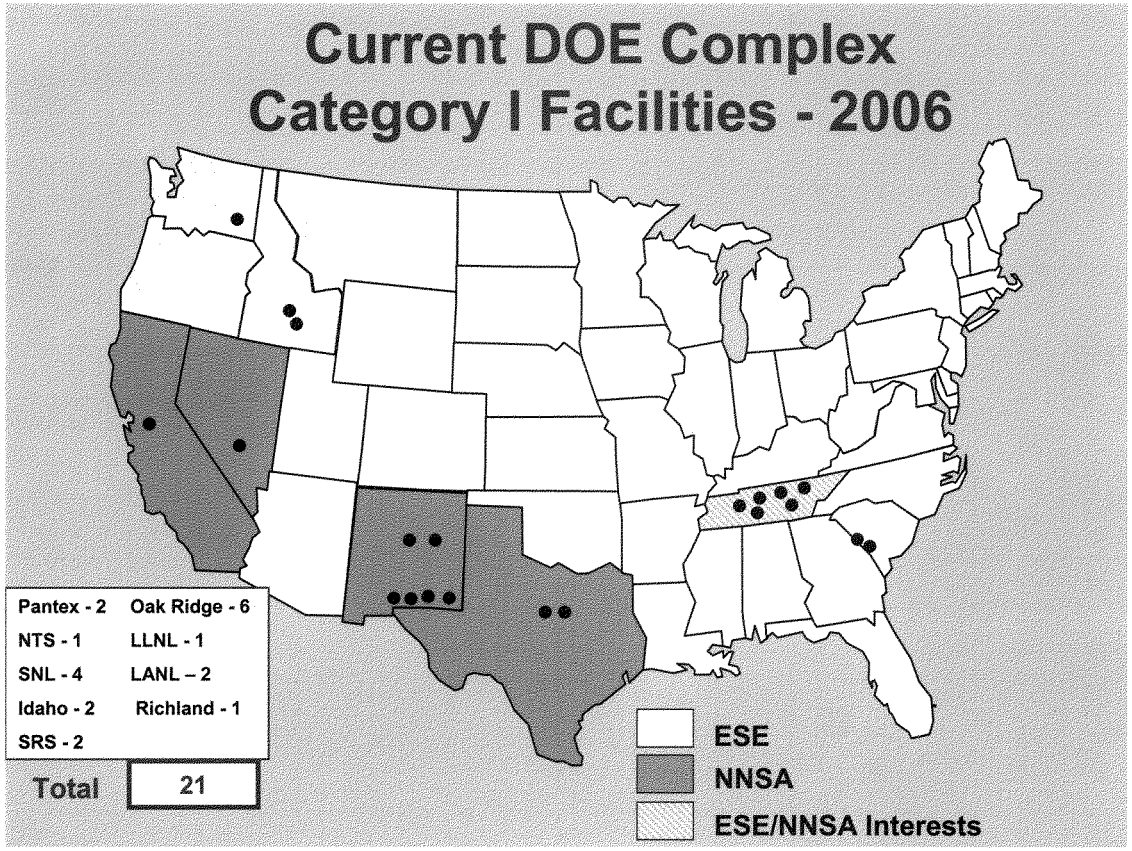
While developing the implementation plan of consolidation of plutonium-239 the committee has identified three alternatives and is currently evaluating each: continued storage at a current site, consolidation and storage at an interim site, and consolidation and storage at the disposition site. Consolidation of plutonium-239 would provide several important benefits to the Department and the taxpayers; it would reduce the number of sites with special nuclear material, enhance the security of this material, and reduce or avoid the costs associated with plutonium storage, surveillance and monitoring, and security at multiple sites. In addition, consolidation of this material has been encouraged by members of Congress, stakeholders, the Government Accountability Office (GAO), and the Defense Nuclear Facilities Safety Board. The committee is currently reviewing the pertinent facts and evaluating the cost associated with the alternatives. These facts include the necessary steps that need to be taken to meet applicable statutory requirements, before developing the recommended path forward.

In closing, it is very important to keep in mind that, while the Department has not yet made a decision to further consolidate nuclear materials, the Nuclear Materials Disposition and Consolidation and Coordination Committee is very active, and our activities are focused on completing the strategic plan and the plutonium-239 Implementation Plan.

Thank you for allowing me the opportunity to testify, and this completes my formal statement. At this time I would be pleased to answer any questions you may have for me.


DOE Complex
Category I Materials
Hanford
Idaho
Nevada Test Site
Lawrence Livermore
Los Alamos
Sandia
Pantex
Oak Ridge
ORNL
Y-12
Savannah River
ESE
NNSA
ESE/NNSA Interests
HEU
Pu
Pu-238
U-233


DOE Complex Post Cold War Era
Category I Facilities - 1995
Pantex - 2
Oak Ridge - 7
NTS - 0
LLNL - 1
SNL - 4
LANL – 5
Idaho - 5
Richland - 2
SRS - 3
Rocky Flats- 7
TOTAL
36
ESE
NNSA
ESE/NNSA Interests


Current DOE Complex
Category I Facilities - 2006
Pantex - 2
Oak Ridge - 6
NTS - 1
LLNL - 1
SNL - 4
LANL – 2
Idaho - 2
Richland - 1
SRS - 2
Total
21
ESE
NNSA
ESE/NNSA Interests

