

Testimony presented to the House Energy and Water Development Appropriations Subcommittee

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Chairman Visclosky, it is a privilege to appear before this Subcommittee today to provide my views on the important topic of this hearing: Reducing the cost of the US nuclear weapons complex.

As some of you know, I held the position of NNSA Deputy Administrator of Defense Programs, from early in 2002 until my retirement from NNSA at the end of March, 2005. Prior to that period of government service, I was Deputy Managing Director of the UK Atomic Weapons Laboratory from early in 2000 till the end of 2001. I also served as the DOE Principal Deputy Assistant Secretary for Defense Programs from 1991 until the end of 1995. Earlier, I was employed by Sandia National Laboratories for 30 years, with my final position being that of Vice President for Weapons Programs. Although retired from full-time employment for the past four years, I have been active in several advisory capacities to various government programs such that I am reasonably informed of the details of the present NNSA programs and the DoD requirements for the nation's nuclear weapons stockpile.

INTRODUCTION:

I was requested by the staff of your committee to testify today on the subject of how, within the financial limitations that appear to be upon NNSA, it may be possible to reduce costs and still execute the programs required to assure the President that the nuclear weapon program is strong and durable, and that the stockpile is safe, secure and reliable.

Before going into the details of my answer, let me first say that the foundation of NNSA's capability to deliver on its commitments now and in the future resides in the technical staff in the program. Nothing is more important for the long term health of the program than to retain the outstanding people presently in the program, especially the contractor workforce but also in federal employment, and to be able to recruit their replacements when the time comes. I will have much to say later about several key NNSA facilities and the funds required to maintain them. However, in the constrained NNSA budget environment which this committee is contemplating, it may be necessary at this time to postpone or re-plan desirable facility acquisitions or improvements in order to be certain not to sacrifice brains for buildings.

It is equally important to recognize that these people must have challenging work to do if they are to be capable of performing the job the country requires. It cannot just be busy work, or routine meter-reading work. We are talking here about the foundational capability to assure the President that the nation's nuclear weapons capability is sound, and that the weapons are safe, secure and reliable. That is a very hard job, which requires the nation's best people working on hard problems to retain their technical excellence. However, you cannot expect the

keep good people on a job, no matter how important, unless they have challenging work to do.

PROBLEMS TO CONSIDER:

I will not elaborate on the many things that come to mind when attempting to answer the question posed. Rather, I will focus on 10 major problems which I believe provide the opportunity, although not without making sacrifices, to reduce NNSA operating costs by many hundred million dollars per year, without requiring any of its core activities to be terminated or even greatly reduced, and which would also allow NNSA to deliver on its commitments to maintain a strong nuclear weapon program and to assure stockpile safety, security and reliability.

I have listed here 10 problems, the solutions of which I believe have the potential to yield substantial savings for NNSA, if implemented soon. They are ordered such that the largest potential savings are presented first, with smaller potential savings coming later.

1. **Due to unacceptably high projected construction and operating costs, NNSA should re-plan and re-site PDCF at SRP.** PDCF is the Plutonium Disposition and Conversion Facility presently in design and planned for construction at the Savannah River Plant (SRP). It is intended to receive surplus plutonium pits following the dismantlement of weapons at Pantex, and to process them to yield plutonium oxide for feedstock at the mixed-oxide (MOX) fuel fabrication facility. Responsibility for the PDCF was shifted to NNSA/Defense Programs last year by congress, after being in design for several years in NNSA/NN. It is presently thought to be well over its intended budget, by perhaps a billion dollars, or more.

The Solution: This project is being planned to accommodate destruction of all the various pit types in storage at Pantex or presently in the stockpile, including those which, in fact, are quite complex and difficult to disassemble and convert to Pu-oxide of an acceptable form for feedstock to the MOX facility. The project should be re-planned such that it has equipment and processes to accommodate only the high-population, easy-to-process pits, leaving the difficult pits to be processed at LANL, where both equipment and skilled personnel are available for this highly specialized job. In fact, this still sends the majority of the pits to PDCF to be processed, but only the ones which can be processed with the least difficulty and at the lowest cost. Also, the present siting for PDCF is a green-field site, which requires a new PIDAS security structure and system, as well as a new, large CAT I/II building, whereas a smaller, less complex PDCF could probably be sited within an existing PIDAS and CAT I/II facility at the K-Area Reactor building.

