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**CREATION AND IMPLEMENTATION
OF THE NATIONAL NUCLEAR
SECURITY ADMINISTRATION**

HEARING

BEFORE THE

SUBCOMMITTEE ON STRATEGIC FORCES

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

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CONTENTS

CHRONOLOGICAL LIST OF HEARINGS

2012

	Page
HEARING:	
Wednesday, June 27, 2012, Creation and Implementation of the National Nuclear Security Administration	1
APPENDIX:	
Wednesday, June 27, 2012	13

WEDNESDAY, JUNE 27, 2012

CREATION AND IMPLEMENTATION OF THE NATIONAL NUCLEAR SECURITY ADMINISTRATION

STATEMENTS PRESENTED BY MEMBERS OF CONGRESS

Turner, Hon. Michael, a Representative from Ohio, Chairman, Subcommittee on Strategic Forces	1
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WITNESSES

Aloise, Eugene, Director, Natural Resources and Environment, U.S. Government Accountability Office	4
Brooks, Amb. Linton F., Senior Advisor, Center for Strategic and International Studies, Former Administrator, National Nuclear Security Administration	1
Kuckuck, Dr. Robert W., Former Principal Deputy Administrator, National Nuclear Security Administration, Former Director, Los Alamos National Laboratory	3

APPENDIX

PREPARED STATEMENTS:	
Aloise, Eugene	41
Brooks, Amb. Linton F.	22
Kuckuck, Dr. Robert W.	34
Sanchez, Hon. Loretta	20
Turner, Hon. Michael	17
DOCUMENTS SUBMITTED FOR THE RECORD:	
[There were no Documents submitted.]	
WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING:	
Mr. Thornberry	59
Mr. Turner	59
QUESTIONS SUBMITTED BY MEMBERS POST HEARING:	
Mr. Heinrich	88
Mr. Langevin	87
Ms. Sanchez	75
Mr. Turner	63

**CREATION AND IMPLEMENTATION OF THE NATIONAL
NUCLEAR SECURITY ADMINISTRATION**

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON STRATEGIC FORCES,
Washington, DC, Wednesday, June 27, 2012.

The subcommittee met, pursuant to call, at 3:35 p.m., in room 2118, Rayburn House Office Building, Hon. Michael R. Turner (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. MICHAEL TURNER, A REPRESENTATIVE FROM OHIO, CHAIRMAN, SUBCOMMITTEE ON STRATEGIC FORCES

Mr. TURNER. Call to order the Strategic Forces Subcommittee. We are going to be under a severe time constraint because votes are occurring at approximately around 4:00, and when they do, they are going to be a very long series, and then all the Members have an obligation after that. So we're going to do a real short compression; both the ranking member and myself are going to waive our opening statements and merely put them into the record.

[The prepared statement of Mr. Turner can be found in the Appendix on page 17.]

[The prepared statement of Ms. Sanchez can be found in the Appendix on page 20.]

Mr. TURNER. I want to recognize Ron Barber of Arizona, who is our new member. We welcome you.

And we would like to immediately then turn for opening statements to our panel members with the prospects of maybe doing some 2-minute rounds of questions, so as people have things, they might be able to get to theirs. So, Ambassador Brooks, we will begin with you.

STATEMENT OF AMB. LINTON F. BROOKS, SENIOR ADVISOR, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES, FORMER ADMINISTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION

Mr. BROOKS. Thank you, Mr. Chairman, Ranking Member Sanchez, members of this committee. I have submitted a detailed statement, and what I am going to do is make a series of assertions which I hope that statement either amplifies or backs up. I am going to describe the situation through January 2007 when I left the NNSA [National Nuclear Security Administration]. I am not qualified to speak in detail about today.

NNSA was formed in the belief that reforms, especially in security, would be impossible within the Department of Energy bu-

reaucracy as it existed at the time. In standing up NNSA we, or at least I, had three broad objectives: first, to streamline the organization, avoid duplication, and clarify roles and responsibilities of Federal officials; second, to restore the appropriate division of labor between the national labs and their Federal overseers. We believed, and I believe today, that the right relationship is for the Government to decide what to do and the laboratories to decide how to do it. And, third, to establish the appropriate degree of autonomy within the Department of Energy. And we adopted the term “semi-autonomous,” which is not what the legislation actually says, to describe what we were seeking.

We started by trying to correct the organizational inefficiencies and clarify responsibilities, and while that is a never-ending process, I think we made significant process—progress, which I have detailed in my statement.

We were much less successful in establishing the proper balance in oversight, especially at the national laboratories. In part this was because we failed utterly at developing an acceptable common understanding with DOE [Department of Energy] on what semi-autonomy meant. And I have provided a fair amount of additional detail on that point in my detailed prepared statement.

Now, what lessons should the committee draw from our experience? First, I think our broad approach was right then and I think it's right now, but the effectiveness of a semi-autonomous NNSA is too dependent on the personalities and preferences of officials outside of the organization. Competent, dedicated people can make any organization work, and virtually all NNSA senior officials and all DOE senior officials are both dedicated and competent. But the present arrangement required, at least in my day, constant effort from senior officials, and thus diverted them from focusing on the mission. Ultimately, as I said in a statement I submitted for an earlier hearing, I believe NNSA will need to be made a stand-alone organization.

Secondly, clear lines of authority and accountability are made more difficult by the number of external bodies to whom the administrator is in some sense accountable. Separating NNSA from the rest of DOE will solve part of that problem, but it won't solve all of it. There will still be the Defense Board, the Congress, the GAO [Government Accountability Office], the White House, somebody's Inspector General.

And finally, if the Congress wants, as I believe it should, the relationship between NNSA and the laboratories that I described as part of our vision, it has to guard against the tendency when problems arise to ask why Federal overseers didn't find the problem in advance and prevent it through more detailed audits and more detailed inspections.

The pressure, which in fairness has not primarily come from this committee, at least when I was doing this, makes it more difficult for us to preserve the important distinction between the Government leadership responsibility to say what is to be done and the laboratory leadership responsibility to determine how to do it.

Thank you, and after you have heard from my colleagues, I look forward to your questions.

[The prepared statement of Mr. Brooks can be found in the Appendix on page 22.]

Mr. TURNER. Thank you. Doctor.

STATEMENT OF DR. ROBERT W. KUCKUCK, FORMER PRINCIPAL DEPUTY ADMINISTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION, FORMER DIRECTOR, LOS ALAMOS NATIONAL LABORATORY

Dr. KUCKUCK. Chairman Turner, Ranking Member Sanchez, members of the committee, thank you for inviting me this afternoon. I also have submitted a written statement, and I have a few comments to make here, and I will abbreviate them, given the time constraint we are under. My comments come from 40 years at the Lawrence Livermore Laboratory under DOE, 2 years helping the Ambassador and General Gordon as we laid out NNSA, and then returning 5 years later to be the director of Los Alamos to work under NNSA. So I have a very dimensioned view of what we have been through.

I was going to talk a little bit about our vision in setting the organization up. I think I will skip over that since it is in written material, and you have reports to the Congress prior to this. I would only say that I think we did make progress early on, but it was very clear even then that this was going to be a project that required years of effort, continual leadership, and that was even assuming that we were going to be in a semi-autonomous organization, which didn't happen.

Let me jump forward to the 2 years I spent at the Lawrence Livermore Laboratory—excuse me, at the Los Alamos Laboratory in 2005 and 2006. When I arrived, it wasn't long to see that the vision that we had in mind had not been achieved. To my disappointment, I found the working environment there to be at least as burdensome as it was in my experience at Livermore a decade before that and, unfortunately, even more adversarial.

Tasking was coming from various parts of the Federal Government and from various levels of the Government. Some of it was explicit, which of course required unnecessary work and expense from my judgment, but much was implicit; and implicit to me were taskings that we got because of the site office withholding approval documents in a frustrating bring-me-another-rock kind of exercise. It was exhausting and costly. There was implicit tasking coming from site office members making—Federal employees making comments to the staff at the laboratory, and from the Defense Nuclear Facilities Safety Board who had permanent representatives on site at Los Alamos also making comments to the staff, so that the staff was sort of being told don't go there, we are not going to approve it when the time comes.

The implicit tasking embedded inefficiencies and lost opportunities as laboratory employees invented workarounds, compromises to avoid conflicts with these overseers. I saw many examples that cost millions of dollars and many months and months of delay. I am still serving on advisory boards to all three nuclear weapons laboratories, and so I have a strong perception that things have not improved since I left Los Alamos.

I have looked at your legislation, H.R. 4310. To me it feels a little bit like an attempt to legislate the vision that we indeed had back in 2001. Frankly, I think that vision was really management 101, with responsibilities clear and so forth.

Will your bill be enough? I am skeptical. It may be probably necessary, but may be insufficient. I think it is very difficult to legislate the trust, the teamwork, the judgment, the leadership, the balance of risk and mission that is so sorely needed in the endeavor we have today. However, I think it is possible to legislate conditions that will facilitate achieving those ideals.

It has been clear to me in my almost 50 years in this enterprise that the DOE laboratory management relationship has been deteriorating for several years now, maybe back to the days of the tiger teams; year by year, step by step, rule by rule, contract by contract.

The creation of NNSA was an attempt to reverse this trend. I personally believe it has failed to do so. I also am concerned that perhaps we have reached or are nearly reaching the tipping point where the solution by partial organization change won't be possible.

I thank you. I will be happy to answer questions.

[The prepared statement of Dr. Kuckuck can be found in the Appendix on page 34.]

Mr. TURNER. Mr. Aloise.

STATEMENT OF EUGENE ALOISE, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Mr. ALOISE. Mr. Chairman, Ranking Member Sanchez, and members of the subcommittee, I am pleased to be here today to discuss the creation and implementation of NNSA. Today my remarks will focus on NNSA's early experiences, organizing and operating as a separately organized agency within DOE, and NNSA's progress in correcting longstanding problems.

For years before NNSA was established, external studies found problems with the organization and operation of what is now NNSA's principal organization, DOE's Office of Defense Programs. These studies cited continuing problems in the areas of overall management, organization, priority setting, and maintenance of a viable infrastructure and workforce.

In short, Mr. Chairman, prior to the enactment of Title 32, DOE's organization was a mess, with no clear lines of authority. The budget for weapons activities was in two big buckets of money that were sent to the labs and plants with little or no transparency and accountability for what it was being spent on. Title 32 allowed NNSA to step back and come up with something better.

While we continue to identify problems with NNSA's budget processes, the current budget structure is a vast improvement over what existed prior to the enactment of Title 32. Still, in our view, NNSA has never been given a chance to work as the Congress intended. After the enactment of Title 32, DOE and NNSA struggled to determine how NNSA should operate as a separately organized agency within the Department, largely because there were no useful models in Government to follow.

Another complication was DOE's January 2000 implementation plan which did not define how NNSA would operate within DOE; instead, reflecting the opposition of the then-DOE leadership to the creation of NNSA, the implementation plan dual-hatted virtually every single statutory position in NNSA with DOE officials. This practice caused concern about NNSA's ability to function independently.

Also the lack of formal agreements between DOE and NNSA in a number of key areas, such as budgeting and procurement and interpersonal disagreements led to conflicts that prevented effective organizations—operations.

Specifically, in January 2007 we reported on the conflict between NNSA and DOE's counterintelligence offices. In the case of both dual-hatting and the counterintelligence dispute, Congress had to step in and correct the situation. Since then NNSA has made considerable progress in resolving longstanding management deficiencies and security weaknesses.

However, major improvements are still needed in NNSA's management of major projects and contracts, and vigilance is needed in the area of security to ensure that improvements are sustained. In some areas NNSA is viewed as a success. Importantly, it has continued to ensure that the nuclear weapons stockpile is safe and reliable without underground testing. Nevertheless, NNSA still struggles to define itself as a separately organized agency within DOE, and the management problems that exist have led to calls to increase NNSA's independence from DOE.

We continue to believe, as we concluded in our January 2007 report, that while reforms are needed, drastic organizational changes are necessary and questioned whether such changes would solve the agency's remaining management problems. Having said that, GAO stands ready to assist the Congress and this subcommittee in looking for ways to ensure more effective management of NNSA's programs and contractors.

Mr. Chairman, that concludes my remarks. I would be happy to address any questions you or the ranking member or any other member of the subcommittee may have.

[The prepared statement of Mr. Aloise can be found in the Appendix on page 41.]

Mr. TURNER. Thank you. I think what we will do is we will do one round of 2-minute questions if that is okay with everyone, and that way everybody hopefully will get an opportunity to speak. And I'll start.

In the initial statements, there has been a lot of referencing of what the semi-autonomous nature of NNSA was supposed to accomplish. Right-sizing, reinvigorating the staff, reducing burden, employee numbers. Employee numbers have gone back to the same level that they were prior to NNSA. On the administration side, we have not one life extension program that's on track.

Mr. Aloise, you said, you know, they have got progress and success. Not one life extension program is on track. The fact that they have been able to certify that it is safe and reliable is not because of refurbishment and life extension. It has been because, you know, obviously some of the legacy work has been done, but not one of the life extension programs is on track.

I was wondering if everyone could speak for a moment about semi-autonomy. Ambassador Brooks, you said it should be absolutely independent, but it appears that semi-autonomous failed. What was—what—in saying that it failed and we need to go autonomous, why hasn't semi-autonomous worked? And, Mr. Aloise, when you get to your portion, I'd like you to give me that context of how we can consider this success when not one life extension program is on track. So there are calls for a number of groups, besides just the two gentlemen sitting here, who are independent groups who have indicated that perhaps they should be fully autonomous. Speak for a moment about the semi-autonomy and what it was to achieve and why it can't. And then, Mr. Aloise, if you would give us the contrast, because you don't believe that how semi-autonomous could be working when not one life extension program is on track. Ambassador Brooks, 2 minutes.

Mr. BROOKS. There are two sets of problems, structural and cultural. Structurally, example: the Clinger-Cohen Act and the relationship between having an integrated information system and a semi-autonomous NNSA worked out by good people working together, but you can't have one department directed from two people.

Example: environmental cleanup at NNSA sites. The responsibility of the Assistant Secretary for Environmental Management, who lacks the legal authority to direct NNSA sites. I tried to move that responsibility to NNSA and was not able to convince the Congress in the first term, and my own Secretary in the second term, to support that. So we had a workaround which was Byzantine, probably wouldn't have stood up to a legal—. Example: number of duplicating functions—

Mr. TURNER. Ambassador, I am going to ask you to finish your statement for the record.

[The information referred to can be found in the Appendix on page 59.]

Mr. TURNER. Doctor and Mr. Aloise, 30 seconds apiece.

Dr. KUCKUCK. Thirty seconds. I won't be as erudite as my learned colleague here, but I believe that it never was given a chance to happen. I believe that we never left DOE in the whole process. The oversight of rules were all the same, felt the same, and I don't think anybody believed we were going to see something different.

Mr. TURNER. Mr. Aloise, how can we call it a success when not one life extension program is on track?

Mr. ALOISE. Well, my point was that we have a safe, reliable stockpile, and that is a success. But you are absolutely right about the life extension programs; and there is more than that. There are the major projects that are problematic.

Mr. TURNER. Very good, thank you. Ranking Member.

Ms. SANCHEZ. Thank you, Chairman. Mr. Aloise, when the NNSA was formed, the defense nuclear facilities remained under independent health and safety oversight of the Defense Nuclear Facilities Safety Board. So based on your experience, was that a good decision at the time? Why or why not? And do you think that the NNSA defense nuclear facilities should still remain under independent oversight by the Defense Nuclear Facilities Safety Board,

or do you think it would be a better decision to place those facilities under the Nuclear Regulatory Commission regulation?

Mr. ALOISE. Well, GAO is on record promoting external regulation of DOE facilities. DOE self-regulates itself now. So we believe in a strong, independent regulatory function.

Ms. SANCHEZ. And I would ask—thank you, Mr. Aloise. And I would ask all the witnesses: Has the oversight of the nuclear complex improved as a result of the NNSA, the oversight of the overall? Ambassador?

Mr. BROOKS. In some areas yes, in some areas no.

Ms. SANCHEZ. Could you denote very quickly what some might be for “yes” and what some might be for “no”?

Mr. BROOKS. Security is clearly better, safety is no worse, but we haven’t removed the burden on the labs. Nuclear safety and the Defense Board, the relationship is not, was not when I was there, working well. That is separate from saying what a better relationship would be on which—but there was too much mission creep from the board.

Ms. SANCHEZ. Thank you. Doctor.

Dr. KUCKUCK. I would say that the board did both. I think in the early stages it certainly brought a stronger safety culture to the laboratories’ nuclear facilities. Operations are—conduct of operations are much more formal, employees are much safer, ISSM [Integrated Safeguards and Security Management] is embedded, but I think it is now past its day and it has become a point of when is enough enough. The balance is gone, and I think that the NRC [Nuclear Regulatory Commission] would look to me as a more balanced model to then put our nuclear weapons labs under.

Ms. SANCHEZ. Thank you, Doctor. And Mr. Aloise.

Mr. ALOISE. As I mentioned, we are in favor of external regulatory oversight. That would be a model that we have considered.