DOCUMENTS SUBMITTED FOR THE RECORD

APRIL 5, 2006

-----Original Message-----
From: Podonsky, Glenn
Sent: Friday, January 20, 2006 3:42 PM
To: Brooks, Linton; Grant, Susan; Podonsky, Glenn; Garman, David; Desmond, William; Sigal, Jill; Franklin, Anson; Paul, Jerry; Walsh, Bob; Sullivan, John; Kilpatrick, Michael; Stone, Cheryl; Kolton, Anne Womack; Hodson, Patricia J.; Kane, Michael
Cc: Barker, William; Stevens, Curtis; Campbell, Jim; Ingols, Adam
Subject: RE: DBT and the budget Round II
Importance: High

I would like to provide an alternate proposal for dealing with implementation of the revised DBT under current budgetary conditions. As Linton correctly points out, we do not have solid figures for the real costs associated with full compliance with the 2005 DBT. We have attempted through various means, such as last year's site assistance visit effort and a number of subsequent confirmatory evaluations, to identify appropriate security upgrades needed to modify our protection strategies and achieve our protection goals. However, none of our sites have fully-developed implementation plans that quantify the costs of an integrated approach to needed upgrades, such as the costs associated with applying new security technologies or of increasing protective force skill levels and capabilities. The complex has not universally bought into the merits of the new security initiatives and strategies, nor is it confident about the right way to implement them. I believe there is a way, described below, that we can demonstrate to the complex what needs to be done, how to do it, and how much it will cost.

I believe that if we vigorously pursue the strategies and initiatives we have previously identified, such as material consolidation and the revised approach to protective force employment envisioned in the elite force initiative and further facilitated by the increased and more effective use of security technologies, we can meet our DBT-related commitments in a timely manner. It will require strong leadership and cooperation by all parties and pointed encouragement to get some sites to fully embrace the revised DBT and to buy into, adopt, and pursue these new strategies, and I believe that should be our continued goal.

I believe we can further that goal if we clearly demonstrate that our initiatives and strategies can be successfully implemented. I propose that NNSA, ESE, and SSA immediately begin a joint effort at a demonstration site to develop and implement an integrated strategy to make the changes necessary to meet the 2005 DBT. This effort would show by example that appropriate security initiatives and strategies can be successfully implemented, how they can be planned and implemented, and the actual costs of doing so. I would suggest Idaho National Laboratory as a suitable demonstration site; of the various sites my office is working with to implement new security technologies, INL leads in its demonstrated willingness to implement our security initiatives to achieve a more effective and efficient protection strategy. It would be essential that NNSA, ESE, and SSA each fully cooperate in this effort and that managers fully buy into it, so that the lessons learned from the effort will be applied throughout the complex.

We would need to apprise Congress of the purpose and intentions of this

demonstration project, and explain how it will increase the effectiveness and efficiency of our Department-wide efforts to meet the requirements of the 2005 DBT. We should acknowledge that while other sites will continue essential planned security upgrades concurrent with the demonstration project, taking full advantage of the lessons of the demonstration will result in some delay in the completion of fully-integrated security upgrade packages at some sites.

-----Original Message-----
From: Brooks, Linton
Sent: Thursday, January 19, 2006 1:06 PM
To: Grant, Susan; Podonsky, Glenn; Garman, David; Desmond, William; Sigal, Jill; Franklin, Anson; Paul, Jerry; Walsh, Bob; Sullivan, John; Kilpatrick, Michael; Stone, Cheryl; Kolton, Anne Womack; Hodson, Patricia J.; Kane, Michael
Cc: Barker, William; Stevens, Curtis; Campbell, Jim; Ingols, Adam
Subject: RE: DBT and the budget Round II

If the concern is the tactical one of how to portray this, we should look at alternative formulations including saying nothing now. But we will have to say something, perhaps as soon as rollout and certainly as soon as the first hearing. I defer to others on ESE sites. For NNSA, the sites asked for ed $209 million dollars in FY2007 for the DBT. We validated $150 million of that and revised that number downward to $100 million when the revised DBT was approved. OMB cut our request by $200 million. We need to be clear that we won't be able to meet the requirements.

On Susan's point, I agree that we don't want to convey a DOE position that is only applicable to some sites. I though Bob Walsh's rewrite did that nicely: "the budget does not fully support this implementation date at all sites.... At sites where implementation may be delayed, such delays are acceptable, as the risk is mitigated..."

Anyhow, I'll look forward to the alternate approach. The only thing I think we absolutely must avoid is misleading the Hill.

Linton

-----Original Message-----
From: Grant, Susan
Sent: Thursday, January 19, 2006 11:08 AM
To: Podonsky, Glenn; Brooks, Linton; Garman, David; Desmond, William; Sigal, Jill; Franklin, Anson; Paul, Jerry; Walsh, Bob; Sullivan, John; Kilpatrick, Michael; Stone, Cheryl; Kolton, Anne Womack; Hodson, Patricia J.; Kane, Michael
Cc: Barker, William; Stevens, Curtis; Campbell, Jim; Ingols, Adam
Subject: Re: DBT and the budget Round II

Thanks, Glenn. We in the CFO community share your concerns. For the sake of clarity and for internal use, I would like to see a matrix by site on how we assess each site. My understanding is that some sites are in better DBT posture than others (particularly the SC sites funding is good) and are on course to meet DBT requirements. Perhaps the Deputy has this level of understanding but it is not wide spread. We really do not

want to communicate a DOE position that is only applicable to some sites. Thanks for trying to rewrite this.