2. **Due to unacceptably high projected construction and operating costs, NNSA should defer construction, down-size the planned operating spaces, reduce contingency space and re-assess security savings of UPF at Y12 Plant, based on the new NPR (Nuclear Posture Review).** The UPF (Uranium Processing Facility) project is a large, enriched uranium processing facility at the Y12 plant, intended to replace existing facilities (bldg 9212, among others) which are very old and were originally designed with standards that are unacceptable today in both safety and security features. However, the design was started several years ago when the work load appeared to be considerably larger than now appears to be the case.

The solution: It appears the UPF design can be down-sized to accommodate the future workload and work scope, resulting in substantial cost savings. It appears that the present UPF design is at least 25% too big in its planned work spaces, contains too much contingency space, and is too complex, including a massive commitment to glove box operations beyond the present operational concepts at Y12. Also, since UPF cannot be completed until the most significant manufacturing requirement for UPF will have been completed (namely, the W76-1 Live Extension program), re-scoping and delaying the UPF project will not significantly delay NNSA deliverables to the stockpile. It does appear that the re-sized UPF should be constructed at Y12, rather than moved to Pantex or another nuclear operations site, since the recent construction costs of the new storage facility (HEUMF) were high, and that storage facility would also have to be replicated at whatever site is chosen for UPF.

3. **Due to extremely high security costs at all its sites, NNSA should re-visit the strategies and analysis tools which have been used by DOE and NNSA to specify requirements which have, either directly or indirectly, resulted in massive security upgrades of facilities and force levels.** Following the attack on the Twin Towers in NYC on 9/11/01, the security standards required by DOE and NNSA were substantially upgraded – not once, but twice. In response, there have been many facility upgrades to improve security, as well as much more rigorous standards required of facility operations involving SNM (special nuclear materials). The result has been an increase in the NNSA security budget from approximately \$300 million to approximately \$900 million per year.

The solution: NNSA should team with those elements of the DOD responsible for nuclear weapon security (both the Navy and the Air Force) to develop a set of facility and operational standards which apply to both agencies, with due allowance taken for the nature of the nuclear material being secured and the differences between military and civilian security force operations.

4. **To reduce its budget requirements, and in response to the smaller stockpile anticipated with the new NPR, NNSA should re-plan the production requirements for**

the plants and the lab support (this should specifically include CMRR/NF and UPF). The operational requirements and the major facilities requirements presently being planned by NNSA and its contractors (both nuclear and non-nuclear facilities) have probably not been reduced in size and scope to fully reflect the NPR presently being developed by the Administration.

The solution: In addition to the potential down-sizing of several proposed NNSA facilities, this proposed re-planning will further reduce manpower requirements, material purchases and plant requirements, especially at the Kansas City Plant and the Y12 Plant, as well as the tritium requirements from the Savannah River Plant and neutron generator requirements from Sandia. It will not impact the Pantex Plant as much since the new NPR will probably also increase the dismantlement workload. This increased dismantlement workload can be accommodated at the Y12 plant by putting more secondaries into storage in the new HEUMF storage facility and dismantling them when time and space permits. Also, the reduced workload at the Kansas City Plant will bring into question the need for the proposed 3rd-party financed manufacturing facility at that site.

5. **NNSA should re-examine and reduce the fee-structure for its Management and Operating (M&O) contracts, while simultaneously reducing the federal oversight.**

Early in this decade, at the urging of the congress (especially the House of Representatives), the NNSA raised its fee-structure for M&O contracts, ostensibly to encourage greater responsibility for operational results being assigned to the M&O contractors, and suggested that there could thereby be less oversight and management control from NNSA. The results have not been as anticipated, largely because the DOE and NNSA management and the congress have continued to insist upon endless inspections and oversight activities by the federal government. The only obvious change is that some award fees for these contractors now exceed \$50 million/year for a given contractor, where in the past they may have been between 1 and 10 million dollars.

The solution: Two things need to be changed: the award fees need to be reduced by at least a factor of two; and, DOE and NNSA and the congress need to coordinate and reduce their oversight and inspections in such a way that these highly intrusive and expensive activities are reduced by at least a factor of four. The present arrangement encourages the contractors to focus on award fee criteria and on earning award fees, rather than focusing on providing service in the national interest.