Ms. SANCHEZ. Thank you. Thank you, Mr. Chairman.

Mr. TURNER. Thank you, Ms. Sanchez. Again, too, because of the constraint of time, what we are going to do is we will get to everyone, you will get to ask your question, we will start the clock at 2 minutes, and then we can submit all the other questions for the record.

Mr. Thornberry, you are next.

Mr. THORNBERRY. Just to follow that for a second. Ambassador, and then Doctor, would you describe what you believe the proper relationship should be between Defense Nuclear Facilities Safety Board, if any, or if it should be replaced by the NRC as far as this independent outside oversight of these NNSA facilities? How should that be structured? Because that has been one of the biggest issues.

Mr. BROOKS. My goal when I was administrator was to make us completely indifferent to that. I told the Secretary I was working so that his successor—because I thought it would take me at least 4 more years—was able to say the board is no longer necessary, we are doing the job well. We didn’t succeed in that. Not clear whether we can succeed.

I think the safety board or some external agency needs to provide a check on the operation of the Department. I think it needs to do so considering, first, getting the mission done—I mean, you can be

perfectly safe if you stop working—and avoiding mission creep through asking for information.

Mr. THORNBERRY. And let me just interject. That's the issue. Defense, the board, doesn't have any responsibility to get anything done. And so part of the problem that people complain about is you have somebody who can put up a red card and stop everything, but they have no accountability for making anything happen.

Mr. BROOKS. I agree with that, sir, and that was frustrating to me. On the other hand, the board was created because the Department was all screwed up, and I am not sure I want to look you in the eye and say I had made everything all better.

Dr. KUCKUCK. I would think that relationship should be, should start from a clear and reasonable set of requirements that are designed in some collaborative form so that everybody understands where they are coming from, but the oversight organization should have the authority for the final design of those requirements. I think then that the oversight should be done by monitoring performance against those clear standards, and I think that areas of nonperformance should be a more collaborative approach to be resolved, but again the oversight has to be authoritative and in place.

Mr. TURNER. Mr. Aloise, if you have comments on this, you could submit them to the record.

[The information referred to can be found in the Appendix on page 59.]

Mr. TURNER. Turning to Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman. Gentlemen, I appreciate your testimony today.

Ambassador Brooks, the PFIAB report found that DOE and the—quoting—“the DOE and the weapons laboratories have a deeply rooted culture of low regard for and at times hostility to security issues, which has continually frustrated the efforts of its internal and external critics, notably the GAO and the House Energy and Commerce Committee. Therefore, a reshuffling of the offices and lines of accountability may be a necessary step toward meaningful reform, but it most almost certainly will not be sufficient. Even if every aspect of the ongoing cultural structural reforms is fully implemented, the most powerful guarantor of security at the Nation's weapons laboratories won't be laws and regulations or management charts; it is going to be the attitudes and the behavior of the men and women who are responsible for the operation of the labs each day. So these will not change overnight, and they are likely to change only in a different cultural environment, one that values security, adds a vital and integral part of the day-to-day activities and believes it can coexist with science.”

So with that, can you talk about the, you know, whether or not there is sufficient progress on increasing accountability, at least, and what challenges remain to improve accountability and cost-effectiveness?

Mr. BROOKS. At least on the Federal side, I think we have made lines of responsibility, and therefore accountability, clear.

I guess I would push back, sir, on the idea that the laboratories, as I knew them, didn't care about security. The problem—there is a cultural problem, but the cultural problem is not about security but about security through detailed procedures. The same type of

problem exists in the safety area. And that would be fine, except we know that if you don't have detailed procedures, things screw up.

So the culture that we are building in slowly, I think there is actually a demonstrable improvement in that, as Dr. Kuckuck mentioned, but I think that I erred in believing that we could change that culture more rapidly than we have been able to.

Dr. KUCKUCK. I would agree with the Ambassador. I think the attitudes of the laboratory scientists are very much in line with improved safety and procedures to the degree the procedures are appropriate. I think, unfortunately, the attitude now, we are at risk of straining this success that we have already achieved because the oversight is now so oppressive and past the limit of a good balance that I think the attitudes are now turning toward the overseers rather than against safety itself.

Mr. LANGEVIN. So let me ask the panel this question: Was NNSA a good idea?

Mr. BROOKS. Somebody has got to answer. Yes. It was worth trying. It may still be worth trying. It hasn't worked as well as we hoped.

Dr. KUCKUCK. Quite agree.

Mr. ALOISE. Absolutely, yes.

Mr. TURNER. Your time has expired. Turning to Mr. Rogers.

Mr. ROGERS. Thank you, Mr. Chairman.

Doctor, in your opening statement you made reference to deterioration of the lab under DOE, and you thought that it may be beyond the point of redemption. Can you expand on what you meant by that?

Dr. KUCKUCK. Yes, sir. I didn't mean to make the point that you heard in that. What I was referring to was the management relationship between the DOE and the laboratory was deteriorating. The laboratories were not deteriorating at all.

Mr. ROGERS. Okay. Thank you. That is all I have, Mr. Chairman.

Mr. TURNER. Dr. Fleming.

Dr. FLEMING. Yes, thank you, Mr. Chairman.

Dr. Kuckuck, your prepared statement references problems caused by, quote, implicit tasking resulting from such behaviors as withholding the necessary approval documents and frustrating, bring-me-another-rock exercises. It kind of sounds to me like there are a lot of authorities but none with enough authority to control the process. Can you elaborate on your metaphor, give me a better idea of what you are trying to explain?

Dr. KUCKUCK. I would almost react to your statement by saying I think there is too much authority implicit at all turns of the laboratories' surrounding oversight space. An extreme example of that that I saw while I was at the laboratory, that I will make very short, given the time, is the laboratory had a significant amount of nuclear material located at a certain place that we were using to conduct a program. And as we continued every year to raise the bar on security demands, the Department decided—the NNSA decided that they wanted those put in a more secure place. There was an amount of material that would take a couple of years to package and process and remove, and the new site was going to be the Nevada Test Site. We felt that the 2 years of sitting where it was

wasn't appropriate, so we came up with an idea of putting a small parking lot inside the PIDAS [Perimeter Intrusion Detection and Assessment System] in the nuclear plutonium facility, TA-55, move these four SST [Safe Secure Trailers]—certified vehicles for carrying the stuff around the Nation every day—move four of those in place, put the material in there, and work from them safely stored in there for this 18 months or so. That is what we started out with for a million dollars.

The safety board didn't like that, continued to push back, and a year later we ended up with a category 2 nuclear facility, which was a pad of cement three foot deep, seismically qualified, with a roof over it in case lightning didn't hit these trucks that had been moving around the country, on and on and on, at a result of a \$7 million cost instead of a \$1 million cost. And ironically, the entire year we sat there doing that, the material sat in the area that was considered inappropriate in the first place.

Dr. FLEMING. So, really, trying to satisfy too many bosses, too many authorities.

Dr. KUCKUCK. Exactly.

Dr. FLEMING. Requiring overlapping authorities that are contradictory in some cases.

Dr. KUCKUCK. The final decision has to be an approval from the site office, but it is clear that direction is coming from all sectors and interfering with that process.

Dr. FLEMING. Thank you.

Mr. TURNER. Mr. Brooks.

Mr. BROOKS OF ALABAMA. Thank you, Mr. Chairman. Recurring security problems within the Department of Energy were a major factor in the creation of the NNSA.

This is a question for any or all of you to answer. Why was the Department of Energy unable to get a handle on these security problems without congressional intervention, part one; part two, how effective and what has NNSA done to correct these security issues?

Mr. BROOKS. Why the Department couldn't get a handle on it before I think is demonstrated in the President's Foreign Intelligence Advisory Board report, and there is an organization chart in there which will convince you that nobody using that organization chart could get a handle on anything.

We, after some false starts for a variety of reasons, came up with the appropriate organizational level and the right people, so that at least we had coherent security oversight.

On physical security I think—of course, the bar got raised considerably after 9/11—that we have made substantial progress. Information security has been harder. We've made some progress. We have simplified some requirements. I think this security, sir, is frankly something you just keep working on. If you believe there is a time when you have fixed it, you will find you are wrong. You have to just keep working on it.

I think we have substantially improved security. That is not saying that there are not still problems.

Mr. BROOKS OF ALABAMA. Do either of the other two witnesses have any insight they are able to share?

Dr. KUCKUCK. I could add nothing to that.

Mr. ALOISE. I would say ineffective Federal oversight and a culture that initially didn't value security, those two combinations led to a lot of the security breaches. Many of them severely impacted our national security. We seem to be at a level now where security is at a right place as far as we can tell. But Linton is correct, we need to be vigilant to make sure those safeguards stay in place.

Mr. BROOKS OF ALABAMA. Thank you, Mr. Chairman.

Mr. TURNER. Thank you. We appreciate that throughout all the testimony, and even in your discussion, Mr. Aloise, there is a recognition that the status quo is unacceptable, that there are failures in the performance of NNSA. We are grappling with the issue of what then is the answer. As we look to questions that we are going to be submitting to the record, we look forward to your additional information that you might provide us as we try to, you know, offer some solutions as to how that may be addressed.

[The information referred to can be found in the Appendix on page 59.]

Mr. TURNER. Thank you. We will be adjourned.

[Whereupon, at 4:09 p.m. the subcommittee was adjourned.]

A P P E N D I X

JUNE 27, 2012

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

JUNE 27, 2012

Statement of Hon. Michael Turner
Chairman, House Subcommittee on Strategic Forces
Hearing on
Creation and Implementation of the National Nuclear
Security Administration

June 27, 2012

Good afternoon and welcome to today's hearing on the "Creation and Implementation of the National Nuclear Security Administration (NNSA)."

This hearing is part of the subcommittee's continuing oversight of governance and management issues related to NNSA and our nuclear security enterprise. As many of you here today undoubtedly know, this subcommittee has spent considerable effort over the past year to better understand these problems and determine appropriate remedies. We are gravely concerned about the overwhelming number of studies and reports that have identified the same serious problems at NNSA and the Department of Energy—including reports that NNSA is "broken," that "science and engineering quality is at risk" at the nuclear weapons labs, and that "it is time to consider fundamental changes" to the entire organization and construct.

As part of the subcommittee's broader efforts, this hearing will take a detailed look at the past. With the help of our witnesses, we will explore the history that led up to the creation of the NNSA in 1999 and 2000, the congressional intent behind creating NNSA, and the early years of implementation of the NNSA. Ultimately, we hope that the witnesses can help us answer several questions that are important for the future:

- Did implementation of NNSA achieve the vision of a "separately organized" and "semi-autonomous" organization with significant freedom of action from the Department of Energy (DOE)?
- Can a "semi-autonomous" structure work?
- What lessons should we learn from the implementation of NNSA, and how should we apply those lessons as we look to address the continuing problems that sound eerily similar to those that NNSA was intended to fix?

Given their deep experience from many different angles of this issue, our witnesses are well-equipped to help us with all of this. They are:

- Ambassador Linton F. Brooks, Senior Advisor, Center for Strategic and International Studies, Former Administrator, National Nuclear Security Administration;

- Dr. Robert W. Kuckuck, Former Principal Deputy Administrator, National Nuclear Security Administration, Former Director, Los Alamos National Laboratory; and
- Mr. Eugene Aloise, Director, Natural Resources and Environment, Government Accountability Office.

Gentlemen, thank you for joining us today.

Reviewing your prepared statements, as well as some information provided by the staff, I was struck by how, at one point in its early years, NNSA seemed to be headed in the right direction. At the senior levels within NNSA, the intentions and the actions seemed to be to implement the intent of the NNSA Act and create agile, efficient, and effective operation.

A case in point is the February 2002 *Report to Congress on the Organization and Operations of the NNSA*. This report contains action plans to streamline and clarify roles and reporting relationships; right-size Federal staff; clarify the nature and operations of NNSA's semi-autonomous nature; and lift administrative burdens through streamlining policies, procedures, and staffing. In short, this appears to have been a real plan for creating the NNSA that was actually intended by the NNSA Act.

So the question is: Where did it get off track and why? Because we have many, many reports by independent groups that it has gotten very off track. For instance, the bipartisan 2009 Strategic Posture Commission said:

“Despite some success, the NNSA has failed to meet the hopes of its founders. Indeed, it may have become part of the problem, adopting the same micromanagement and unnecessary and obtrusive oversight that it was created to eliminate.”

That same year, a bipartisan report by the Stimson Center said:

“The implementation of the NNSA Act failed to achieve the intended autonomy for NNSA within the Department of Energy. The Labs now must operate within a complicated set of bureaucratic relationships with both DOE and NNSA.”

Looking at the history, it is apparent that the non-NNSA portions of DOE (in his statement, Ambassador Brooks calls it “Big DOE”) have fought to restrict NNSA's autonomy from the very beginning. First we saw President Clinton's signing statement and the “dual-hatting” of DOE officers into senior NNSA positions. But that particular problem was eventually overcome, thanks to vigorous oversight by the HASC Special Oversight Panel led by Rep. Thornberry and Rep. Tauscher. But DOE meddling remained, and appears to remain to this day.

Ambassador Brook's prepared statement indicates that even if senior DOE leaders were on board with the concept of NNSA, many DOE staff were decidedly not. The ambassador's statement gives one example:

“... the then-[DOE] General Counsel objected strongly to my approach. As I understood her objections, she believed that the NNSA Act provision was inappropriate and that NNSA should have no flexibility that was not available to any other element of the Department.”

A General Counsel has no authority to decide what law is inappropriate—this is merely defending bureaucratic turf. This is indicative of the larger problem: The DOE bureaucracy fought against even limited autonomy for NNSA, despite clear congressional intent with the NNSA Act. More recent evidence indicates this trend continues.

Dr. Kuckuck's prepared statement highlights what I think is the key issue for any solution we pursue: How do we change an entrenched and deeply bureaucratic culture? Dr. Kuckuck says:

“... change of the magnitude envisioned with the creation of the NNSA was obviously a daunting challenge that would involve more than just principled redesign of organizational structure and procedures. It would require a fundamental change in the underlying culture of the entire enterprise.”

I agree. Changing the culture will require bold action, followed by strong and committed leadership for years afterward. Both Dr. Kuckuck and Ambassador Brooks suggest that full autonomy is needed for NNSA. They seem to suggest—based on their experience as senior leaders at NNSA and in the nuclear security enterprise—that the semi-autonomy construct will not work. I hope both witnesses will comment on what particular experiences and evidence from the early years of NNSA and more recent years makes them recommend this course of action.

Mr. Aloise and GAO have conducted oversight on NNSA since its beginning, and noted in a 2007 report that DOE and NNSA have struggled to determine how NNSA should operate as a separately organized agency. Mr. Aloise's prepared statement notes that NNSA has made considerable progress in some areas, but remains sorely deficient in others. But Mr. Aloise also disagrees with the testimony of our other two witnesses—as well as the reams of reports from independent groups—on whether NNSA should be made fully autonomous from DOE. I hope to explore that judgment during the discussion period.

We must find a way out of this mess. Our nuclear deterrent requires an effective and efficient steward. In the FY13 National Defense Authorization Act, the House has put forward reasonable and prudent solutions that are well founded in the findings of myriad experts and commissions. Now we look to others, including the Administration, for their own proposals. A letter that Chairman McKeon and I sent to President Obama 6 weeks ago seeking his solutions remains unanswered. While we wait, my hope for this hearing is that by looking to the past, we can help find a clear way forward to the future.

Thank you again to our witnesses for joining us today—we look forward to the discussion.

Statement of Hon. Loretta Sanchez
Ranking Member, House Subcommittee on Strategic Forces
Hearing on
Creation and Implementation of the National Nuclear
Security Administration
June 27, 2012

Before we turn to the topic of today's hearing, I would like to extend a warm welcome to Congressman Ron Barber of the eighth district of Arizona who has joined the House Armed Services Committee and the Strategic Forces Subcommittee.

I would like to join Chairman Turner in thanking our witnesses, Ambassador Linton Brooks, Dr. Robert Kuckuck, and Mr. Aloise, for being here today.

Chairman Turner, our Committee members, and I are committed to the success of NNSA, the nuclear complex, and its National Security mission.

As we discuss the reasons for creating the National Nuclear Security Administration, its implementation and the way ahead, I would like to emphasize three key points.

- First, this remains a critical time for NNSA and the nuclear weapon laboratories and the production complex. As we examine oversight and management, our priority and focus must remain a safe, secure, and reliable nuclear arsenal and urgent nonproliferation efforts. Having in place a cost-effective and robust structure to support the cutting-edge science and engineering that underpin these efforts, is paramount. Improvements for more effective oversight, stronger accountability measures, clearer lines of authority, and setting clear requirements and guidance, remain necessary. These changes require strong leadership and an improved culture of excellence at NNSA. However, I am concerned that efforts to push for a fully independent NNSA at this time may pose an unacceptable risk of detracting from the focus and important missions at hand. We cannot risk NNSA losing focus from life extension programs, and the construction of billion-dollar facilities. We must proceed carefully and deliberately in adding value to the process of improving NNSA.
- Second, I would also like to raise the issue of cost. The Administration is investing—and the Congress has supported—unprecedented levels of funding for the nuclear weapons complex. The FY 2013 budget request of \$7.6 billion represents about a 20% increase over 2010 levels, when many other programs are being cut. At a time of fiscal crisis and scarce resources, we must put in place robust governance and management structures to avoid budget and schedule overruns. This is all the more important for billion-dollar projects. And we must seek opportunities for improving efficiency within NNSA, DOE, and across the nuclear complex to drive down costs. A November 2011 Department of Energy Inspector General report on *Management Challenges at the*

Department of Energy made some initial recommendations on this issue.