-----Original Message-----
From: Podonsky, Glenn
To: Brooks, Linton; Garman, David; Desmond, William; Sigal, Jill; Franklin, Anson; Paul, Jerry; Walsh, Bob; Sullivan, John; Grant, Susan; Kilpatrick, Michael; Stone, Cheryl; Kolton, Anne Womack; Hodson, Patricia J.; Kane, Michael
CC: Barker, William; Stevens, Curtis
Sent: Thu Jan 19 09:40:54 2006
Subject: Re: DBT and the budget Round II

Linton, thank you for your message. SSA continues to have serious concerns with this approach. We attempted a "red line correction" version but that did not work. What I would like to do is provide you late tonight or early Friday, an alternative to accompany your paper when you go forward to S-2 by COB friday.

-----Original Message-----
From: Brooks, Linton
To: Garman, David; Desmond, William; Sigal, Jill; Franklin, Anson; Podonsky, Glenn; Paul, Jerry; Walsh, Bob; Sullivan, John; Grant, Susan; Kilpatrick, Michael; Stone, Cheryl; Kolton, Anne Womack; Hodson, Patricia J.; Kane, Michael
CC: Barker, William; Paul, Jerry; Stevens, Curtis
Sent: Thu Jan 19 08:16:14 2006
Subject: DBT and the budget Round II

Here is what I propose to give Clay. It is an ESE re-write to clarify that they may be able to achieve the DBT at some sites. We got no other comments.

I will send to Clay at COB Friday saying that none of you object. Let me know if that is wrong.

Thanks, Linton

<<DBT INSERT Jan 06 (rev 3).doc>>

-----Original Message-----
From: Brooks, Linton
Sent: Tuesday, January 17, 2006 10:27 AM
To: Garman, David; Desmond, William; Sigal, Jill; Franklin, Anson; Podonsky, Glenn; Paul, Jerry; Walsh, Bob; Sullivan, John; Grant, Susan; Kilpatrick, Michael; Stone, Cheryl
Cc: Barker, William; Paul, Jerry; Stevens, Curtis
Subject: RE: DBT and the budget

I spoke to Clay after our Friday meeting to tell him the approach we were taking on the DBT and Congress. I told him he would have something to look at when he returned from Moscow.

Clay said that he did not automatically accept the contention that the reduced funding would not permit attaining the 2005 DBT by the end of 2008. His rationale is somewhat different that Glenn's, he simply believes we don't have any idea of what we can do because we

don't have good cost estimates. I told him that (a) we would get him what we had and (b) I was extremely skeptical that we could take site inputs, cut them significantly, have OMB do another 200M dollar cut and have no impact on our ability to implement the new DBT.

Clay took the opportunity to point out that we wouldn't have these kinds of problems if we had made security an indirect cost. He acknowledges my point that we can't change quickly, but I think that he is still interested in change sooner or later.

Attached is the insert that I propose for our consideration. I would appreciate it if you would provide comments to Cheryl Stone (in Bill Desmond's absence) by COB Wednesday. That will let us do one more draft and still give Adam Ingols something for Clay's welcome home package Monday night

For Cheryl: Consolidate the comments and then lets talk.

Thanks, Linton

<< File: DBT INSERT.doc >>

-----Original Message-----
From: Brooks, Linton
Sent: Thursday, January 12, 2006 1:47 PM
To: Garman, David; Desmond, William; Sigal, Jill;
Franklin, Anson; Podonsky, Glenn; Paul, Jerry; Walsh, Bob; Sullivan, John; Grant, Susan; Kilpatrick, Michael
Cc: Barker, William; Paul, Jerry; Stevens, Curtis
Subject: DBT and the budget
Importance: High

As I discussed at the January 3 senior staff meeting, I have set up a meeting for tomorrow for of us to talk about a report mandated by the most recent Defense Authorization Act. The report is due in June and covers the Design Basis Threat. Specific details are set for it below.

The obvious problem is that we will be providing a repot that indicates that we have not chosen to seek funding in the FY 07 budget to implement the 2005 DBT by the end of 2008. We all know that is because OMB denied funding, but since we will be defending the Administration's position, we won't be able to say that. I assume that our argument will be competing priorities. That will work pretty well on the NNSA side where I have taken major reductions in outyear projection in the interest of deficit reduction. It may work less well for the rest of the department if we actually have significant plus ups for science and nuclear energy. We will be telling the Congress that complying with the DBT is less important than either of those.

The problem may be made more complicated by the fact that we all have to submit five-year budgets. I still don't have a NNSA pass back and expect that it will only provide a control number at the appropriation level. We will be submitting a budget (I expect) that shows a huge increase in security between FY 07 and FY 08, essentially allowing us to meet DBT a year later than otherwise projected. That may

or may not fly with OMB. If it doesn't that will further complicate what we say in this report.