6. **The move within the Obama Administration and the DOE to re-emphasize fusion research makes it obvious that NNSA should not be the only funder of the ICF program,** especially now that the LLNL NIF facility has come on line as an operating facility and the realities of its large operating costs must be confronted.

The solution: A substantial portion of the multi-hundred-million dollar/year operational expense at NIF should be picked up by the DOE Office of Science, since the work now underway has the potential for significant positive impact to the civilian fusion energy program objectives. (Obviously, the Office of Science would also manage the work that it funds). Much of the work at NIF will continue to be primarily focused on weapons physics and that work should continue to be funded by NNSA. However, perhaps as much as half of the ICF program expenses should now be borne by DOE/Office of Science, due to the large potential impact of work in the NNSA ICF program on the future of civilian fusion power.

7. **In a similar manner of insisting that the benefitting customer pay the appropriate bill for operations, the NR program within NNSA should pay for its operations at the Y12 Plant and the NN program within NNSA should pay for its operations at the Y12 Plant.** At present, most of these program costs at Y12 are being paid from the weapons budget.

The solution: NNSA should determine the program costs for these two programs currently paid from the Defense Programs budget and instruct the respective NR and NN programs to transfer funds to DP this year to cover those costs. In subsequent years, the Y12 plant should bill the correct offices within NNSA for these program costs.

8. **During FY2007 and 2008, NNSA conducted an extensive NEPA study, under the Office of Transformation, to determine the major facility additions, modifications and/or improvements required by the weapons program in order to be agile, capable and cost effective in meeting its program obligations over the next 30-60 years. This activity culminated in a Record of Decision being issued late in CY2008. However, the Congress has indicated that it will be unwilling to consider any of those Decisions until the new NPR is issued and NNSA has aligned its programs to be consistent with that NPR. This leaves NNSA with a complex which is too large and too expensive to operate.**

The solution: In order to move expeditiously toward the proper configuration and capacity for the weapons complex, Congress should study the full set of actions contained within the ROD and fund those that are obviously required by the smaller stockpile anticipated to be in the new NPR, so long as the pay-back period for each project so funded is less than 10 years. Several examples may be: the project to consolidate Major Environmental Test Facilities at the three labs, by reducing to one lab; and the footprint reduction project at the Tonopah Test Range, among others. Large projects which have longer pay-back periods could wait for funding until Congress is satisfied that they are consistent with the new NPR.

9. **The present semi-autonomous relationship (within DOE) directed by the Congress when NNSA was formed has created more problems than it has solved.** For instance, both entities (NNSA and DOE) have general counsel offices, as well as many redundancies within the administrative functions. There is great overlap as to who has responsibility for oversight at field operations. And it goes on and on. As a result, among other problems, the NNSA field offices are much larger than originally planned, and the M&O contractors are forced to staff their organizations to respond to all of this redundant oversight.

The solution: Congress should instruct DOE and NNSA to vigorously and expeditiously study the re-organization of the NNSA to achieve full autonomy of the NNSA, reporting to the President either directly or through the DOE. Another alternative might be the recent recommendation from the Stimson task force to form an independent agency for National Security Applications. Or, if those are not the right answers, then NNSA should be re-absorbed back into the DOE.

10. **Due to reductions in the nuclear weapon stockpile, including those anticipated from the next NPR, NNSA has adequate quantities of tritium for many years to come and should not plan to operate the newly-constructed Tritium Recovery Facility at the Savannah River Plant for many years.**

The solution: In spite of having only recently initiated hot operations at the plant, NNSA should put the newly-constructed Tritium Recovery Facility into cold standby, with the expectation to restart it when it becomes necessary to generate new tritium, in perhaps 10 years. Also, NNSA should downsize all operations at that plant, consistent with the NPR and with downsizing of other NNSA operations.

As I stated at the beginning of this testimony, this list of topics for consideration in seeking to reduce NNSA's near-term budget shortfall is by no means all-inclusive. It does contain the biggest potential budget impacting projects that I could identify. Also, some actions may already be underway within NNSA, of which I am not aware, to address some of these problems.

FINAL CONDITIONAL STATEMENT:

The overriding considerations upon which I have made these suggestions are the following: if the Congress and the Administration can agree that this is not a time to require NNSA to maintain capability and capacity to accommodate the normal broad range of contingencies, but rather to respond to troubling world events when they occur (with emergency appropriations, for instance, when necessary), it appears to me that all of these topics and the proposed solutions are deserving of serious consideration.