- Third, strong independent oversight, for example by the Defense Nuclear Facilities Safety Board (DNFSB) and the Department of Energy's Office of Health Safety and Security, to preserve a safe environment for our scientists and workers at the facilities, remains crucial. We must have appropriate independent oversight in place to avoid the kind of accidents that plagued the nuclear complex in the past and for correcting current safety deficiencies. I am concerned about the growing tendency to cast unwarranted blame on the DNFSB and other independent reviews (including those mandated by Congress) that maintain high standards for safety. Accidents can and do happen, as illustrated by the tragic events at Fukushima and Deepwater Horizon. A nuclear accident, even a minor one, would have significant repercussions on the future of the nuclear weapons complex. That is a consequence that we would all like to avoid. Creating and maintaining a strong safety culture is key to ensuring a safe, secure, and reliable arsenal.

Thank you for sharing your insights on the creation of the NNSA to inform our oversight. In conclusion, as we look ahead I look forward to hearing your thoughts on:

- 1) effective oversight, contract structure, governance and management—including transparency, accountability, and clear lines of authority;
- 2) the need for a process that ensures safety for workers and the public; and
- 3) whether the structure is set up to incentivize savings, maximize investment in programmatic work, avoid uncontrolled cost escalation and schedule delays, set priorities, and enable competition.

**Prepared Statement of Ambassador Linton F. Brooks
Former Administrator, National Nuclear Security Administration
before the
House Armed Services Committee, Subcommittee on Strategic Forces
June 27, 2012**

**Creation and Implementation of the
National Nuclear Security Administration**

Chairman Turner, Ranking Member Sanchez, members of the subcommittee, thank you for giving me the opportunity to testify today on the creation and initial stand up of the National Nuclear Security Administration. Before turning to the actions I took in attempting to implement the NNSA Act, I would like to make three preliminary points:

- First, I want to express my thanks to this subcommittee for undertaking an investigation of how well the act has worked. I was deeply disappointed at the lack of response by the Administration and the Congress to the recommendations of the Strategic Posture Commission in this area, and I welcome your examination of this important topic.
- Second, it is important to recognize the limits of what can be accomplished by changing the NNSA Act, although as my earlier testimony submitted to the subcommittee indicates, I favor significant changes. Legislation can empower and enable strong leadership, but it cannot substitute for it. No reforms will succeed without a commitment on the part of the NNSA Administrator – a commitment that I believe exists – to strengthening the organization. In particular, I am deeply concerned by the recent report of the National Academies of Science documenting a serious lack of trust between the leadership of the national security laboratories and of the National Nuclear Security Administration. The Congress cannot fix this problem, but it should insist that the responsible individuals do so. I understand that substantial progress is being made in this area, but it is vital that this committee continue to monitor the situation.
- Third, my remarks will describe the situation through January 2007, when I ended my tenure. Nothing I say should be taken as a description of how NNSA is operating today. Because I have no responsibility for the organization I am not able to discuss in detail its current status and health, although I am generally familiar with many of the issues facing my successor.

While the direct impetus for the establishment of NNSA was a series of security problems in the 1990s, the underlying issue was the belief that clarity in roles and responsibilities, improvements in security, and the institution of such reforms as

multiyear budgeting would be impossible within the Department of Energy bureaucracy as it existed at the time. Outside observers described that bureaucracy – correctly – as “big, Byzantine, and bewildering.”¹ I joined NNSA in October 2001 and assumed responsibility as Acting Administrator in July 2002. During that time, building on the work begun by the first NNSA Administrator, General John Gordon, we had three broad objectives:

- First, to streamline the organization, avoid duplication, and clarify roles and responsibilities of all federal officials within NNSA.
- Second, to restore the appropriate division of labor between the national laboratories and their Federal overseers. We believed – and I still believe – that the appropriate relationship was for the government to decide what to do while the laboratory leadership to determine how to do it.
- Third (and un-stated in any formal documents), to establish the appropriate degree of autonomy within the Department of Energy. Although the act referred to NNSA as “separately organized,” we adopted the term “semi-autonomous” as a description of the end-state we were seeking.

Our initial efforts were to correct organizational inefficiencies. In particular both headquarters and the then-existing three area operations offices, especially the Albuquerque Operations Office, provided direction to the laboratories and plants. To eliminate the so-called “two headquarters” problem, I made the decision to abolish operations offices, thereby eliminating an entire layer of management. We established what I called the “strong Site Manager” model in which all non-programmatic direction—that is direction involving contract administration, operations safety and security—go through the federal managers of the site offices at each of the NNSA laboratories and plants and thence to the contractors operating those laboratories and plants. Our intention was that there be a single path for providing direction so that the plants and, especially, the laboratories would not have to deal with conflicting guidance.

To avoid having competing headquarters staffs provide conflicting guidance, I established a structure in which Site Managers reported directly to me through my principal deputy. The intent was to place the Site Managers on the same organizational level as the NNSA headquarters officials in charge of security, management and budget, etc. We established a leadership coalition that included the Site Managers and my principal subordinates in headquarters. This group met periodically in order to improve working relations and insure we were all implementing a common vision.

¹ President’s Foreign Intelligence Advisory Board, *Science at its Best, Security at its Worst: A Report on the Security Problems at the U.S. Department of Energy*, June 1999, page 8.

In parallel with this effort, and largely under the leadership of Dr. Ev Beckner, then Deputy Administrator for Defense Programs, we streamlined the internal organization of the NNSA staff responsible for weapons program work. We also implemented a five year Planning, Programming, Budgeting, and Evaluation system modeled after that used by the Department of Defense. This system, essentially established by my predecessor, General Gordon, became an internal tool for trying to look at the long-term consequences of budgets. I believe it was successful in doing so, although we had less success with the Office of Management and Budget, which, except for the Department of Defense, has traditionally been skeptical of out-year budgeting systems as limiting the president's flexibility.

For our second objective, we had clarity of vision but a great deal more difficulty in implementation. We knew that what was required was to shift the basis of Federal oversight from a transaction by transaction basis to verifying that the laboratories had effective internal assurance systems. We knew that ultimately we wanted to depend on third-party certification using industry standards wherever possible. We knew that we needed to use the Administrator's authority in the NNSA act to streamline (and even eliminate) duplicative DOE regulations. We knew that we wanted to drastically reduce the number of external audits. Unfortunately, each of these steps proved more difficult than we expected.

One complicating factor was a series of security and management problems, primarily at the Los Alamos National Laboratory. These problems ultimately led me to recommend and Secretary Abraham to approve opening the management of Los Alamos to competition for the first time in history. The reaction of many on the Hill – although not of this committee – to these problems was to ask why there was not more detailed and intrusive Federal oversight to avoid them. We also discovered that, although the laboratories blamed NNSA for excessive formal audits, many such audits were not under my control. At one point the Livermore Site Office documented that of well over a hundred external audits, only four were from within NNSA. Many of the others were part of a routine audit program of the DOE Inspector General or originated from the Government Accountability Office. Neither the Secretary nor I had the power to reduce the number of these audits.

I also found it more difficult to eliminate excessive regulations than I anticipated. This was part of a difficulty in establishing autonomy within DOE that I will discuss in a moment. In an effort to move toward fewer regulations we conducted a pilot program at the Kansas City plant in 2006 and 2007. Under this program, the plant was exempted from essentially all DOE regulations on safety and health and additional oversight management changes were made. An external audit documented significant cost savings with no adverse consequences on either safety or mission. Unfortunately,

resistance from within DOE (and by the Defense Nuclear Facilities Safety Board) has precluded broader application of the program, although I understand that the approach is still supported by the current NNSA leadership.

Of our three major objectives, establishing the appropriate degree of autonomy was, in many ways, the most difficult. In part, this was because – as a GAO report noted – there was no government experience with “separately organized” or “semi-autonomous” entities.² Components of Cabinet departments that are often cited as autonomous are generally not and thus did not provide a useful model. The result, in GAO’s assessment at the time I left NNSA, was that “almost 7 years after its creation, NNSA and DOE have not developed procedures that govern how NNSA should function as a separately organized agency within the department.”³

The law establishing NNSA did not make it completely separate from the larger department. For example, while NNSA does its own budget formulation and execution, it did not have its own Chief Financial Officer (CFO) and depended on the Departments’ CFO for many accounting functions. Similarly, NNSA does not have its own Inspector General but falls under the jurisdiction of the DOE IG. Finally, the Office of Intelligence reports directly to the Secretary, although most of its work is in support of NNSA. Most significantly, what was then called the Office of Safety and Security Performance Assurance (reporting to the Secretary) conducted both scheduled and for-cause audits and inspections of DOE facilities including those within NNSA.

In a number of cases, in the interests of efficiency and reducing the requirement for staff, I elected to depend on support from the larger Department of Energy organization in other areas. Thus, for example, I used DOE’s Office of Hearing Appeals and Equal Employment Opportunity office, rather than establish such organizations within NNSA. The department had an effective organization for implementing the Price Anderson legislation and I took advantage of it, although I signed – and thus formally approved – any penalties. I also drew on the DOE General Counsel’s office for some specialized legal advice. At the time, I believed that these decisions increased efficiency and I was rather proud of them. In hindsight, however, I believe them to have been errors in judgment. By having some DOE offices outside of NNSA involved in the internal functioning of NNSA, I believe I weakened my ability to establish the degree of autonomy from the larger department envisioned by the authors of the NNSA act. In any event, establishing such autonomy became a major problem and – in my view – a major failing on my part. There were a variety of reasons for this, some structural, and some

² General Accountability Office Report (GAO 07-36), *NATIONAL NUCLEAR SECURITY ADMINISTRATION: Additional Actions Needed to Improve Management of the Nation’s Nuclear Programs*, January 2007. See especially pp 34-35

³ GAO 07-36, p. 7.

based on strong differences between me and other DOE officials on just how autonomous NNSA should be.

An example of a structural problem was the relationship between NNSA and the Office of Environmental Management. Environmental Management was responsible for environmental cleanup including at NNSA sites. To do this, it had individual representatives co-located with the various NNSA site offices. Yet the NNSA act precluded the Assistant Secretary involved from giving direction to any part of the NNSA organization. We partially solved this through a complex parallel structure that worked but was not fully satisfactory to either side. In 2004, I concluded that NNSA should assume responsibility for all environmental management, including legacy cleanup, at NNSA sites. I persuaded Secretary Abraham and the Office of Management and Budget to agree to a change in the legislation to allow me to assume all such responsibility (NNSA already had responsibility for newly generated waste), but was unable to convince the Congress. Secretary Bodman, who assumed office in 2005, elected not to resubmit the legislation and the work-around remained in effect throughout my tenure.

The most difficult area in which the need for a department-wide, integrated approach conflicted with the NNSA act was information technology. There is tension between the Clinger-Cohen Act (the Chief Information Officer Act) and the NNSA Act. This was exacerbated by the fact that NNSA's information technology systems need to be seamlessly integrated with those of the rest of the department. This in turn required a common approach, not just to policy but to implementation. Such an approach was made more difficult by provisions precluding the chief information officer for the department from giving direction to NNSA employees. During my tenure, this problem was manageable through leadership both within the department and within NNSA. It remains, however, an indication that there are inherent structural problems with a "semi-autonomous" organization.

A final structural problem arose from the significant disparity in size between NNSA and the rest of the Department, which we often referred to as "big DOE." NNSA comprised about 40 percent of the DOE budget but only about five percent of the Federal workforce. An example of the disparity in specific areas as of early 2005 follows:⁴

⁴ Drawn from a report I submitted to the Secretary of Energy in May 2005 on implementation of the NNSA Act. The sub-committee staff has a copy of the report.

FUNCTION	NNSA STAFF	DOE STAFF
Public Affairs	3	23
Congressional Relations	4	23
General Counsel	6	148
Security	80	162
Chief Information Officer	14	107
Planning, Programming and Budgeting	48	488

While the far larger DOE staffs could not legally direct NNSA personnel, they could legitimately ask for information. The size disparity meant that there were often more people asking for data than the entire NNSA staff in a particular area. The temptation to slip from data requests to attempts at direction was difficult for some of the DOE staff to resist.

In addition to these structural problems, there were issues with some of my non-NNSA colleagues not sharing my view of the appropriate degree of autonomy for NNSA. Secretary Abraham and Deputy Secretary McSarrow were always supportive of me and protective of my autonomy. Other parts of the staff were not. Establishing and maintaining our autonomy required a constant low-level effort. I elected not to raise many of these issues higher levels because they each got more or less solved, although often with significant effort by NNSA leadership.

The most significant issue – and one that was not solved during the first term – involved my authority under Section 3212 of the NNSA Act to “establish Administration specific policies, unless disapproved by the Secretary of Energy.” This was intended, among other things, to allow NNSA to substitute streamlined policies for more cumbersome DOE regulations. Because it was obviously undesirable for the NNSA Administrator to issue policies which were subsequently disapproved by the Secretary, I sought to establish a procedure to inform the Secretary in advance of my intent to exempt NNSA from departmental requirements and to provide a mechanism for his senior advisers to recommend disapproval if appropriate. In August 2003, then Deputy Secretary Kyle McSarrow and I agreed on the following approach:

- If I saw the need to exempt NNSA from a departmental requirement, I would inform the Deputy Secretary with a copy to the DOE General Counsel and the appropriate Assistant Secretary of my intention to issue an NNSA policy that had the effect of exempting us from departmental requirements.

- In this notification, I would indicate that if the cognizant Assistant Secretary believed that there was an overriding imperative for the Secretary to disapprove of my actions, he or she should contact the Deputy Secretary.
- I would then wait two weeks and, absent any objection, would proceed with my planned action.
- If objections were raised to the Deputy Secretary, he and I would meet with the Secretary to seek guidance.

I believed then – and believe now – that this procedure balanced the need to preserve the Secretary's prerogatives in managing the department with the benefits of NNSA being able to streamline requirements. It proved, however, impossible to gain consensus on issuing a DOE directive formalizing this procedure. This was, in large part because the then-General Counsel objected strongly to my approach. As I understood her objections, she believed that the NNSA act provision was inappropriate and that NNSA should have no flexibility that was not available to any other element in the department.

What lessons should the Committee draw from our early experience in establishing NNSA? First, I believe our broad approach was right then and is right now. I am proud of what we were able to accomplish during my tenure. Despite this, the effectiveness of a semi-autonomous NNSA is too dependent on the personalities and preferences of officials outside NNSA, including the Secretary.⁵ Competent, dedicated people can make any organization work and virtually all NNSA and DOE senior officials are both dedicated and competent. But the present arrangement requires constant effort from NNSA leadership and thus diverts those officials from focusing on the mission. The present system can work, indeed is working. But it cannot fully deliver on the expectations the Congress had in establishing NNSA. Ultimately, I believe NNSA must become a stand-alone organization.

Second, clear lines of authority and accountability are made more difficult by the number of external bodies to whom the Administrator is in some sense accountable. Separating NNSA from the rest of the Department of Energy will reduce but not eliminate the problem. The Congress needs to consider carefully the right balance between constant routine (as opposed to “for cause”) reviews by entities such as the Defense Nuclear Facilities Safety Board, GAO and Inspector General and allowing the NNSA Administrator the ability to manage his or her organization.

⁵ Secretary Bodman, for example, who assumed his duties in 2005, was bothered by the existence of separate NNSA Congressional and Public Affairs offices. As a result, relations between those offices and their DOE counterparts, which had required no effort on my part during the first Bush Administration term, required substantial effort during the second.

Finally, if the Congress wants – as I believe it should – the type of relationship between NNSA and the laboratories that I described as part of our vision, it must be constantly on guard against the tendency, when problems arise, to ask why federal overseers did not prevent the problem through more detailed audits and inspections. While I recognize that it may not always appear to be the case to you, in my experience, Executive Branch officials are usually extraordinarily responsive to the desires of the Congress. Both branches need to avoid the temptation to demonstrate that they are taking action by establishing new controls and new procedures that make it more difficult to preserve the important distinction between the government responsibility to say what is to be done and the responsibility of laboratory leadership to determine how to do it.