What we need to decide now is:

1. What will we say in the report in very broad terms? My recommendation is to simply say that within constrained resources we had to make priority decisions, that the DBT is the standard and that we will move toward it, but that in looking at the reality of the available resources we concluded that we would not move to it as rapidly as we would like. We should assert that the 2003 DBT (which we will meet on time) is sufficiently conservative that the delay in meeting the 2005 DBT is acceptable.

2. Second think that we need to decide - - and the thing that makes this urgent - - is what, if anything, do we say on this subject in the budget documentation and in testimony. I think there is a serious risk to our credibility if we say nothing and then send this report up around the time they are in markup. Besides, there is little chance we can avoid the subject coming up in hearings. On the other hand, without some more thought we aren't completely ready to engage, since we're defending a decision somebody else made.

My view is we should include an explicit statement in the budget documentation that to provide for higher priorities the Administration has decided not to increase funding to meet the 2008 date for the newest DBT, but that we are confident that we will comply with the 2003 date and that the risk is acceptable because the 2003 DBT is so conservative. I suspect others may have alternate views.

Anyhow, it should be an interesting discussion.

Thanks,
Linton

SEC. 3113. REPORT ON COMPLIANCE WITH DESIGN BASIS THREAT ISSUED BY DEPARTMENT OF ENERGY IN 2005.

(a) REPORT REQUIRED.-Not later than 180 days after the date of the enactment of this Act, the Secretary of Energy shall submit to the congressional defense committees a report detailing plans for achieving compliance under the Design Basis Threat issued by the Department of Energy in November 2005 (in this section referred to as the ''2005 Design Basis Threat'').

(b) CONTENT.-The report required under subsection (a) shall include the following:

(1) A plan with associated annual funding requirements to achieve compliance under the 2005 Design Basis Threat by December 31, 2008, and sustain such compliance through the Future Years Nuclear Security Plan, of all Department of Energy and National Nuclear Security Administration sites that contain nuclear weapons or special nuclear material.

(2) A risk and cost analysis of the increase in security

requirements from the Design Basis Threat issued by the Department of Energy in May 2003 to the 2005 Design Basis Threat.

(3) An evaluation of options for applying security technologies and innovative protective force deployment to increase the efficiency and effectiveness of efforts to protect against the threats postulated in the 2005 Design Basis Threat.

(c) FORM.-The report required under subsection (a) shall be submitted in classified form with an unclassified summary.

(d) COMPTROLLER GENERAL REVIEW.-Not later than one year after the date of the enactment of this Act, the Comptroller General shall submit to the congressional defense committees a report containing a review of the plan required by subsection (b)(1). In conducting the review, the Comptroller General shall employ probalistic risk assessment methodology to access the merits of incremental risk mitigation steps proposed by the Department of Energy.

QUESTIONS AND ANSWERS SUBMITTED FOR THE RECORD

APRIL 5, 2006

QUESTIONS SUBMITTED BY MR. EVERETT

Mr. EVERETT. In your testimony you indicate that the Department of Defense has not operated as a partner with the Department of Energy in matters associated with the vision of the nuclear weapons complex of the future.

What is your sense as to why DOD is not fully engaged with DOE?

Dr. OVERSKEI. There are several aspects:

First, no particular vision of the nuclear weapons complex of the future, including the vision recommended by the SEAB Task Force, is widely held, either within NNSA or within the units of the DOD that interact with NNSA. Therefore, it should not be surprising that partnering between NNSA and DOD in the implementation of *any* vision is lacking when a common vision has not yet been adopted. NNSA will have to *earn* that partnering through two actions: (1) a clear articulation of their vision of the nuclear weapons complex of the future, and (2) performance in the execution of a plan to achieve that vision. The NNSA performance over the past decade has led to reduced DOD confidence in the capability of the Complex to achieve routine metrics, let alone a vision that requires nuclear weapons stockpile transformation. On the other side of the partnering equation, the DOD will have to allow the NNSA some elasticity to transform, through the RRW and some relaxation on the current stockpile obligations. The RRW becomes the enabler of a *new* partnership.

Second, and related to the above, in the fifteen years since the demise of the Soviet Union as a threat to the United States, DOD expectations from the Complex have diminished, with a corresponding effect on the partnership. Currently, no other adversarial national force in the world has the capability to use nuclear weapons to challenge the very survival of the US. Now, many of the threats to the US come from non-nation entities. In such cases, nuclear weapons may not be an effective deterrent. Thus, the absence of a current, well articulated nuclear policy that incorporates the role of nuclear weapons in today's world is necessary for DOD and DOE to again be engaged partners in the nuclear weapons complex of the future.

Third, in addition, the DOD does not have to deal with the budget issues/consequences that DOE must address to fulfill the DOD requirements.

Mr. EVERETT. In your opinion, are the existing organizational relationships between the Department of Energy and the Department of Defense in the area of nuclear weapons matters working as intended?

Dr. OVERSKEI. As indicated above, the relationship was very effective and functional when the threat to the US was another nation that was also a large scale nuclear threat. Times have changed. In the last 15 years the DOD interest in the role of nuclear weapons in policy and planning activities has diminished. The role of nuclear weapons, including the size and composition of the stockpile, must be addressed at a high national policy level for the two agencies to again work together effectively.

Mr. EVERETT. One of the objectives of the Reliable Replacement Warhead program is to design and certify new warheads without the need to conduct underground nuclear testing.