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

Linton Brooks



Linton F. Brooks is an independent consultant on national security issues, a senior adviser at CSIS, a distinguished research fellow at the National Defense University, and an adviser to four of the U.S. Department of Energy (DOE) national laboratories. He served from July 2002 to January 2007 as administrator of DOE's National Nuclear Security Administration, where he was responsible for the U.S. nuclear weapons program and for DOE's international nuclear nonproliferation programs. Ambassador Brooks has five decades of experience in national security, much of it associated with nuclear weapons. His government career has included service as deputy administrator for nuclear nonproliferation at the National Nuclear Security Administration, assistant director of the U.S. Arms Control and Disarmament Agency, chief U.S. negotiator for the Strategic Arms Reduction Treaty, director of defense programs and arms control on the National Security Council staff, and a number of U.S. Navy and Defense Department assignments as a 30-year career naval officer. Ambassador Brooks holds degrees in physics from Duke University and in government and politics from the University of Maryland and is a distinguished graduate of the U.S. Naval War College. He has been associated with the CSIS Project of Nuclear Issues (PONI) since its inception.

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FISCAL YEAR 2009

Federal grant(s)/ contracts	federal agency	dollar value	subject(s) of contract or grant

Federal Contract Information: If you or the entity you represent before the Committee on Armed Services has contracts (including subcontracts) with the federal government, please provide the following information:

Number of contracts (including subcontracts) with the federal government:

Current fiscal year (2011): NONE _____;
 Fiscal year 2010: NONE _____;
 Fiscal year 2009: NONE _____.

Federal agencies with which federal contracts are held:

Current fiscal year (2011): _____;
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List of subjects of federal contract(s) (for example, ship construction, aircraft parts manufacturing, software design, force structure consultant, architecture & engineering services, etc.):

Current fiscal year (2011): _____;
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Aggregate dollar value of federal contracts held:

Current fiscal year (2011): _____;
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Number of grants (including subgrants) with the federal government:

Current fiscal year (2011): NONE _____;
Fiscal year 2010: NONE _____;
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Federal agencies with which federal grants are held:

Current fiscal year (2011): _____;
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Fiscal year 2009: _____.

List of subjects of federal grants(s) (for example, materials research, sociological study, software design, etc.):

Current fiscal year (2011): _____;
Fiscal year 2010: _____;
Fiscal year 2009: _____.

Aggregate dollar value of federal grants held:

Current fiscal year (2011): _____;
Fiscal year 2010: _____;
Fiscal year 2009: _____.

Testimony of Robert W. Kuckuck

**House Armed Services Committee
Subcommittee on Strategic Forces
June 27, 2012**

**Creation and Implementation of the
National Nuclear Security Administration**

Chairman Turner, Ranking Member Sanchez and members of the Subcommittee. Thank you for inviting me to speak with you this afternoon on the creation and formative first years of implementing the National Nuclear Security Administration. It is a pleasure to have this opportunity. I will base my remarks on perspectives I have gained as a scientist for almost forty years at the Lawrence Livermore National Laboratory under the pre-NNSA DOE management, as a member of the team of federal officials setting up the NNSA during most of 2001 and 2002, and subsequently as the director of the Los Alamos National Laboratory in 2005 and 2006 under this new NNSA management.

My comments here will be focused in three specific areas:

- Our initial NNSA design principles for achieving organizational efficiency and effectiveness as well as for reducing burdensome requirements on the laboratories and plants.
- My subsequent observations of the working environment at Los Alamos five years after NNSA's creation.
- Perceptions that I have concerning the opportunities and limitations of legislation in improving NNSA management of the laboratories.

In setting up the NNSA upon its creation by Congress through the NNSA Act, our organizational efficiency and effectiveness objectives were derived primarily from the numerous negative findings reported in many previous studies critical of the DOE.

The fundamental principles we used to clarify roles and responsibilities in the NNSA included the following:

- Federal officials determine requirements - WHAT is needed. Laboratories, plants and other contractors deliver the WHAT, and manage HOW it is achieved.

- NNSA Headquarters' role is to establish high-level requirements and guidance. The Federal Field Element's role is contract administration and oversight. The laboratories' and plants' roles are to manage and execute.
- In order to avoid conflicting guidance, the Federal lead role will be at one place only, determined by expertise.
- Line reporting and accountabilities will be defined as a single line from the Administrator, through the Deputy or Associate Administrators, through the site offices to the laboratories and plants.
- Direct tasking of the laboratories and plants will be done only through the Contract Officer or designated Contract Officer Representatives.

A new organization was designed around these principles. A layer of management (Operations Offices) was eliminated; Site Office Managers were to be the "risk acceptance official" charged with balancing mission and oversight at each facility; federal site services were consolidated into a single Service Center. Federal leadership for research, development, nuclear nonproliferation and program planning and management was to remain at headquarters. Leadership for weapons production, site management and day-to-day federal program management would be close to the contractor. Contract Officers and Contract Officer Representatives were identified and trained.

An enterprise-wide reengineering effort was begun in 2002 to address policies and practices across the entire weapons complex with the goal of realigning them against the newly clarified responsibilities and authorities in order to achieve clarification, simplification or elimination. The results of this reengineering effort would be used to provide the framework for simplifying and reducing burdensome requirements, streamlining both tasking and oversight of mission and support work, and providing a template for significantly reducing staff. We set a goal of reducing federal staff by 20 percent in two years.

The implementation of change of the magnitude envisioned with the creation of the NNSA was obviously a daunting challenge that would involve more than just principled redesign of organizational structure and procedures. It would require a fundamental change in the underlying culture of the entire enterprise. Many accomplishments were made early on, but much remained that would require committed follow-through, as well as subsequent adjustments and further enhancement efforts in future years.

As Director of the Los Alamos National Laboratory in 2005-2006, I was disappointed to find the laboratory working environment at least as burdensome as I had experienced at Livermore prior to the creation of NNSA, and unfortunately, somewhat more adversarial. Tasking was still coming from numerous sources at various levels of the federal bureaucracy. Some of this was explicit tasking, but much was implicit tasking resulting from such behaviors as withholding the

necessary approval documents in frustrating "bring me another rock" exercises. This was an exhausting and expensive way to do business. Additional implicit tasking often came from negative reactions expressed personally to individual staff members by oversight personnel and even outside advisory staff members of the Defense Nuclear Facilities Safety Board who permanently resided on site. Explicit tasking dictated unnecessary work and expense; implicit tasking embedded inefficiencies and lost opportunities as laboratory staff invented "work-arounds" to avoid confrontation with the overseers. Both NNSA and laboratory staff took unnecessarily conservative positions in order to avoid criticism from above. The result was a site-wide (NNSA, on-site advisors and LANL) culture of extreme risk aversion, with its consequent monetary and intellectual restraint costs evident throughout the laboratory.

The financial, morale, and intellectual capital costs of this situation are significant and growing. Time and again I would hear the words, "let's just go ahead and do it their way, its less trouble than trying to do it the right way." "Their" could refer to NNSA, DNFSB, or even other laboratory oversight functions. As this reaction to the bureaucracy permeates more and more into the science and direct mission work of the laboratories, I am concerned of the price the nation is paying.

I believe legislation can improve this situation and H.R.4310 is clearly designed and intended toward this end. I believe many of its provisions could help in mitigating current issues. However, I believe more will be necessary. In the language of science and mathematics, the bill may be "necessary but not sufficient." Legislation cannot impose the judgment for balancing risk and mission that is necessary to succeed. It cannot impose the culture of trust and respect that is necessary to succeed. And it cannot impose the leadership necessary for implementing change. However, it can impose conditions that will facilitate the achievement of these ideals.

My primary concern is the capability, commitment and staying power at the top of NNSA to carry out the change it will take to make a difference. By the "top," I mean the Administrator his Deputies and several next-level, senior leaders – a "critical mass." Even the Administrator and top Deputies alone cannot be the sole drivers of this effort. Therefore, I believe it would be valuable to recognize the time and continuity of leadership that change will require and to consider an extended tenure for the Administrator and his top leaders, perhaps eight years as we see has worked quite well in the nuclear navy.

Equally important is their unquestioned authority to design and implement the enormous change that is required. Notwithstanding the need for appropriate standards and oversight, they must retain sufficient independence and flexibility to safely balance risk and mission.

I applaud your legislative efforts in attempting to introduce a more consultative nature to the "advisory" function that the DNFSB provides to the DOE/NNSA. While

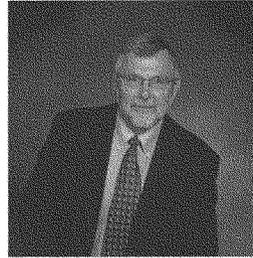
I remain somewhat skeptical of substantive success in this challenge, any progress toward improvement of the balance between risk and mission in this function would be an important step forward.

Finally, in the end, I personally believe that complete separation of NNSA from the DOE may indeed be necessary. The experience of this NNSA-DOE relationship to date would indicate that "semi-autonomy" might be a bridge too far.

Thank you for your time. I am happy to try to answer your questions.

Robert W. Kuckuck
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Danville, CA 94506

Bob Kuckuck is retired from the University of California and is currently consulting and serving on advisory boards for the three national nuclear weapons research laboratories. He is a member of the Nuclear Weapons External Advisory Board for Sandia National Laboratories and the Nuclear Weapons Complex Integration Committees for both the Lawrence Livermore and Los Alamos National Laboratories. Immediately prior to his retirement Bob served as the Director of the Los Alamos National Laboratory in 2005 and 2006.



Kuckuck held research and management positions at the Lawrence Livermore National Laboratory for more than 37 years, culminating in his serving as Deputy Director from 1994 to 2001. His research at the Laboratory was predominantly in atomic and nuclear experimentation studying underground nuclear explosions. His management roles included overseeing physics research for nuclear weapons development, leading the Laboratory's research program for scientific verification of international nuclear testing and arms control treaties and having responsibility for the Laboratory's underground nuclear testing program. As Deputy Director, Bob was responsible for all operations at the Laboratory.

Bob left Livermore in 2001 to become the first Principal Deputy Administrator of the newly created National Nuclear Security Administration in the Department of Energy. In 2003, he received the Secretary of Energy's Gold Award, the Department of Energy's highest honor.

In 1992-1994, Kuckuck served as Special Assistant to the President of the University of California and established the University's office for overseeing the three national laboratories the University managed for the DOE, Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory and Los Alamos National Laboratory.

Kuckuck's major areas of expertise include management of scientific and nuclear research and associated facilities, nuclear weapons development and testing, and international nuclear non-proliferation and arms control. He has broad experience in government, university and public relations.

Kuckuck received his PhD in applied science from the University of California at Davis, and his MSc degree in physics from the Ohio State University. He did his undergraduate work in physics at West Liberty State College in West Virginia.

Bob is married to the former Marilyn Kiger and they have three adult daughters and six grandchildren.

**DISCLOSURE FORM FOR WITNESSES
CONCERNING FEDERAL CONTRACT AND GRANT INFORMATION**

INSTRUCTION TO WITNESSES: Rule 11, clause 2(g)(5), of the Rules of the U.S. House of Representatives for the 112th Congress requires nongovernmental witnesses appearing before House committees to include in their written statements a curriculum vitae and a disclosure of the amount and source of any federal contracts or grants (including subcontracts and subgrants) received during the current and two previous fiscal years either by the witness or by an entity represented by the witness. This form is intended to assist witnesses appearing before the House Armed Services Committee in complying with the House rule. Please note that a copy of these statements, with appropriate redactions to protect the witness's personal privacy (including home address and phone number) will be made publicly available in electronic form not later than one day after the witness's appearance before the committee.

Witness name: Robert KUCKUCK

Capacity in which appearing: (check one)

- Individual
 Representative

If appearing in a representative capacity, name of the company, association or other entity being represented:

FISCAL YEAR 2011

federal grant(s)/ contracts	federal agency	dollar value	subject(s) of contract or grant
NONE			

FISCAL YEAR 2010

federal grant(s)/ contracts	federal agency	dollar value	subject(s) of contract or grant
NONE			

FISCAL YEAR 2009

Federal grant(s) / contracts	Federal agency	Dollar value	Subject(s) of federal grant
<i>NONE</i>			

Federal Contract Information: If you or the entity you represent before the Committee has entered into contracts (including subcontracts) with the federal government please provide the following information:

Number of contracts (including subcontracts) with the federal government:

Current fiscal year (2011): _____
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Federal agencies with which federal contracts are held:

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 Fiscal year 2009: _____

List of subjects of federal contracts (for example, ship construction, aircraft parts manufacturing, software design, force structure consultant, architecture & engineering services, etc.):

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Aggregate dollar value of federal contracts held:

Current fiscal year (2011): _____
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United States Government Accountability Office

GAO

Testimony
Before the Subcommittee on Strategic
Forces, Committee on Armed Services,
House of Representatives

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**MODERNIZING THE
NUCLEAR SECURITY
ENTERPRISE**

Observations on the
Organization and
Management of the National
Nuclear Security
Administration

Statement of Gene Aloise, Director
Natural Resources and Environment





Highlights of GAO-12-867T, a testimony before the Subcommittee on Strategic Forces, Committee on Armed Services, House of Representatives

Why GAO Did This Study

During the late 1990s, DOE had difficulties with a lack of clear management authority and responsibility that contributed to security problems at the nation's nuclear weapons laboratories and management problems with major projects. In response, Congress created NNSA as a separately organized agency within DOE under the NNSA Act. NNSA is responsible for managing nuclear weapon- and nonproliferation-related national security activities in laboratories and other facilities, collectively known as the nuclear security enterprise. GAO continues to identify problems across the nuclear security enterprise, from projects' cost and schedule overruns to inadequate oversight of safety and security at NNSA's sites. With NNSA proposing to spend tens of billions of dollars to modernize its facilities, it is important to ensure scarce resources are spent in an effective and efficient manner.

This testimony addresses (1) NNSA's early experiences organizing and operating as a separately organized agency within DOE and (2) NNSA's efforts to correct long-standing management deficiencies. It is based on prior GAO reports issued from January 1995 to March 2012.

DOE and NNSA continue to act on the numerous recommendations GAO has made to improve NNSA's management. GAO will continue to monitor DOE's and NNSA's implementation of these recommendations.

View GAO-12-867T. For more information, contact Gene Aloise at (202) 512-3841 or aloiseg@gao.gov

July 27, 2012

MODERNIZING THE NUCLEAR SECURITY ENTERPRISE

Observations on the Organization and Management of the National Nuclear Security Administration

What GAO Found

After the enactment of Title 32 of the National Defense Authorization Act for Fiscal Year 2000 (NNSA Act), the Department of Energy (DOE) and the National Nuclear Security Administration (NNSA) struggled to determine how NNSA should operate as a separately organized agency within the department. A number of factors contributed to this. First, DOE and NNSA did not have a useful model to follow for establishing a separately organized agency in DOE. Several federal agencies were suggested as models, such as the National Oceanic and Atmospheric Administration in the Department of Commerce. However, GAO reported in January 2007 that agency officials GAO interviewed did not consider their agency to be separately organized or believed that their agency's operational methods were transferable to NNSA. Second, DOE's January 2000 plan to implement the NNSA Act did not define how NNSA would operate as a separately organized agency within DOE. Internal DOE opposition to the creation of NNSA led the department to fill virtually every significant statutory position in NNSA with DOE officials (i.e., having DOE officials contemporaneously serve in NNSA and DOE positions). As GAO testified in April 2001, this practice of "dual-hatting" caused considerable concern about NNSA's ability to independently function. Also, lack of formal agreement between DOE and NNSA in a number of key areas such as, among others, budgeting and procurement, led to organizational conflicts that inhibited effective operations. Even where formal procedures were developed, interpersonal disagreements hindered effective cooperation. For example, a January 2007 GAO report described the conflict between NNSA and DOE counterintelligence offices, which led to Congress subsequently amending the NNSA Act to consolidate the counterintelligence programs of DOE and NNSA under DOE.

NNSA has made considerable progress resolving some of its long-standing management deficiencies, but significant improvement is still needed especially in NNSA's management of its major projects and contracts. GAO reported in June 2004 that NNSA has better delineated lines of authority and has improved communication between its headquarters and site offices. In addition, NNSA's establishment of an effective headquarters security organization has made significant progress resolving many of the security weaknesses GAO has identified. Nevertheless, NNSA continues to experience major cost and schedule overruns on its projects, such as research and production facilities and nuclear weapons refurbishments, principally because of ineffective oversight and poor contractor management. In some areas, NNSA can be viewed as a success. Importantly, NNSA has continued to ensure that the nuclear weapons stockpile remains safe and reliable in the absence of underground nuclear testing. At the same time, NNSA's struggles in defining itself as a separately organized agency within DOE, and the considerable management problems that remain have led to calls in Congress and other organizations to increase NNSA's independence from DOE. However, senior DOE and NNSA officials have committed to continuing reform, and DOE's and NNSA's efforts have led to some management improvements. As a result, GAO continues to believe, as it concluded in its January 2007 report, that drastic organizational change to increase independence is unnecessary and questions whether such change would solve the agency's remaining management problems.

Chairman Turner, Ranking Member Sanchez, and Members of the Subcommittee:

We are pleased to be here today to discuss the creation and implementation of the National Nuclear Security Administration (NNSA)—a separately organized agency within the Department of Energy (DOE). As you know, NNSA is responsible for the management and security of the nation's nuclear weapons, nuclear nonproliferation, and naval reactor programs at research and development laboratories, production plants, and other facilities known collectively as the nuclear security enterprise.¹

During the late 1990s, DOE experienced management difficulties with its nuclear weapons program that contributed to security problems at the nation's nuclear weapons laboratories and significant cost overruns on major projects. According to a June 1999 report by the President's Foreign Intelligence Advisory Board, DOE's management of the nuclear weapons laboratories, while representing "science at its best," also embodied "security at its worst" because of "organizational disarray, managerial neglect, and... a culture of arrogance." The board urged Congress to create a new organization that, whether established as an independent agency or a semiautonomous agency within DOE, would have a clear mission, streamlined bureaucracy, and drastically simplified lines of authority and accountability. Responding to the board's recommendations, Congress created NNSA under Title 32 of the National Defense Authorization Act for Fiscal Year 2000—the NNSA Act.²

The NNSA Act established NNSA as a "separately organized agency" within DOE. The act established the position of DOE Under Secretary for Nuclear Security, who was also designated as the Administrator of NNSA. The Secretary of Energy and the Deputy Secretary of Energy were allowed to establish policy for NNSA and to give direction to NNSA through the Administrator; however, other DOE employees were

¹ Specifically, NNSA manages three national nuclear weapon design laboratories—Lawrence Livermore National Laboratory in California, Los Alamos National Laboratory in New Mexico, and Sandia National Laboratories in New Mexico and California. It also manages four nuclear weapons production plants—the Pantex Plant in Texas, the Y-12 National Security Complex in Tennessee, the Kansas City Plant in Missouri, and the Tritium Extraction Facility at DOE's Savannah River Site in South Carolina. NNSA also manages the Nevada National Security Site, formerly known as the Nevada Test Site.

² Pub. L. No. 106-65, 113 Stat. 512, 953 (1999)

prohibited from directing the activities of individual NNSA employees. In addition, the NNSA Act required that, among other things, NNSA develop a planning, programming, and budgeting process to ensure that NNSA operated under sound financial management principles. Using this planning, programming, and budgeting process, NNSA is also required to annually submit to Congress a Future Years Nuclear Security Program (FYNSP) plan that details NNSA's planned expenditures for the next 5 years.

DOE's and NNSA's management of the nuclear security enterprise has been the subject of much criticism. The department's problems are long-standing. For example, we first designated DOE's management of its contracts as an area at high risk of fraud, waste, abuse, and mismanagement in 1990 because of the department's record of inadequate management and oversight of its contractors. In January 1995, we reported that DOE's laboratories did not have clearly defined missions that focus their considerable resources on accomplishing the department's changing objectives and national priorities.³ Noting that the laboratories have made vital contributions to the nation's defense and civilian science and technology efforts, we reported that DOE had not coordinated these laboratories' efforts to solve national problems but had instead managed each laboratory on a program-by-program basis. The establishment of NNSA as a semiautonomous agency within DOE in 2000 was intended to correct these long-standing and widely recognized DOE management problems, which had been underscored by significant cost overruns on major projects and security problems at the national laboratories.

NNSA's creation, however, has not yet had the desired effect of fully resolving these management problems. Progress has been made, but NNSA and DOE's Office of Environmental Management remain on our high-risk list.⁴ Furthermore, we continue to identify problems across the nuclear security enterprise, ranging from significant cost and schedule overruns on major projects to ineffective federal oversight of safety and

³ GAO, *Department of Energy: National Laboratories Need Clearer Missions and Better Management*, GAO/RCED-95-10 (Washington, D.C., Jan. 27, 1995).

⁴ GAO, *High-Risk Series: An Update*, GAO-11-278 (Washington, D.C., February 2011).

security at NNSA's sites.⁵ Concerns have also been raised by national laboratory and other officials that DOE's and NNSA's oversight of the laboratories' activities has been excessive and that the safety and security requirements the laboratories' are subject to are overly prescriptive and burdensome, which has resulted in a negative effect on the quality of science performed at these laboratories.

In January 2007, we testified before this Subcommittee on the extent to which NNSA has taken steps to improve security at its facilities, improve its management practices, and revise its organizational structure.⁶ Similarly, in February 2012, we testified before this Subcommittee on NNSA's management of the nuclear security enterprise.⁷ My testimony today, which is based on these and other reports and testimonies we have issued since NNSA's creation, discusses (1) NNSA's early experiences organizing and operating as a separately organized agency within DOE and (2) NNSA's efforts to correct long-standing management deficiencies. Detailed information about scope and methodology can be found in our issued reports. We conducted the performance audit work that supports this statement in accordance with generally accepted government auditing standards. Those standards require that we plan and perform audits to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

⁵ GAO, *Department of Energy: Views on the Progress of the National Nuclear Security Administration in Implementing Title 32*, GAO-01-602T (Washington, D.C.: Apr. 4, 2001), GAO, *NNSA Management: Progress in the Implementation of Title 32*, GAO-02-93R (Washington, D.C.: Dec. 12, 2001); and GAO, *Department of Energy: NNSA Restructuring and Progress in Implementing Title 32*, GAO-02-451T (Washington, D.C.: Feb. 26, 2002).

⁶ GAO, *National Nuclear Security Administration: Security and Management Improvements Can Enhance Implementation of the NNSA Act*, GAO-07-428T (Washington, D.C.: Jan. 31, 2007).

⁷ GAO, *National Nuclear Security Administration: Observations on NNSA's Management and Oversight of the Nuclear Security Enterprise*, GAO-12-473T (Washington, D.C.: Feb. 16, 2012).

Background

DOE is responsible for a diverse set of missions, including nuclear security, energy research, and environmental cleanup. These missions are managed by various organizations within DOE and largely carried out by contractors at DOE sites. According to federal budget data, NNSA is the largest organization in DOE, overseeing nuclear weapons, nuclear nonproliferation, and naval reactors missions at its sites. With a \$10.5 billion budget in fiscal year 2011—nearly 40 percent of DOE's total budget—NNSA is responsible for, among other things, providing the United States with safe, secure, and reliable nuclear weapons in the absence of underground nuclear testing and maintaining core competencies in nuclear weapons science, technology, and engineering. Ensuring that the nuclear weapons stockpile remains safe and reliable in the absence of underground nuclear testing is extraordinarily complicated and requires state-of-the-art experimental and computing facilities, as well as the skills of top scientists in the field. Over the past decade, the United States has invested billions of dollars in sustaining the cold war-era stockpile and upgrading the laboratories and, in 2011, the administration announced plans to request \$88 billion from Congress over the next decade to operate and modernize the nuclear security enterprise and ensure that base scientific, technical, and engineering capabilities are sufficiently supported, and the nuclear deterrent in the United States can continue to be safe, secure, and reliable.

Under DOE's long-standing model of having unique management and operating (M&O) contractors at each site, management of its sites has historically been decentralized and, thus, fragmented. Since the Manhattan Project produced the first atomic bomb during World War II, NNSA, DOE, and their predecessor agencies have depended on the expertise of private firms, universities, and others to carry out research and development work and efficiently operate the facilities necessary for the nation's nuclear defense. DOE's relationship with these entities has been formalized over the years through its M&O contracts—agreements that give DOE's contractors unique responsibility to carry out major portions of DOE's missions and apply their scientific, technical, and management expertise.⁸

⁸ M&O contracts are agreements under which the government contracts for the operation, maintenance, or support, on its behalf, of a government-owned or -controlled research, development, special production, or testing establishment wholly or principally devoted to one or more of the major programs of the contracting federal agency. Federal Acquisition Regulation, 48 C.F.R. § 17.601.

Currently, DOE spends 90 percent of its annual budget on M&O contracts, making it the largest non-Department of Defense contracting agency in the government. The M&O contractors at DOE's NNSA sites have operated under DOE's direction and oversight but largely independently of one another. Various headquarters and field-based organizations within DOE and NNSA develop policies, and NNSA site offices, collocated with NNSA's sites, conduct day-to-day oversight of the M&O contractors and evaluate the contractors' performance in carrying out the sites' missions.

**DOE and NNSA
Struggled to
Determine How
NNSA Should Operate
as a Separately
Organized Agency**

NNSA focused considerable attention on reorganizing its internal operations; however, it and DOE have struggled with establishing how NNSA should operate as a separately organized agency within the department. Several factors contributed to this situation. First, DOE and NNSA did not have a useful model to follow for establishing a separately organized agency in DOE. The President's Foreign Intelligence Advisory Board's June 1999 report suggested several federal agencies, such as the National Oceanic and Atmospheric Administration in the Department of Commerce, which could be used as a model for NNSA. However, as we reported in January 2007, none of the agency officials we interviewed considered their agency to be separately organized or believed that their agency's operational methods were transferable to NNSA.⁹ Second, DOE's January 2000 implementation plan, which was required by the NNSA Act, did not define how NNSA would operate as a separately organized agency within DOE. Instead, reflecting the opposition of the then DOE senior leadership to the creation of NNSA, the implementation plan "dual-hatted" virtually every significant statutory position in NNSA with DOE officials (i.e., having DOE officials contemporaneously serve in NNSA and DOE positions), including the Director of NNSA's Office of Defense Nuclear Counterintelligence and General Counsel. As we testified in April 2001, this practice caused considerable concern about NNSA's ability to function with the independence envisioned in the NNSA

⁹ GAO, *National Nuclear Security Administration: Additional Actions Needed to Improve Management of the Nation's Nuclear Programs*, GAO-07-36 (Washington, D.C. Jan. 19, 2007). We interviewed agency officials from the Department of Commerce's National Oceanic and Atmospheric Administration, the Defense Advanced Research Projects Agency, the Defense Threat Reduction Agency, and the Department of Transportation's Federal Aviation Administration.

Act.¹⁰ Dual-hatting was subsequently forbidden by an amendment to the NNSA Act.¹¹

A lack of formal agreement between DOE and NNSA in a number of key areas—budgeting, procurement, information technology, management and administration, and safeguards and security—resulted in organizational conflicts that inhibited effective operations. Even where formal procedures were developed, interpersonal disagreements hindered effective cooperation. For example, our January 2007 report described the conflict between NNSA and DOE counterintelligence offices.¹² Specifically, NNSA and DOE counterintelligence officials disagreed over (1) the scope and direction of the counterintelligence program, (2) their ability to jointly direct staff in the headquarters counterintelligence program offices, (3) the allocation of counterintelligence resources, (4) counterintelligence policy making and (5) their roles and responsibilities in handling specific counterintelligence matters. Subsequently, Congress amended the NNSA Act to consolidate the counterintelligence programs of DOE and NNSA under the Department of Energy.¹³

These persistent challenges defining NNSA's role as a separately organized agency have led to calls in Congress and other organizations to enhance NNSA's ability to operate independently of DOE. For example, the Defense Science Board proposed in 2006 that a completely independent nuclear weapons agency be created.¹⁴ DOE's Office of Inspector General has also recently questioned the relationship between DOE and NNSA. Specifically, in November 2011, DOE's Office of Inspector General reported that NNSA, as a result of its separately

¹⁰ GAO-01-602T

¹¹ Pub. L. 106-398, § 3157 (2000) (codified at 50 U.S.C. § 2410).

¹² GAO-07-36

¹³ Section 3117 of the John Warner National Defense Authorization Act for Fiscal Year 2007 contained provisions to temporarily consolidate the counterintelligence programs of DOE and NNSA under the Department of Energy. Pub. L. No. 109-364, § 3117 (2006). In 2009, Congress made this consolidation permanent. Pub. L. No. 111-84, § 3121 (2009).

¹⁴ The Defense Science Board provides the Department of Defense with independent advice and recommendations on matters relating to the department's scientific and technical enterprise. See Defense Science Board Task Force, *Nuclear Capabilities* (Washington, D.C.: December 2006).

organized status, maintains a costly set of distinctly separate overhead and indirect cost operations that often duplicate existing DOE functions.¹⁵ For example, NNSA retains separate functions in areas such as, among others, congressional affairs, general counsel, human resources, procurement and acquisition, and public affairs. According to this November 2011 report, these redundant operations are costly and can complicate communications and program execution. There have been continuing calls for removing NNSA from DOE and establishing it as a separate agency. We reported in January 2007 that former senior DOE and NNSA officials with whom we spoke generally did not favor removing NNSA from DOE; we concluded that such drastic change was unnecessary to produce an effective organization.¹⁶

NNSA Has Made Considerable Improvements, but Deficiencies Persist, Especially in Management of Major Projects and Contracts

Since its creation, NNSA has made considerable progress resolving some of its long-standing management deficiencies. For example, we reported in June 2004 that NNSA had better delineated lines of authority and improved communication between NNSA headquarters and its site offices.¹⁷ Furthermore, our January 2007 report contained 21 recommendations to the Secretary of Energy and the Administrator of NNSA that were intended to correct deficiencies in five areas—organization, security, project management, program management, and financial management. DOE and NNSA have taken important steps to address most of these recommendations. For example, to improve security, we recommended that the Administrator of NNSA, among other things, implement a professional development program for security staff to ensure the completion of needed training, develop a framework to evaluate results from security reviews and guide security improvements, and establish formal mechanisms for sharing and implementing lessons learned across the weapons complex. NNSA's establishment of an effective headquarters security organization has made significant progress implementing these recommendations by performing security

¹⁵ DOE Office of Inspector General, *Special Report: Management Challenges at the Department of Energy*, DOE/IG-0858 (Washington, D.C. November 2011).

¹⁶ GAO-07-36

¹⁷ GAO, *National Nuclear Security Administration: Key Management Structure and Workforce Planning Issues Remain as NNSA Conducts Downsizing*, GAO-04-545 (Washington, D.C. : June 25, 2004).

reviews, developing security performance measures, and instituting a security lessons-learned center.

Nevertheless, NNSA continues to experience significant deficiencies, particularly in its management of major projects and contracts. As we testified in February 2012, a basic tenet of effective management is the ability to complete projects on time and within budget.¹⁸ However, for more than a decade, NNSA has continued to experience significant cost and schedule overruns on its major projects, principally because of ineffective oversight and poor contractor management. We have reported that NNSA's efforts to extend the operational lives of nuclear weapons in the stockpile have experienced cost increases and schedule delays, such as a \$300 million cost increase and 2-year delay in the refurbishment of the W87 nuclear warhead and a \$70 million cost increase and 1-year delay in the refurbishment of the W76 nuclear warhead.¹⁹ Furthermore, we reported that the estimated cost to construct a modern Uranium Processing Facility at NNSA's Y-12 National Security Complex experienced a nearly sevenfold cost increase from between \$600 million and \$1.1 billion in 2004 to between \$4.2 billion and \$6.5 billion in 2011.²⁰ We also reported in March 2012 that NNSA's project to construct a new plutonium research facility at Los Alamos National Laboratory—the Chemistry and Metallurgy Research Replacement Nuclear Facility—would cost between \$3.7 billion and \$5.8 billion—nearly a sixfold increase from NNSA's original estimate.²¹ NNSA's February 2012 decision to defer construction of this facility for at least 5 years will result in a total delay of between 8 and 12 years from its original plans.

NNSA's planning, programming, and budgeting process has also experienced a setback, which raises questions about the process's

¹⁸ GAO-12-473T.

¹⁹ GAO, *Nuclear Weapons: Improved Management Needed to Implement Stockpile Stewardship Program Effectively*, GAO-01-48 (Washington, D.C.: Dec. 14, 2000) and GAO, *Nuclear Weapons: NNSA and DOD Need to More Effectively Manage the Stockpile Life Extension Program*, GAO-09-385 (Washington, D.C.: Mar. 2, 2009).

²⁰ GAO, *Nuclear Weapons: National Nuclear Security Administration's Plans for Its Uranium Processing Facility Should Better Reflect Funding Estimates and Technology Readiness*, GAO-11-103 (Washington, D.C.: Nov. 19, 2010).

²¹ GAO, *Modernizing the Nuclear Security Enterprise: New Plutonium Research Facility at Los Alamos May Not Meet All Mission Needs*, GAO-12-337 (Washington, D.C.: Mar. 26, 2012).

capability and flexibility. Specifically, NNSA's modernization and operations plans are detailed and annually updated in the agency's Stockpile Stewardship and Management Plan (SSMP), which provides details of nuclear security enterprise modernization and operations plans over the next two decades. In addition, as discussed above, the NNSA Act requires NNSA to annually submit to Congress an FYNSP—a budget document approved by the Office of Management and Budget that details NNSA's planned expenditures for the next 5 years. Furthermore, Section 1043 of the National Defense Authorization Act for Fiscal Year 2012 requires the Department of Defense and NNSA to jointly produce an annual report that, among other things, provides a detailed 10-year estimate of modernization budget requirements. NNSA neither submitted an FYNSP based on "programmatic requirements"²² nor the Section 1043 annual report with its fiscal year 2013 budget submission. In addition, NNSA has yet to release an updated SSMP. According to the Secretary of Energy, the August 2011 Budget Control Act created "new fiscal realities" that have caused the agency to revise its long-range modernization and operations plans and budget.²³ An NNSA official told us that the revised plans, which will include the FYNSP, Section 1043 annual report, and updated SSMP should be completed in July 2012. We are currently reviewing NNSA's planning, programming, and budgeting process in response to a request from the Subcommittee on Energy and Water Development, Senate Committee on Appropriations, and we expect to issue a report on this work in the next few months.