During your task force study, were you able to reach any conclusions on whether NNSA could proceed with a Reliable Replacement Warhead program that does not require the resumption of testing?

Dr. OVERSKEI. Yes, we concluded that the design laboratories are definitely capable of designing and certifying a Reliable Replacement Warhead without the resumption of underground nuclear testing.

Mr. EVERETT. If so, please explain the basis for your conclusion.

Dr. OVERSKEI. I requested a member of the task force, with one of our support staff, to question the designers at LLNL and LANL on this specific question. The head of the design groups at each of the two laboratories was individually queried on this exact question. Both design group heads agreed that a RRW with enhanced surety and use control features and higher margins could be designed without resumption of underground nuclear explosive testing, if the RRW design did not have to meet the previous yield/weight and yield/size requirements. This has also been

reconfirmed to me in subsequent post SEAB discussions with the same laboratory design heads.

With these relaxed requirements, the warhead design space is much more tractable. The breadth of understanding developed in the last 15 years through the investment in the Science Based Stockpile Stewardship Program provides the basis for the designer confidence. The Labs have used this investment to develop modern computational tools, validated against data from previous nuclear test results. Many of the surety and use control mechanisms can be tested with new conventional test apparatus available at the three design laboratories without a nuclear explosive package test. These tools can now be used to design future systems. The combination of improved computational tools validated by existing test data, less restrictive design constraints, and higher operating margins, coupled with designers' confidence convinced our panel that the RRW can be implemented without a resumption of nuclear testing.

Mr. EVERETT. In your testimony you highlight the fact that security costs within the Complex are approaching $1.0 billion a year. What is your assessment of how the DBT is being implemented at existing NNSA sites?

Dr. OVERSKEI. The DBT is being implemented without uniformity. This, in principle, is laudable, since the potential security threats, the terrain and the target material vary from site to site, and each site should not be considered to have the same risk profile. Thus, an informed, "graded" approach to site security is reasonable.

However, during the SEAB visits to the Complex sites last year, no graded approach to DBT implementation was evident. All sites appeared to be treated as having the same level of risk. Furthermore, threat frequency (i.e., the probability of occurrence of particular threat scenarios) did not appear to be taken into account. We recognized that assuming all threat scenarios to have a probability of occurrence of unity is conservative, and that the postulation of actual threat frequencies is very uncertain. Nevertheless, more realistic assumptions about the capability of adversaries to plan, stage, and execute various scenarios should be developed, perhaps as a joint effort with the DOD.

In addition, the requirement placed on site defenders to **completely "deny access"**—a zero probability of having the attacking force gain access to one or more targets, even for a brief period—is extremely unrealistic and exponentially increases the cost. Alternative strategies should be considered that incapacitate or eliminate the attacking force prior to any effective use of the target material. It is recognized that the deployment of systems to incapacitate or eliminate unauthorized intruders have the potential for inadvertent actuation, so that a potential safety risk might be incurred in order to reduce security risk. Modern risk-informed decision analysis is quite capable of examining the benefits of security risk reduction and any associated safety risk penalties, and comparing those benefits and penalties with the deployment and operational costs of the system along with any reductions in overall site efficiency and productivity in the conduct of their primary work mission. Capital and operational security costs at certain DOE sites may far outweigh the value of the work performed at those sites, work that could be performed elsewhere equally well, and be secured for far less money.

Mr. EVERETT. With respect to NNSA and DOE security plans and compliance with the Design Basis Threat, what are your principal concerns? What, if anything, aside from material consolidation would you change in the area of current security practices within the current DOE complex?

Mr. STOCKTON. POGO has a number of concerns about security at the U.S. nuclear weapons complex. In addition to the urgent need to deinventory sites containing Special Nuclear Materials in highly-populated areas, such as Lawrence Livermore Lab, the following items remain our primary concerns:

- The 2003 DBT is to be fully implemented by October 2006. This is five years after 9/11. We believe there are several sites that will not be able to meet the 2003 DBT. The GAO has the same concerns. We understand that some sites are already requesting waivers because they can not meet the DBT—Hanford, Oak Ridge National Laboratory (ORNL), and one building at Y–12 has already received a waiver. The only way to determine whether a site meets the DBT is with performance tests—full up force-on-force (FOF). Generally when protective forces "win" a FOF they lose a high percentage of their force. Those results raise questions about combat effectiveness. It is important to keep in mind that the three major advantages that a terrorist group has in an attack is surprise, speed, and violence of action—none of which are tested in a FOF. POGO believes the site should be able to win a FOF test decisively—they don't.
- There is one critical site that requires a denial strategy—we believe the site has the wrong protective force on the target. We would be happy to supply the identity of the site to the committee, but do not want to identify it in a public document.