In conclusion, producing a well-organized and effective agency out of what was widely considered a dysfunctional enterprise has been a considerable challenge. In some areas, NNSA can be viewed as a success. In particular, NNSA has successfully ensured that the nuclear

²² The NNSA fiscal year 2013 budget submission said that future year funding levels based on actual programmatic requirements will be produced a later date

²³ The Budget Control Act of 2011, amending the Balanced Budget and Emergency Deficit Control Act of 1985, establishes limits on discretionary spending for fiscal years 2012 through 2021. In addition, the act specifies additional limits on discretionary spending and automatic reductions in direct spending because legislation was not enacted that would reduce projected deficits by at least \$1.2 trillion by the end of fiscal year 2021. Among other things, the Budget Control Act requires the Office of Management and Budget to calculate, and the President to order, a sequestration of discretionary and direct spending on January 2, 2013, to achieve reductions for that fiscal year. See GAO, *Agency Operations: Agencies Must Continue to Comply with Fiscal Laws Despite the Possibility of Sequestration*, GAO-12-675T (Washington, D.C. Apr. 25, 2012)

weapons stockpile remains safe and reliable in the absence of underground nuclear testing, accomplishing this complicated task by using state-of-the-art facilities, as well as the skills of top scientists. As we testified in February 2012, maintaining government-owned facilities that were constructed more than 50 years ago and ensuring M&O contractors are sustaining critical human capital skills that are highly technical in nature and limited in supply are both difficult undertakings. Careful federal oversight over the tens of billions of dollars NNSA proposes to spend to modernize nuclear facilities will be necessary to ensure these funds are spent in as an effective and efficient manner as possible, especially given NNSA's record of weak management of its major projects.

Over the past decade, we have made numerous recommendations to DOE and NNSA to improve their management and oversight practices. DOE and NNSA have acted on many of these recommendations and have made considerable progress. Nevertheless, enough significant management problems remain that prompt some to call for removing NNSA from DOE and either moving it to another department or establishing it as a separate agency. As we concluded in January 2007, however, we do not believe that such drastic changes are necessary, and we continue to hold this view today. Importantly, we are uncertain whether such significant organizational changes to increase NNSA's independence would produce the desired effect of creating a modern, responsive, effective, and efficient nuclear security enterprise. In light of the substantial leadership commitment to reform made by senior DOE and NNSA officials, and the significant improvements that have already been made, we believe that NNSA remains capable of delivering the management improvements necessary to be an effective organization, and we will continue to monitor NNSA's progress making these improvements.

Chairman Turner, Ranking Member Sanchez, and Members of the Subcommittee, this completes my prepared statement. I would be pleased to respond to any questions you may have at this time.

GAO Contact and Staff Acknowledgments

If you or your staff members have any questions about this testimony, please contact me at (202) 512-3841 or aloisee@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this testimony. GAO staff who made key contributions to this testimony are Allison Bawden, Ryan T. Coles,

Jonathan Gill, and Kiki Theodoropoulos, Assistant Directors, and Patrick Bernard, Senior Analyst.

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- Gene Aloise is a Director in the Natural Resources and Environment team at GAO. He is GAO's recognized expert in international nuclear nonproliferation and safety/security issues and completed training on these subjects at the University of Virginia and Princeton University. His work for GAO has taken him to some of Russia's closed nuclear cities and the Chernobyl reactor in Ukraine as well as numerous nuclear facilities around the world and in the United States. Mr. Aloise has had years of experience developing, leading, and managing GAO domestic and international engagements. His diverse experience includes assignments with congressional committees as well as various offices within GAO. He has received numerous awards for his leadership and expertise including GAO's Meritorious Service and Distinguished Service Awards. Mr. Aloise received his bachelor's degree in political science/economics from Rowan University and holds a Master of Public Administration from Temple University. Mr. Aloise is also a graduate of the Senior Executive Fellows Program, John F. Kennedy School of Government, Harvard University. He has appeared on numerous TV and radio programs, including CBS's 60 Minutes, CNN, BBC, NPR, and has frequently been quoted in the NYT's, Washington Post and other major news media. Mr. Aloise has testified before Congress on national security and other matters over 50 times and is the Lead Executive responsible for the issuance of hundreds of reports with recommendations that have led to legislative improvements in Agency effectiveness and efficiency and over \$5 Billion in financial savings.

**WITNESS RESPONSES TO QUESTIONS ASKED DURING
THE HEARING**

JUNE 27, 2012

RESPONSES TO QUESTIONS SUBMITTED BY MR. TURNER

Mr. BROOKS. I believe I was able to present the structural problems during my testimony and have no examples to add. The cultural problems are more difficult. Most Federal civil servants, like most human beings, want to believe that they are making a difference. The Department of Energy is fortunate to have an experienced and dedicated workforce. It has proven difficult for some of them to accept that things that they have done for a lifetime they should now no longer do in the name of something called "semi-autonomy." Many working level officials of the non-NNSA parts of the Department tend to believe that it is an error for them to no longer be involved with NNSA. This is true even in areas (such as five year budgeting) where NNSA was clearly the leader within the department. Perhaps the most striking example of this tendency is in the legal area. Federal lawyers quite properly regard their job as protecting senior officials, especially the Secretary. It is very difficult for them culturally to accept that legal organization (such as the office of NNSA's General Counsel) over which they have no control can be consistently relied on to provide appropriate legal services in areas for which they feel responsible.

The structural problems I observed are almost certainly amenable to solution, although the integrated nature of the Department of Energy information technology is particularly challenging. The cultural problems, however, may not be solvable and are the strongest argument for greater autonomy for NNSA. [See page 6.]

Mr. ALOISE. We have not performed an organizational culture assessment of NNSA. However, organizational culture experts generally agree that an organization's beliefs and values affect the behavior of its members. In previous work [GAO: Organizational Culture: Techniques Companies Use to Perpetuate or Change Beliefs and Values, GAO/NSIAD-92-105, (Washington, D.C.: Feb. 27, 1992).], we have found that (1) experts agree that an organization's decision to change its culture is generally triggered by a specific event or situation and is a long-term effort that takes at least 5 to 10 years to complete and (2) company officials believe that the two key techniques for a successful culture change are the top management's total commitment to the change and training that promotes and develops skills related to the company's desired values or beliefs. In addition, the organizations we reviewed indicated that effecting successful cultural change requires a combination of many techniques, including (1) distributing a written statement of values and beliefs; (2) creating a management style that reinforces the desired values and beliefs; (3) offering rewards, incentives, and promotions to encourage behavior that reinforces those beliefs; (4) holding company gatherings to discuss those beliefs; (5) developing an organizational structure that is compatible with those beliefs; (6) using systems, procedures, and processes to support organizational values; and (7) using stories, legends, myths, and slogans to communicate those values and beliefs. In our view, a dramatic organizational change will be disruptive in the short run. In addition, dramatic organization change that is not supported by the other activities listed above may not be effective in changing organizational culture. [See page 11.]

RESPONSE TO QUESTION SUBMITTED BY MR. THORNBERRY

Mr. ALOISE. We recommended in October 2008 that if DOE's Office of Health, Safety, and Security (HSS) does not take appropriate action to meet the criteria for independent oversight as defined in our report [GAO, Nuclear Safety: Department of Energy Needs to Strengthen Its Independent Oversight of Nuclear Facilities and Operations, GAO-09-61 (Washington, D.C. Oct. 28, 2008).], the Congress should consider the following:

- permanently establishing in law the responsibilities of HSS, or
- shifting DOE to external regulation by:
 - providing the resources and authority to the Defense Nuclear Facilities Safety Board to oversee all DOE nuclear facilities and to enforce DOE nuclear safety rules and directives, or

- providing the resources and authority to NRC to externally regulate all or just newly constructed DOE nuclear facilities.

Appendix V of this report assessed the options for external regulation of DOE's nuclear facilities, either by the Defense Nuclear Facilities Safety Board or the Nuclear Regulatory Commission. As discussed in this appendix, shifting responsibility for external regulation to either of these organizations appears practical, if they are given the necessary authority and resources. We reported that the Nuclear Regulatory Commission had not expressed a view on expanding its oversight role beyond the DOE facilities already subject to its regulation. DOE and the Safety Board have taken issue with this option because of concerns about the transition costs versus the likely safety benefits of doing so. [See page 8.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

JUNE 27, 2012

QUESTIONS SUBMITTED BY MR. TURNER

Mr. TURNER. 1) Ambassador Brooks and Dr. Kuckuck, does having detailed procedures and very prescriptive processes help or hinder safety? What about security? Does having detailed procedures and very prescriptive processes lead to improvements in safety culture or security culture? How does detailed, transaction-level oversight impact efforts to improve safety, security, and associated cultures?

Mr. BROOKS. I believe there is considerable evidence that detailed procedures for complex operations help improve safety. There is, however, no evidence that attempting to prescribe such procedures from headquarters is useful. Transaction level oversight risks descending into micromanagement and shifts the perceived responsibility from those conducting the procedures to those overseeing them. Thus I believe that for both safety and security, the appropriate function of oversight is to ensure that the local plant or laboratory has provided appropriate procedures and has a system to ensure their consistent and effective use.

Mr. TURNER. 2) Ambassador Brooks and Dr. Kuckuck, as mentioned in my prepared opening statement, NNSA's February 2002 report to Congress on how it would operate and be organized contains many indications that NNSA was headed in the right direction—that it was preparing to implement the intent of the NNSA Act. The report lists a series of actions it would take to “lift administrative burdens through streamlining policies, procedures, and staffing.” This included an “objective of reducing by half the administrative workload imposed by policies, procedures, and guidance,” and plans to “reengineer core business practices and right-size and reinvigorate federal staff.”

○ Do you believe implementation of this February 2002 plan was successful? Why or why not?

○ Was the objective of “reducing by half the administrative workload imposed by policies, procedures, and guidance” achieved? Why or why not?

○ Was the Federal staff “right-sized and reinvigorated” as the report indicated? — Budget documents indicate that NNSA's Office of the Administrator started at around 1,940 employees in FY2002, was reduced to less than 1,700 by FY2005 through streamlining initiatives, but is now back at above 1,900. Why did the Federal workforce numbers bounce back to pre-NNSA levels, despite all of the effort at streamlining?

○ All of the reports we read and experts we talk to seem to say that the administrative bureaucracy has only gotten worse. How and where did we get off track?

Mr. BROOKS. I lack the detailed knowledge to comment on developments within NNSA since I left in 2007. I believe that during my tenure we made substantial progress on “right-sizing and reinvigoration.” As detailed in my prepared testimony, however, we were never fully successful in establishing NNSA's autonomy from the broader Department of Energy.

Mr. TURNER. 3) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, NNSA's February 2002 report to Congress states the NNSA and the Secretary of Energy agreed to a streamlined independent oversight process for NNSA. Basically, DOE's Office of Independent Oversight and Performance Assurance would consolidate DOE's oversight of NNSA into a single office.

○ Did this independent DOE oversight model work? Why or why not?

○ Was this independent DOE oversight model really tried in earnest? Is it still in place? If it is not in place, what is DOE's current structural approach to oversight of NNSA?

Mr. BROOKS. The intent of the February 2002 report was to save staff resources by not requiring NNSA to establish its own independent oversight organization. In principle, this was a good idea, but in hindsight it has had unforeseen and unfortunate consequences. As I indicated in my prepared testimony, NNSA's practice of using Department of Energy-wide organizations (independent oversight, legal, etc.) made it more difficult to establish semi-autonomy and thus to reduce excessively prescriptive procedures. In theory, the DOE oversight organization could simply have used to evaluate how well NNSA policies and procedures were being implemented. In practice, however, the Office of Independent Oversight and Performance Assurance became an obstacle to our reducing and streamlining requirements.

I am not able to comment on current procedures within the Department of Energy and recommend the committee seeks that information from DOE and NNSA.

Mr. TURNER. 4) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, NNSA's February 2002 report to Congress indicates that NNSA was striving to become a true "separately organized" agency, and that "where appropriate, NNSA is seeking autonomy, but it has negotiated . . . the use of the DOE's staff to address NNSA needs, with the proviso that DOE support staff function in accordance with an agreement that ensures that NNSA priorities and standards are the basis of the service."

○ Ambassador, your prepared statement says that you now "regret" relying on DOE staff offices for support because it weakened your ability to establish autonomy—and "establishing such autonomy became a major problem."

— Please explain why this form of "semi-autonomy" didn't work.

— Do you believe this type of "semi-autonomy" can work at all, or is full or much stronger autonomy necessary?

○ Dr. Kuckuck and Mr. Aloise, do you believe this concept of semi-autonomy can work, or is full or significantly stronger autonomy needed?

○ Ambassador Brooks and Dr. Kuckuck, NNSA has told us that it is currently subject to 270 separate DOE orders, directives, and rules. Does this fit the definition of "separately organized" and "semi-autonomous" as you understood it during your time in the early years of NNSA?

Mr. BROOKS. Semi-autonomy did not work because organizations that had department-wide responsibilities were unwilling (without substantial and continuing effort by senior NNSA officials) to accept the view that they need not exercise supervision over NNSA. This was a perfectly understandable reaction from dedicated civil servants who were convinced that they were adding value. Such an attitude, however, made it difficult to implement our vision of semi-autonomy. Although we did not fully realize it early in my tenure, there actually are no good examples of semi-autonomy within the Federal Government on which we can model an appropriate DOE–NNSA relationship. This leads me to conclude that, while good people can make any system work to some degree, the structural benefits of an independent NNSA are inconsistent with semi-autonomy as it was actually implemented.

I do not believe that simply counting the number of Department of Energy orders and other directives is a particularly useful measure of how well a "separately organized" or "semi-autonomous" organization is functioning. What is important is not the number of orders, but their content. For example, when we did the pilot program at the Kansas City Plant, we exempted the plant from a number of departmental regulations. The Inspector General objected to our including a departmental order that required cooperation with the Inspector General functions. Whether that order did or did not apply to NNSA had very little bearing on our functioning. The problem with the large number of DOE orders is not the number per se but the prescriptive detail of many of them.

Mr. TURNER. 5) Ambassador Brooks, your prepared statement mentions that "clear lines of authority and accountability are made more difficult by the number of external bodies to whom the Administrator is in some sense accountable." As you know, one of the key reasons for the NNSA Act was to clear up confused lines of authority and accountability.

○ Did implementation of NNSA help clear this up? How?

○ Would you please describe all of the oversight that is applied to the nuclear security enterprise, for instance on safety?

○ Do you think all of these layers contribute to inefficiency? Do you think they add value, or are they duplicative and add minimal benefit?

Mr. BROOKS. I believe implementation of NNSA clarified lines of authority and accountability. While there is considerable evidence (including the significant Y-12 security incident that occurred after the date of this hearing) that there are still areas in which clear lines of accountability do not exist, I believe that NNSA had made substantial progress compared to the almost incomprehensible situation documented in the 1990s. That said, much of the perceived micromanagement and duplicative oversight was not within the control of the NNSA Administrator and some of it was not within the control of the Secretary of Energy. NNSA facilities were routinely audited by the Department of Energy Office of Independent Assessment, by the Department of Energy Inspector General, by the Government Accountability Office and by the Defense Nuclear Facilities Safety Board. These audits were in general not coordinated with one another and often were duplicative. Many required detailed, formal corrective action plans which tended to foster detailed transactional oversight.

Routine audits by the Government Accountability Office and the Inspector General are simply a fact of life. I do not believe it is useful for the Congress to consider

changing NNSA's vulnerability to such procedures given that both GAO and the Inspector General serve broader purposes. Therefore my efforts—which were not successful—were to reduce oversight and audits from within the Department of Energy and to work toward a time when I could recommend to the Congress that the jurisdiction of the Defense Nuclear Facilities Safety Board was no longer required. I still believe that to be the correct approach.

Mr. TURNER. 6) Ambassador Brooks and Dr. Kuckuck, in a recent press article, in the Nuclear Weapons Exchange Monitor, Ambassador Brooks is quoted saying “I just think it’s a misunderstanding that the line doesn’t care about safety because you can’t do your mission if you have safety problems . . . I think that the idea that if the NNSA organization doesn’t have DOE’s Office of Health, Safety, and Security looking over its shoulder [NNSA] will not pay enough attention to safety is wrong.” Do you think NNSA’s safety program is sufficiently mature without DOE staff—but still with independent oversight from the Defense Nuclear Facilities Safety Board and the Inspector General?

Mr. BROOKS. Yes.

Mr. TURNER. 7) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, we’ve heard from many experts that the status quo at NNSA and DOE is unsustainable. We’ve heard ominous warnings from the National Academies of Science that these governance and management problems are threatening the quality of science and engineering at the nuclear weapons labs. We’ve heard from DOD that the costs of key nuclear infrastructure modernization projects are being driven up dramatically by excessive oversight and regulation that provide minimal safety benefit. And now, with this latest budget request, we’re seeing key programs tossed overboard because we don’t have enough money to pay for both the bureaucracy and the mission—and apparently the bureaucracy is a higher priority.

○ We saw how dysfunctional DOE was in the 1990s—that’s why we created NNSA. What do you think the future will hold if we just continue under the current status quo?

Mr. BROOKS. At the time I left NNSA I believed that these problems would be mitigated by greater autonomy. At the same time, it is important to recognize that structures and procedures can facilitate leadership but not substitute for it. Good people can make any system work. The challenge for the Congress and the executive branch is to devise an NNSA governance structure that will make it easier to exercise sound leadership. The present path does not appear likely to eliminate the problems that you cite. But I am not as certain as I was when I left NNSA that greater autonomy alone is an acceptable answer. There are disconcerting examples, including the recent Y-12 security incident, that suggest internal NNSA procedures may also require review. It is my understanding that such detailed review is in progress.

Mr. TURNER. 8) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, as we look to address the continuing challenges at NNSA and DOE through legislation and actions in the executive branch, what lessons should we learn from the NNSA Act and its implementation? What should be the key messages from the past and how might they apply to the problems at NNSA and DOE that all of these reports talk about today?

Mr. BROOKS. First, if there is to be change driven by legislation, I believe it will be important to focus on people. In particular, I believe significant continuity is required in the office of the Administrator. Further, it will be important that the Secretary and Deputy Secretary of Energy understand and support the intent of Congress.

Second, the intent of the legislation must be clear and strong barriers must be established to eliminate the need for constant low-level bureaucratic warfare to implement Congress’s intent.

While it is possible that a semi-autonomous approach can be made to work, it remains my view—as my testimony indicated—that full separation between NNSA and the Department of Energy may be required.

Mr. TURNER. 9) Ambassador Brooks and Dr. Kuckuck, based on your experiences in the early NNSA and since then, would you please comment on the reforms to NNSA contained in the House-passed FY13 defense authorization bill (H.R.4310)? Will it address the well-known and long-standing problems?

○ Your testimony indicates you think they may not be aggressive enough—that full autonomy is needed for NNSA. Do the reforms in the bill not go far enough? Can they be effective without strong leadership from the executive branch? Are there gaps we are not addressing?

Mr. BROOKS. Some of the reforms in the bill attempt to constrain the authority of Department of Energy staff elements to interfere with NNSA. Unfortunately, they do so by constraining the authority of the Secretary of Energy. This is probably un-

workable. The Secretary must have the authority to oversee NNSA if the intent of Congress is to keep NNSA within the Department, while remaining a separately organized entity.

Whatever the ultimate solution is, it cannot be effective without strong leadership from within the executive branch. Organizational changes can facilitate leadership, but they cannot substitute for it.

Mr. TURNER. 10) Ambassador Brooks and Dr. Kuckuck, this subcommittee has reviewed the dozens of reports in the 1980s and 1990s that led to creation of NNSA. They all offer clear descriptions of the problems at DOE, including recurring security problems and gross mismanagement. Senior DOE leadership even embarked on several reform initiatives—but none were effective at fixing the organization. Why was senior DOE leadership unable to reform the organization? Why did it require Congress to step in and try to fix a problem that was so widely recognized?

Mr. BROOKS. I do not know why pre-NNSA reforms were not effective. I had no experience within the Department of Energy prior to NNSA, and thus have no personal basis for making judgments. I do, however, know some of the individuals who were involved in early reform efforts. They are dedicated and competent public servants. I conclude, therefore, that the problem probably lies in the organizational culture of the Department of Energy.

Mr. TURNER. 11) Ambassador Brooks and Dr. Kuckuck, in the early days of NNSA you were both in senior positions responsible for implementing the NNSA Act. With hindsight, what are the strengths and weaknesses of the NNSA Act?

- Was the intent of the “separately organized” and “semi-autonomous” nature of NNSA clear in the statute?

- Do you believe it was clearly understood within DOE and the new NNSA?

- Do you believe there was agreement from all stakeholders—particularly within DOE and NNSA—regarding what these terms meant and intended?

- What problems did you encounter in trying to stand up NNSA? Did you see resistance from leaders and staff at DOE? Ambassador, your prepared statement mentions problems with the DOE General Counsel. Can you elaborate? Are there other examples?

- The Rudman Report, which was used as a guide for the NNSA Act, explained that this term, “semi-autonomous,” would mean that the agency would be “strictly segregated from the rest of the department”—which would be “accomplished by having the agency director report only to the Secretary.” Has this definition of the term been put into practice?

Mr. BROOKS. I believe now and believed then that the intent of “separately organized” and “semi-autonomous” was clear. I discovered, however, that it was not clear to all officials in the Department. For example, as I mentioned in my prepared testimony, during the first term of the Bush administration the DOE General Counsel took the view that in order to intelligently exercise his oversight, the Secretary needed essentially the same information from the rest of the Department to evaluate NNSA that he needed for any other bureau or office. Other officials also had difficulty in accepting that their responsibilities did not include supervising NNSA.

I do not believe the intent of the Rudman Report that NNSA be strictly segregated from the rest of the Department has been implemented. As my testimony suggests, I have considerable doubt that it can be implemented under the present governance structure.

Mr. TURNER. 12) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, the NNSA Act establishes a mission set for NNSA that includes broadly supporting nuclear security activities across the U.S. Government (i.e., not just for DOE). How did this “Work For Others” (WFO) function prior to NNSA? Does it work more effectively or more efficiently now? How do NNSA and DOE interface on WFO, or is it entirely in NNSA’s hands?

Mr. BROOKS. I do not have a clear understanding of the functioning of Work for Others (WFO) prior to the establishment of NNSA. There have been periodic problems with managing WFO which reportedly make it difficult for other agencies to employ the NNSA laboratories. I do not believe that this is primarily a problem of the existing governance structure. Rather it is caused by an inappropriate level of review from within the existing organization.

At the time I left NNSA Work for Others was primarily within NNSA’s ability to control with the single exception of the area of intelligence where the DOE Office of Intelligence controlled the process.

Mr. TURNER. 13) Dr. Kuckuck, would you please provide some examples of how the semi-autonomous model for NNSA has not worked? What factors most directly lead you to recommend full autonomy for NNSA?

Dr. KUCKUCK. I believe the most substantive examples are those presented by Amb. Brooks as to DOE's constraints upon the Administrator's ability to establish a less burdensome and costly oversight model for the NNSA. Specific examples have also been clearly presented in the numerous reviews and critiques by prestigious outside review groups.

Mr. TURNER. 14) Ambassador Brooks and Dr. Kuckuck, does having detailed procedures and very prescriptive processes help or hinder safety? What about security? Does having detailed procedures and very prescriptive processes lead to improvements in safety culture or security culture? How does detailed, transaction-level oversight impact efforts to improve safety, security, and associated cultures?

Dr. KUCKUCK. The level of detailed procedures and prescriptive processes should vary with the specific task being performed. While detailed procedures such as checklists may be essential for some highly-complex but repetitive tasks, they can also be counterproductive to good safety in others. There is often a tendency for workers to begin to believe the paperwork "makes them safe" and to stop thinking on their own. In addition, an excess of procedures reduces efficiency and moral. Transaction-level oversight as opposed to oversight of performance against broader principles and objectives, frequently becomes disconnected from the mission as a whole, often tends toward measuring minutia, is an insult to the professional doing the job, is extremely costly and inefficient, and destroys morale.

Mr. TURNER. 15) Ambassador Brooks and Dr. Kuckuck, as mentioned in my prepared opening statement, NNSA's February 2002 report to Congress on how it would operate and be organized contains many indications that NNSA was headed in the right direction—that it was preparing to implement the intent of the NNSA Act. The report lists a series of actions it would take to "lift administrative burdens through streamlining policies, procedures, and staffing." This included an "objective of reducing by half the administrative workload imposed by policies, procedures, and guidance," and plans to "reengineer core business practices and right-size and reinvigorate federal staff."

- Do you believe implementation of this February 2002 plan was successful? Why or why not?

- Was the objective of "reducing by half the administrative workload imposed by policies, procedures, and guidance" achieved? Why or why not?

- Was the Federal staff "right-sized and reinvigorated" as the report indicated?

- Budget documents indicate that NNSA's Office of the Administrator started at around 1,940 employees in FY2002, was reduced to less than 1,700 by FY2005 through streamlining initiatives, but is now back at above 1,900. Why did the Federal workforce numbers bounce back to pre-NNSA levels, despite all of the effort at streamlining?

- All of the reports we read and experts we talk to seem to say that the administrative bureaucracy has only gotten worse. How and where did we get off track?

Dr. KUCKUCK. I do not believe the February 2002 plan was implemented as designed, neither the reduced administrative workload nor Federal staff levels were realized. I believe the NNSA was constrained by bureaucratic barriers within the DOE as well as within NNSA itself. I was not at NNSA after 2002, so cannot comment on variations in the Federal workforce after then. As for "where did we get off track," I believe the transformation of NNSA never really got "on track."

Mr. TURNER. 16) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, NNSA's February 2002 report to Congress states the NNSA and the Secretary of Energy agreed to a streamlined independent oversight process for NNSA. Basically, DOE's Office of Independent Oversight and Performance Assurance would consolidate DOE's oversight of NNSA into a single office.

- Did this independent DOE oversight model work? Why or why not?

- Was this independent DOE oversight model really tried in earnest? Is it still in place? If it is not in place, what is DOE's current structural approach to oversight of NNSA?

Dr. KUCKUCK. I believe the "Independent DOE oversight" model did not work. I believe that DOE blocked the NNSA from issuing its own directives. I believe that senior NNSA officials certainly tried "in earnest" to succeed, but met insurmountable barriers. I am not current on exactly what oversight is in place now, but am of the impression it is essentially still DOE's oversight model.

Mr. TURNER. 17) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, NNSA's February 2002 report to Congress indicates that NNSA was striving to become a true "separately organized" agency, and that "where appropriate, NNSA is seeking autonomy, but it has negotiated . . . the use of the DOE's staff to address NNSA needs, with the proviso that DOE support staff function in accordance with an agreement that ensures that NNSA priorities and standards are the basis of the service."

○ Ambassador, your prepared statement says that you now “regret” relying on DOE staff offices for support because it weakened your ability to establish autonomy—and “establishing such autonomy became a major problem.”

— Please explain why this form of “semi-autonomy” didn’t work.

— Do you believe this type of “semi-autonomy” can work at all, or is full or much stronger autonomy necessary?

○ Dr. Kuckuck and Mr. Aloise, do you believe this concept of semi-autonomy can work, or is full or significantly stronger autonomy needed?

○ Ambassador Brooks and Dr. Kuckuck, NNSA has told us that it is currently subject to 270 separate DOE orders, directives, and rules. Does this fit the definition of “separately organized” and “semi-autonomous” as you understood it during your time in the early years of NNSA?

Dr. KUCKUCK. I cannot answer the question of whether or not “this concept of semi-autonomy can work.” I believe it is abundantly clear that in the NNSA–DOE context it has not worked. There are pros and cons to all models that have been proposed, but I personally believe that experience thus far would suggest it is time to try other than the current model. I believe that unless the NNSA Administrator has chosen to be subject to those 270 DOE orders, this does not constitute “separately organized,” or “semi-autonomous” as I envisioned it in 2000–2002.

Mr. TURNER. 18) Ambassador Brooks and Dr. Kuckuck, in a recent press article, in the Nuclear Weapons Exchange Monitor, Ambassador Brooks is quoted saying “I just think it’s a misunderstanding that the line doesn’t care about safety because you can’t do your mission if you have safety problems . . . I think that the idea that if the NNSA organization doesn’t have DOE’s Office of Health, Safety, and Security looking over its shoulder [NNSA] will not pay enough attention to safety is wrong.” Do you think NNSA’s safety program is sufficiently mature without DOE staff—but still with independent oversight from the Defense Nuclear Facilities Safety Board and the Inspector General?

Dr. KUCKUCK. I believe NNSA’s safety program (AND SAFETY CULTURE) are quite mature without DOE staff. But, obviously, there still must be independent oversight. I do not believe that the Defense Nuclear Facilities Safety Board has been able to provide a properly balanced oversight function in this role. I am unaware of the level of safety expertise that resides in the office of the Inspector General. I would believe that the NRC or an NRC-like model might be most appropriate for NNSA.

Mr. TURNER. 19) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, we’ve heard from many experts that the status quo at NNSA and DOE is unsustainable. We’ve heard ominous warnings from the National Academies of Science that these governance and management problems are threatening the quality of science and engineering at the nuclear weapons labs. We’ve heard from DOD that the costs of key nuclear infrastructure modernization projects are being driven up dramatically by excessive oversight and regulation that provide minimal safety benefit. And now, with this latest budget request, we’re seeing key programs tossed overboard because we don’t have enough money to pay for both the bureaucracy and the mission—and apparently the bureaucracy is a higher priority.

○ We saw how dysfunctional DOE was in the 1990s—that’s why we created NNSA. What do you think the future will hold if we just continue under the current status quo?

Dr. KUCKUCK. I tend to agree with the warnings you are receiving from these prestigious outside reviewers.

Mr. TURNER. 20) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, as we look to address the continuing challenges at NNSA and DOE through legislation and actions in the executive branch, what lessons should we learn from the NNSA Act and its implementation? What should be the key messages from the past and how might they apply to the problems at NNSA and DOE that all of these reports talk about today?

Dr. KUCKUCK. I suspect there are many elements that have contributed to the less-than-intended outcome of the NNSA Act, including: competing oversight jurisdictions within the Congress; lack of independence from the DOE; bureaucracy within the NNSA itself; too many Federal staff to “make work;” entitlement of outside oversight functions to become de-facto regulators without a balanced consideration of mission or resources.

Mr. TURNER. 21) Ambassador Brooks and Dr. Kuckuck, based on your experiences in the early NNSA and since then, would you please comment on the reforms to NNSA contained in the House-passed FY13 defense authorization bill (H.R.4310)? Will it address the well-known and long-standing problems?

○ Your testimony indicates you think they may not be aggressive enough—that full autonomy is needed for NNSA. Do the reforms in the bill not go far enough?

Can they be effective without strong leadership from the executive branch? Are there gaps we are not addressing?

I believe that H.R.4310 clearly indicates Congressional intent to improve upon the current and failing NNSA semi-autonomous model created by the NNSA Act. It is a step in the right direction, but may not be enough—necessary, but not sufficient. For example, the bill attempts to limit NNSA regulations in non-nuclear health and safety to OSHA standards. This allows for NNSA to interpret the OSHA standard and issue a separate NNSA regulation. Why have NNSA regulations at all? Why not subject NNSA facilities to OSHA oversight and eliminate the NNSA “middle man”? Much of the burdensome oversight being objected to comes from such middlemen and their interpretations. The bill attempts to force the DNFSB into a more collaborative, balanced oversight model. Rather than try to reform the DNFSB, why not take positive steps to move nuclear oversight to the NRC? The bill attempts to force partnership and communication between the Secretary of Energy and the Laboratory Directors and Plant Managers. Why have this forced relationship, versus allowing relationships to build naturally in a fully independent NNSA? Why encumber the chances of success with the burdens of overcoming the legacy of past failures?

Dr. KUCKUCK. It is true that the bill cannot legislate leadership, trust, partnership and good judgment, but the bill can definitely legislate an environment that will attract, encourage and foster these qualities. It seems to me that there is a greater chance of success in this endeavor by starting from a clean sheet of paper than by trying to reform embedded bureaucracies.

Mr. TURNER. 22) Ambassador Brooks and Dr. Kuckuck, this subcommittee has reviewed the dozens of reports in the 1980s and 1990s that led to creation of NNSA. They all offer clear descriptions of the problems at DOE, including recurring security problems and gross mismanagement. Senior DOE leadership even embarked on several reform initiatives—but none were effective at fixing the organization. Why was senior DOE leadership unable to reform the organization? Why did it require Congress to step in and try to fix a problem that was so widely recognized?

Dr. KUCKUCK. I am not in a position to answer questions pertaining to DOE leadership in the 1980s and 1990s, but observing the barriers to reform that have existed in the last decade I could imagine that many existed then as well.

Mr. TURNER. 23) Ambassador Brooks and Dr. Kuckuck, in the early days of NNSA you were both in senior positions responsible for implementing the NNSA Act. With hindsight, what are the strengths and weaknesses of the NNSA Act?

- Was the intent of the “separately organized” and “semi-autonomous” nature of NNSA clear in the statute?

- Do you believe it was clearly understood within DOE and the new NNSA?

- Do you believe there was agreement from all stakeholders—particularly within DOE and NNSA—regarding what these terms meant and intended?

- What problems did you encounter in trying to stand up NNSA? Did you see resistance from leaders and staff at DOE? Ambassador, your prepared statement mentions problems with the DOE General Counsel. Can you elaborate? Are there other examples?

- The Rudman Report, which was used as a guide for the NNSA Act, explained that this term, “semi-autonomous,” would mean that the agency would be “strictly segregated from the rest of the department”—which would be “accomplished by having the agency director report only to the Secretary.” Has this definition of the term been put into practice?

Dr. KUCKUCK. I believe the greatest strength of the NNSA Act, at least in its intent, was some sort of autonomy for NNSA. Clearly, this “semi autonomous” model did not work within DOE. There was not agreement by all parties as to what “semi autonomous” meant. Amb. Brooks has testified more about this than I am able to offer.