- Building 3019 at ORNL that houses weapons quantities of U–233 (that could be used to create an Improvised Nuclear Device (IND) or nulear detonation) has no Perimeter Intrusion Defense Assessment System (PIDAS) or stand-off truck bomb barriers. Their security plans still depend on deploying SRT's from Y–12 to save the day at ORNL, leaving Y–12 vulnerable in case the attack at ORNL is a diversion. In fact, the SRT's would arrive long after the battle is over. Recently there was an independent security inspection by DOE headquarters of ORNL—they did not even bother to run a force-on-force test. Several years ago, ORNL ran a self-assessment FOF where the adversaries "killed" the entire ORNL guard force in 90 seconds. Because of Building 3019's location at the lab it is not clear they could protect the U–233, no matter what they did. It appears the only solution is to blend down the U–233 immediately.
- DOE is in the process of spending millions of dollars on high-tech weapons, and detection technologies. In a number of cases, there are questions about the demonstrated effectiveness of these technologies. DOE should not spend millions of dollars deploying these technologies until they are proven effective.
- Admiral Meis' recent report to NNSA raises very basic questions about DOE's inability to develop their security plans. Issues of concern include: capability to develop vulnerability assessments; realism of limited scope force-on-force and full up FOF tests; development of Site Specific Security Plans (SSSP); DOE Headquarters' inability to review the SSSP's; quality of the adversary force being used in the Headquarters FOF tests; the lack of NNSA headquarters' oversight of security; and other deficiencies. We would encourage the Subcommittee to be briefed by Admiral Meis and his staff, if it has not already done so.
- The Y–12 Highly-Enriched Uranium Material Facility (HEUMF): Most security experts believe that modern nuclear facilities, and particularly SNM storage facilities should be underground or bermed, where only one side has to be protected. HEUMF was changed from a bermed facility to above ground, with five sides to protect. The costs for construction have ballooned from $90 million to close to $400 million. They are currently experiencing construction problems because of the misreading of blue prints. We believe it is not too late to change the design, and require that it be at least bermed, if not underground.
- There are tens of tons of NNSA's Highly-Enriched Uranium (HEU) at two Nuclear Regulatory Commission (NRC) regulated facilities—Nuclear Fuel Services (NFS) in Tennessee and the BWXT facility in Lynchburg, Virginia—which fabricate fuel for the naval reactor programs. These sites are protected to a significantly lower security standard than DOE sites with the same HEU. A major concern about HEU is how quickly and easily an IND can be detonated using HEU. The IND issue is a Special Access Program (SAP) at DOE. NRC staff are not read into the SAP, because the Commission does not allow NRC personal to be polygraphed—a DOE requirement for learning about IND's.

Therefore, the NRC does not understand the full risk posed by these two Category I facilities.

Mr. EVERETT. With respect to the overall weapons design work at the three national labs and the shifts in Work for Others efforts for the intelligence community and for homeland security, is it time to take a fresh look at all (not just "weapons design") work done at the three labs and make some strategic decisions for reallocating the nature of work done let's say 10 years from now so as to achieve a healthy balance between the labs while retaining the "peer review" concept?

Mr. D'AGOSTINO. Our plans for "Complex 2030" assume that we will continuously evolve the work of the National Nuclear Security Administration (NNSA) design laboratories over the next 10–15 years. While the future research and development complex would retain two independent centers of excellence for nuclear weapons work at Los Alamos National Laboratory and Lawrence Livermore National Laboratory (each supported by Sandia National Laboratories for non-nuclear component design) we may make changes that will reallocate the nature of work done at an individual lab to achieve a healthy balance among the labs. At the same time, we plan to eliminate redundant capabilities and programs reflected in today's complex. 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.

Further, we intend to identify and pursue additional strategic collaboration with other agency programs that provide technical challenges, enabling stewardship missions and national security. That process of strategic planning with other agencies will include intelligence and homeland security communities and should provide broader knowledge of overall program character and balance for the NNSA and other agencies in part to keep broad peer review enabled.

Mr. EVERETT. At what point in the future do you think NNSA will realistically know whether you will be able to shift from the existing Life Extension Programs for our legacy weapons to the new Reliable Replacement Warhead program? What specific aspects of the complex would be most impacted by a potential future shift to an RRW-only nuclear stockpile?

Mr. D'AGOSTINO. The National Nuclear Security Administration (NNSA) is working in partnership with the Department of Defense (DOD) to define the most efficient stockpile transformation strategy. It is our desire to establish this transformation plan in a timely manner. Thus, our objective is to establish an all-Reliable Replacement Warhead stockpile plan as soon as practical after the benefits of the RRW have been confirmed and engineering development of the first warhead has been authorized by the Nuclear Weapons Council.

NNSA and DOD are evaluating how to achieve an objective where RRW warheads comprise the majority of the stockpile by 2030. Early planning indicates that some refurbished (e.g., W76–1) and long-life (e.g., B83) legacy weapons will remain in the stockpile for augmentation until the mid to late 2030s. Every part of the nuclear weapons complex will be involved and made more efficient in a transformation to an RRW-only nuclear weapons stockpile. Transformation to a responsive infrastructure, as outlined in the "Complex 2030" vision, is enabled through transformation of the stockpile with RRW concepts.

Mr. EVERETT. The Overskei Task Force recommended that new storage facilities for storage of Category I/II nuclear materials should be constructed underground. Given the design and construction problems that NNSA has experienced on the HEUMF project at Y–12, has NNSA considered starting over with a new, more robust design for an underground facility as has been suggested by POGO?

Mr. D'AGOSTINO. None of the recent developments suggest a weakness in the current facility for the Highly Enriched Uranium Materials Facility (HEUMF). We have found no problems with the current design and the construction subcontractor's performance problems were resolved within a few months. Construction has resumed.

The choice between an underground and an aboveground design involves balancing many factors and all relevant factors were considered during validation of HEUMF's requirements. Each alternative offers unique advantages and disadvantages. Although some believe an underground design is inherently more secure, modern military technology for penetration of defenses weakens the case for the underground design and modern defensive technology strengthens the case for the aboveground design. The final choice has to balance all relevant factors to select the design that balances all considerations.

Over two years before the Task Force's report, the National Nuclear Security Administration (NNSA) had evaluated the aboveground and underground alternatives found the aboveground alternative to meet the Design Basis Threat (DBT) with an adequate performance margin at a lower construction costs. The HEUMF project began construction in 2004, well before the Task Force prepared its recommendation.

NNSA routinely evaluates its projects in light of new developments, however post-construction design changes such as those recommended by the Project on Government Oversight (POGO) will be very expensive and are not feasible. The 2004 changes to the DBT required extending the highest security features to an additional part of the facility. Making even this relatively modest design after start of construction has delayed the project by over eight months at a considerable increase in costs. A more fundamental change such as the addition of berms around the facility walls would require a major redesign of the entire facility and delay the project by one or more years. Addition of the berm's weight (a less significant structural change than total burial per POGO's recommendation) requires significantly more complex and expensive construction to meet nuclear seismic requirements. The significant delays and additional costs would not provide a commensurate improvement in security response over the robust security response already provided by the less complicated and inherently less expensive aboveground design.

NNSA will not approach the design of future high security nuclear materials facilities with any preconceived notions or *a priori* constraints on the design, but will instead continue to evaluate the full range of alternatives.

Mr. EVERETT. Recently, we have heard that the Russian Federation may not be inclined to support Russian funding for construction of a Russian Mixed Oxide or MOX facility for the disposition of excess weapons grade plutonium under the 2000 agreement signed by Russia and the United States. Assuming for a moment that the Russians did not proceed with a program to dispose of their excess plutonium under this agreement, would the Department of Energy nevertheless recommend that the United States proceed with the South Carolina MOX facility to dispose of

excess U.S. weapons-grade plutonium as a domestic plutonium disposition project? Aside from MOX, what are our other options for plutonium disposition in the United States?

Mr. ANDERSON. Although officials from the Russian Federation have informed the United States that they will use light water reactor technology to dispose of plutonium only if the costs are fully funded by international contributions, they have repeatedly stated that they remain committed to the 2000 agreement, in which both countries agreed to dispose of 34 tons of excess plutonium. We expect the Russian Federation to live up to its commitment. While discussions continue about the type of technology the Russians may use for plutonium disposition, the Department of Energy has decided to begin construction of the MOX facility in South Carolina this fall. Construction in South Carolina will proceed irrespective of the timing of Russian decisions about plutonium disposition.

As part of a 2002 review of non-proliferation programs, DOE considered more than forty approaches with twelve distinct options, which were considered for more detailed analysis for plutonium disposition. A list of the options that were examined is available in the February 15, 2002 "Report to Congress: Disposition of Surplus Defense Plutonium at Savannah River Site." As a result of the review, DOE confirms its decision to pursue a disposition approach that involves irradiating plutonium as mixed oxide (MOX) fuel in nuclear reactors.

Mr. EVERETT. You were just assigned to serve as Chairman of the Nuclear Materials Disposition and Consolidation Coordination Committee last November. However, this committee is aware of similar efforts that preceded your current committee's tasking although it does not appear that previous efforts have actually developed a consolidation plan. What is your understanding of why it has taken so long for the Department to get where it is today on the issue of material consolidation?

Mr. ANDERSON. Prior to the end of the Cold War, responsibility for management of the Department of Energy's (DOE) nuclear materials resided with a single entity, the Nuclear Materials Production program. Following the end of the Cold War, national priorities shifted from producing the nuclear materials necessary to support our national security to non-proliferation and cleaning up the weapons complex. Thus, responsibility for management of the DOE's existing nuclear materials was re-assigned to the individual programs that needed to use the materials. These programs have diverse missions (national security, science, energy production, and environmental cleanup) and the sequence of consolidation and disposition activities must be carefully considered to assess the effects on a range of programs to avoid hindering mission objectives, and to comply with all applicable laws and regulations. To address these cross-organizational issues, the restructured Nuclear Materials Disposition and Consolidation Coordination Committee has representatives from all affected organizations to formulate and implement integrated consolidation solutions.

QUESTIONS SUBMITTED BY MR. SKELTON

Mr. SKELTON. People are always the key to any successful transformation. And it is the people working at the Kansas City Plant that deserve the credit for its reputation for delivering on commitments. That sustained excellence and value would be jeopardized by moving the mission away from the skilled people and the region. Do you acknowledge the risk to the mission of moving operations to another site?

Mr. D'AGOSTINO. I acknowledge that there are risks to the mission of moving operations to another site. Throughout the history of the nuclear weapons program there have been mission shifts that have resulted in cessation of operations at one site and movement of work, and people, to other sites. The end of the Cold War started a transformation of the nuclear weapons complex that resulted in shifting missions from facilities in Mound, Ohio, and Pinellas, Florida. Similarly, problems with the operation of the Rocky Flats Plant resulted in its closure and subsequent movement of some of its operations to other sites. The Kansas City Plant was a beneficiary of past mission reassignments, such as its current reservoir work and secure transport work. In addition, we also acknowledge that people frequently underestimate the challenges of transferred a skilled workforce to a different location. We intend to weigh these risks as we plan for continuing the transformation of the weapons complex.

Mr. SKELTON. Currently, the Kansas City Plant contracts with commercial firms for about 50 percent of the non-nuclear parts for our nation's nuclear weapons. Is outsourcing this large a part of our nuclear weapons production base strategically wise? How can we be assured of the pedigree of the firms and the parts if you expand the share of our nuclear weapons parts that are outsourced?

Mr. D'AGOSTINO. The degree of outsourcing is both strategically wise and economically essential. Most of the military technology that the Department of Defense acquires comes from the defense industrial base, as does a substantial amount of the equipment purchased by the National Aeronautics and Space Administration and other agencies with national security responsibilities, such as the Department of Homeland Security. In our vision of the future, we plan to procure non-nuclear components from commercial suppliers through a supply chain management center when this is technically and economically the best solution. We will make non-nuclear parts when this is the best choice for cost or security reasons. One of the key capabilities that have evolved at the Kansas City Plant is in this area of supply chain management, in addition to maintaining the in-house design and manufacturing capability for selected parts, components, and subsystems.

Mr. SKELTON. I understand that the contractors for NNSA's Pantex and Y–12 Plants both received 5-year contract extensions recently. In light of these decisions, can you explain why the Kansas City Plant contractor received only a 2-year extension?

Mr. D'AGOSTINO. The decision on the more limited contract extension was taken after a thorough review and extensive consideration. It was not a reflection on the performance of the managing and operating contractor, Honeywell Federal Manufacturing and Technology. We are addressing the changing requirements within the nuclear weapons program. We have been concerned about the costs of maintaining both aging facilities and larger facility footprints than we believe are currently required. Unlike the nuclear facilities, which are also undergoing significant footprint reduction involving large acreage and many buildings, the Kansas City Plant is located in a portion of one very large building—originally intended to produce military aircraft engines for World War II. We limited the extension to two years as part of a broader strategy to look at options to reduce the footprint in place, to identify an attractive local alternative, or to consider mission relocation. As the Congress is aware, the Department of Energy has been encouraged to look at the overall makeup of the nuclear weapons complex during this period and there was an Infrastructure Task Force of the Secretary of Energy's Advisory Board that performed a specific study in response to Congressional direction. This two-year extension also provides the National Nuclear Security Administration with management flexibility to respond appropriately to Secretary of Energy guidance stemming from the Task Force report and other considerations. It should also be noted that the Department of Energy retains the option to extend the contract further.

Mr. SKELTON. I understand part of your plan for consolidating the nuclear weapons complex includes creating a new non-nuclear production facility by 2012. What are the advantages of building a new facility over modifying the current KCP and how do you plan to finance this new facility?

Mr. D'AGOSTINO. The National Nuclear Security Administration is carefully considering options for non-nuclear production over the long-term. We are considering the pros and cons of a new production facility—one that is modern, safer, appropriately secure, more energy efficient and environmentally sensitive, and right-sized for the known and projected workload. The current Kansas City Plant is old, has environmental issues, is bigger than our current needs require, does not have an optimal energy profile, is costly to operate and maintain, and would be expensive to refurbish. Current analyses indicate that a new non-nuclear production facility designed according to modern manufacturing principles would be more cost-effective to operate. A new facility, properly designed for the mission, would be easily reconfigurable to meet current and future production requirements, use modern open layouts to minimize barriers to product flow, and would incorporate technology-enabled business practices. The financing of either a major refurbishment or new facility is a challenge—one that will be addressed as part of our planning and budgeting.

QUESTIONS SUBMITTED BY MS. TAUSCHER

Ms. TAUSCHER. Can you give us your concept of what, depending on the answer for this study, what you think the opportunities are going forward on the pit facility and how that kind of goes into everything else?

Mr. D'AGOSTINO. An understanding of the changes in the mechanical properties of plutonium with age remains essential to our ability to design and certify a nuclear weapons stockpile that is sustainable for the long-term absent nuclear testing. Along these lines, the National Nuclear Security Administration (NNSA) has been working closely with the Department of Defense to understand plausible future stockpile compositions and sizes and their implications for required pit production

capability and capacity. Specifically, stockpile scenarios have been evaluated with respect to weapon lifetimes, production rates, and transforming the stockpile by the 2030s to determine the component production capacity that best balances the trades between these parameters. These considerations led to our plan for pit production in the near-term at Los Alamos National Laboratory's (LANL) TA–55 facility and in the longer term, at a new consolidated plutonium center for pit production and plutonium research and development requiring significant plutonium quantities.

The production capacity that can be established at TA–55 beginning in 2012—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 and we anticipate that by the end of FY 2006, the NNSA will complete an extensive effort to provide system-specific pit lifetime estimates. 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 Reliable Replacement Warheads (RRW) into the stockpile by 2030. We should not assume that RRW could employ existing pits 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. For planning purposes, an annual production capacity of about 125 war reserve pits per year is about right. This capacity assumes nominal single shift production rates and provides a surge capacity with multiple shifts to support short-term unexpected threats.

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