Mr. TURNER. 24) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, the NNSA Act establishes a mission set for NNSA that includes broadly supporting nuclear security activities across the U.S. Government (i.e., not just for DOE). How did this “Work For Others” (WFO) function prior to NNSA? Does it work more effectively or more efficiently now? How do NNSA and DOE interface on WFO, or is it entirely in NNSA’s hands?

Dr. KUCKUCK. I have had little direct experience with WFO and can not comment on this.

Mr. TURNER. 25) Mr. Aloise, do you agree with Ambassador Brooks when he says, with respect to today’s situation at NNSA compared to before NNSA was created, “Security is clearly better, safety is no worse, but we haven’t removed the burden on the labs. Nuclear safety and the Defense [Nuclear Facilities Safety] Board, the

relationship is not—was not when I was there—working well”? Has security improved? Has safety? Has the burden on the labs and plants been lessened? What is your assessment of the relationship between NNSA and the DNFSB and the effectiveness of the DNFSB?

Mr. ALOISE. As we stated in our June 2012 testimony, NNSA has established an effective headquarters security organization, and this organization has made significant progress in resolving many of the security weaknesses we had identified. [GAO, *Modernizing the Nuclear Security Enterprise: Observations on the Organization and Management of the National Nuclear Security Administration*, GAO-12-867T, (Washington, D.C.: June 27, 2012).] However, in our view, the recent serious security incident at the Y-12 site demonstrates that NNSA faces challenges in sustaining security improvements.

Our work has also raised questions about the independence of DOE’s oversight of safety. Furthermore, the results of DOE’s recent safety reform are unclear because DOE did not determine if the original directives were burdensome, and the reform did not fully address safety concerns we and others have identified. [GAO, *Nuclear Safety: Department of Energy Needs to Strengthen Its Independent Oversight of Nuclear Facilities and Operations*, GAO-09-61 (Washington, D.C.: Oct. 23, 2008) and *Nuclear Safety: DOE Needs to Determine the Costs and Benefits of Its Safety Reform Effort*, GAO-12-347 (Washington, D.C.: Apr. 20, 2012).] We have not assessed the regulatory burden on the labs and plants.

We also have not formally assessed the relationship between NNSA and the Defense Nuclear Facilities Safety Board, nor the board’s effectiveness. We stated that DOE must decide how to respond to the board recommendations and, to date, the agency has generally accepted these recommendations.

Mr. TURNER. 26) Mr. Aloise, in their prepared statements, Ambassador Brooks and Dr. Kuckuck recommend full autonomy for NNSA. We also have many, many reports by independent, bipartisan commissions and nonpartisan study groups that recommend the same. But you advocate against “dramatic changes.” Why do you disagree with all of these other experts?

Mr. ALOISE. As we said in our June 2012 testimony, we do not believe that dramatic changes are warranted because we are uncertain whether such significant organizational changes to increase NNSA’s independence would produce the desired effect. [GAO-12-867T] In our view, few, if any, of NNSA’s problems in the areas of safety, security, and project management stem from the organizational relationship between NNSA and DOE. A dramatic organizational change, such as making NNSA an independent agency, may be disruptive. Currently, DOE provides NNSA with a large number of services, such as personnel and headquarters building security, office space, payroll, and information technology. NNSA would have to devote substantially more effort to create and then maintain these overhead functions.

Mr. TURNER. 27) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, NNSA’s February 2002 report to Congress states the NNSA and the Secretary of Energy agreed to a streamlined independent oversight process for NNSA. Basically, DOE’s Office of Independent Oversight and Performance Assurance would consolidate DOE’s oversight of NNSA into a single office.

○ Did this independent DOE oversight model work? Why or why not?
 ○ Was this independent DOE oversight model really tried in earnest? Is it still in place? If it is not in place, what is DOE’s current structural approach to oversight of NNSA?

Mr. ALOISE. Without performing additional audit work, we cannot determine if the oversight model discussed in the 2002 report was fully implemented. The Secretary of Energy created the Office of Health, Safety, and Security (HSS) in October 2006, incorporating most of the responsibilities from the former Office of Environment, Safety, and Health and the Office of Safety and Security Performance Assurance. HSS is the only office within DOE that oversees these programs without influence from the program offices, thus avoiding the potential conflict of interest inherent with program office oversight and helping to ensure public confidence in the Department’s ability to self-regulate nuclear safety and security. As we reported in October 2008, HSS has fallen short in providing effective independent oversight of nuclear safety. [GAO-09-61.] For example, the office’s ability to function independently was limited because it has no role in reviewing the technical analysis that helps ensure safe design and operation of nuclear facilities. We recommended that if DOE does not take appropriate action to meet these criteria for independent oversight, then the Congress should consider the following:

- permanently establishing in law the responsibilities of HSS, or
- shifting DOE to external regulation by:

- providing the resources and authority to the Defense Nuclear Facilities Safety Board to oversee all DOE nuclear facilities and to enforce DOE nuclear safety rules and directives, or
- providing the resources and authority to the Nuclear Regulatory Commission to externally regulate all or just newly constructed DOE nuclear facilities.

DOE and HSS took actions in response to our report's recommendations, including placing an emphasis on assessing the design of new nuclear facilities before they are constructed and establishing site leads within HSS responsible for each of DOE's sites. Despite these actions to strengthen independent oversight of nuclear safety, we reported in April 2012 that some of these actions may undermine the safety culture at DOE nuclear facilities and may weaken HSS oversight responsibilities. [GAO-12-347.] For example, DOE's reform effort did not fully address safety concerns we and others have identified in three key areas: (1) quality assurance, (2) safety culture, and (3) Federal oversight. Regarding quality assurance, DOE strengthened its quality assurance directive by clarifying that contractors must follow specific industry quality assurance standards, but quality assurance problems persist. For example, DOE proposed a nearly \$250,000 fine against a contractor in July 2011 after identifying quality assurance problems in an incident where a worker punctured his hand with a sharp object contaminated with plutonium. With regard to safety culture, DOE revised its Integrated Safety Management directives to attempt to strengthen the safety culture at its sites, but DOE removed requirements for contractors to follow the directives because contractors already had to comply with safety management requirements in Federal regulation. Defense Nuclear Facilities Safety Board officials raised concerns that the requirements in Federal regulation are less detailed and, as a result, contractors may not implement safety practices as rigorously as if they were subject to the more specific requirements in DOE's directives. Finally, regarding Federal oversight, DOE revised its approach to place greater emphasis on having its independent oversight staff review safety design documents before facilities are constructed, rather than after they are built. Other changes, however, such as requiring oversight staff to coordinate their assessment activities with DOE site office and contractor staff, raise concerns about the oversight staff's ability to provide a critical review of safety at DOE's sites that is independent from DOE site office and contractor staff.

Mr. TURNER. 28) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, NNSA's February 2002 report to Congress indicates that NNSA was striving to become a true "separately organized" agency, and that "where appropriate, NNSA is seeking autonomy, but it has negotiated . . . the use of the DOE's staff to address NNSA needs, with the proviso that DOE support staff function in accordance with an agreement that ensures that NNSA priorities and standards are the basis of the service."

○ Ambassador, your prepared statement says that you now "regret" relying on DOE staff offices for support because it weakened your ability to establish autonomy—and "establishing such autonomy became a major problem."

— Please explain why this form of "semi-autonomy" didn't work.

— Do you believe this type of "semi-autonomy" can work at all, or is full or much stronger autonomy necessary?

○ Dr. Kuckuck and Mr. Aloise, do you believe this concept of semi-autonomy can work, or is full or significantly stronger autonomy needed?

○ Ambassador Brooks and Dr. Kuckuck, NNSA has told us that it is currently subject to 270 separate DOE orders, directives, and rules. Does this fit the definition of "separately organized" and "semi-autonomous" as you understood it during your time in the early years of NNSA?

Mr. ALOISE. In 2007, we examined the issues that hindered NNSA from functioning as a separately organized agency within DOE. [GAO, National Nuclear Security Administration: Additional Actions Needed to Improve Management of the Nation's Nuclear Programs, GAO-07-36, (Washington, D.C.: Jan. 19, 2007).] At the time of our 2007 review, we identified several factors contributing to NNSA's lack of autonomy. First, DOE and NNSA did not have a useful model to follow for establishing a separately organized agency in DOE. Second, the January 2000 NNSA implementation plan, required by the NNSA Act, did not define how NNSA would operate as a separately organized agency within DOE. As a result, although some NNSA programs had set up procedures for interacting with DOE, other programs had not, resulting in organizational conflict. Even where formal procedures were developed, interpersonal disagreements had hindered effective cooperation.

We recommended that, to ensure that NNSA functions as a separately organized agency, the Secretary of Energy and the Administrator, NNSA, should clearly define NNSA's status as a separately organized agency within the Department. In his 31 USC Section 720 response to our report, the Deputy Secretary of Energy stated that

he did not concur with this recommendation. He stated that elements of the Department and the NNSA had executed memorandums of understanding specifying how certain departmentwide functions would be performed while respecting the statutory insulation of NNSA personnel. He also stated that the Department would consider issuing circumstance-specific guidance where required to correct misperceptions about the effect of the NNSA's act limitations. Since then, we have identified instances that indicate the DOE–NNSA relationship has become less clear. For example, DOE recently announced that DOE's Environmental Management program will begin to report to the NNSA Administrator, who simultaneously is an Under Secretary for Energy. As a result, we have left this recommendation open and still believe that further clarification of the NNSA–DOE relationship is needed.

Mr. TURNER. 29) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, we've heard from many experts that the status quo at NNSA and DOE is unsustainable. We've heard ominous warnings from the National Academies of Science that these governance and management problems are threatening the quality of science and engineering at the nuclear weapons labs. We've heard from DOD that the costs of key nuclear infrastructure modernization projects are being driven up dramatically by excessive oversight and regulation that provide minimal safety benefit. And now, with this latest budget request, we're seeing key programs tossed overboard because we don't have enough money to pay for both the bureaucracy and the mission—and apparently the bureaucracy is a higher priority.

○ We saw how dysfunctional DOE was in the 1990s—that's why we created NNSA. What do you think the future will hold if we just continue under the current status quo?

Mr. ALOISE. GAO agrees that the status quo is unacceptable. At the same time, we believe that the current situation can be improved without separating NNSA completely from DOE. In our view, the problems we continue to identify in the nuclear security enterprise are not caused by excessive oversight but instead result from ineffective oversight and poor contractor management. We believe that NNSA has made progress in improving its management practices, and we will continue to monitor NNSA's efforts to improve performance.

Mr. TURNER. 30) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, as we look to address the continuing challenges at NNSA and DOE through legislation and actions in the executive branch, what lessons should we learn from the NNSA Act and its implementation? What should be the key messages from the past and how might they apply to the problems at NNSA and DOE that all of these reports talk about today?

Mr. ALOISE. In our view, a retrospective “lessons-learned” evaluation of the creation of and implementation of NNSA would be valuable, but we have not conducted audit work that is sufficient to answer this question.

Mr. TURNER. 31) Mr. Aloise, a series of GAO reports in the 1990s were highly critical of DOE's management of the nuclear weapons complex—particularly in the areas of security, contract management, and clarity in roles, responsibilities, and authorities. For instance, in 1993 GAO said “DOE has significant management problems, as reported by many oversight groups and acknowledged by agency leadership,” and “management of the nuclear weapons complex and the national laboratory system . . . [is] in disarray.” The reports contributed to the momentum that ultimately resulted in creation of the NNSA in 2000.

○ Was it within DOE's authority to fix these problems? If so, why didn't it?

○ Why did it require Congress to step in and fix a problem that was so widely recognized?

Mr. ALOISE. DOE and NNSA and their predecessor organizations generally have the authority to address the issues that our reports identified over the years. We have not comprehensively assessed why these agencies have not always done so. It is within Congress created NNSA to address management problems, which included serious security incidents involving espionage and the potential compromise of highly classified nuclear data. Similarly, in the late 1980s, Congress established the Defense Nuclear Facilities Safety Board in response to long-standing safety concerns at DOE's sites.

Mr. TURNER. 32) Mr. Aloise, in 1998, one year before the NNSA Act was signed into law, GAO analyzed DOE's progress in addressing the dozens of recommendations made by various advisory groups to improve and streamline management of DOE's national laboratories. After analyzing the actions DOE told GAO it was pursuing to implement these recommendations, GAO said that, “Most of the actions DOE reported to us are process oriented, incomplete, or only marginally related to past recommendations for change. For example, creating new task forces and strengthening old ones may be good for defining problems, but these measures can-

not force decisions or affect change.” Generally, how do we get an organization to move from these sorts of fuzzy measures and start taking real, active steps to force change?

Mr. ALOISE. Generally speaking, cultural change is needed. We have not performed an organizational culture assessment of NNSA. However, organizational culture experts generally agree that an organization’s beliefs and values affect the behavior of its members. In previous work, we found that (1) experts agree that an organization’s decision to change its culture is generally triggered by a specific event or situation and is a long-term effort that takes at least 5 to 10 years to complete and (2) some corporate officials believe that the two key techniques for a successful culture change are the top management’s total commitment to the change and training that promotes and develops skills related to the company’s desired values or beliefs. [GAO: Organizational Culture: Techniques Companies Use to Perpetuate or Change Beliefs and Values, GAO/NSIAD-92-105, (Washington, D.C.: Feb. 27, 1992).]

Mr. TURNER. 33) Mr. Aloise, in its 2007 report, GAO said “management problems continue, in part, because NNSA and DOE have not fully agreed on how NNSA should function within the department as a separately organized agency. This lack of agreement has resulted in organizational conflicts that have inhibited effective operations.”

- What were some of the organizational conflicts? How did they inhibit effective operations?

- What evidence led GAO to make this finding? What did GAO suggest be done to resolve it?

- Has this problem been resolved? Do you believe NNSA and DOE have agreed upon—and implemented—a coherent and rational management structure for how NNSA should function within DOE as a “separately organized” agency, as required by the NNSA Act?

- The Rudman Report, which was used as a guide for the NNSA Act, explained that this term, “semi-autonomous,” would mean that the agency would be “strictly segregated from the rest of the department”—which would be “accomplished by having the agency director report only to the Secretary.” Has this definition of the term been put into practice?

Mr. ALOISE. Regarding organizational conflict, our January 2007 report provides detail on the conflict between DOE and NNSA over the organization and conduct of counterintelligence. [GAO-07-36, pp. 39-44.] More specifically, we found a lack of formal agreement between DOE and NNSA in a number of key areas—budgeting, procurement, information technology, management and administration, and safeguards and security—which resulted in organizational conflicts that inhibited effective operations. Even where formal procedures were developed, interpersonal disagreements hindered effective cooperation. For example, our report described the conflict between NNSA and DOE counterintelligence officials who disagreed over (1) the scope and direction of the counterintelligence program, (2) their ability to jointly direct staff in the headquarters counterintelligence program offices, (3) the allocation of counterintelligence resources, (4) counterintelligence policy making, and (5) their roles and responsibilities in handling specific counterintelligence matters. Subsequently, Congress amended the NNSA Act to consolidate DOE’s and NNSA’s counterintelligence programs under DOE.

In terms of evidence, we reviewed the NNSA Act as well as two House of Representatives reports in 2000 on the act’s implementation. Because the establishment of NNSA as a separately organized agency in DOE was a key provision of the NNSA Act, we met with officials from NNSA headquarters; the NNSA Service Center; the NNSA site offices; and DOE offices where NNSA and DOE need to interact, including DOE’s Office of Intelligence and Counterintelligence (formerly the Office of Counterintelligence); Chief Financial Officer; Chief Information Officer; General Counsel; and Human Capital Management. To understand how NNSA and DOE were intended to interact, we interviewed officials and reviewed documents, such as DOE’s January 2000 implementation plan for NNSA. We also interviewed officials with the Department of Commerce’s National Oceanic and Atmospheric Administration, the Defense Advanced Research Projects Agency, the Defense Threat Reduction Agency, and the Department of Transportation’s Federal Aviation Administration to obtain their views on the reporting relationships that need to be in place for an entity designated as a “separately organized agency” to succeed. We contacted the first two agencies cited because they were identified in the Defense Science Board’s June 1999 report as good models of a separately organized agency. We contacted the latter two agencies cited after consultation with staff in your offices. We also interviewed former NNSA and DOE officials, including the first and second Administrators and the Deputy Secretary of Energy, who helped establish NNSA, to get their

perspective on the difficulties involved in creating a separately organized agency within a department.

In regard to semi-autonomy, the Secretary of Energy disagreed with our recommendation that, to ensure that NNSA functions as a separately organized agency, the Secretary of Energy and the Administrator, NNSA, should clearly define NNSA's status as a separately organized agency within the Department. In his 31 USC Section 720 response to our report, the Deputy Secretary of Energy stated that he did not concur with this recommendation. He stated that elements of the Department and NNSA had executed memorandums of understanding specifying how certain departmentwide functions would be performed while respecting the statutory insulation of NNSA personnel. He also stated that the Department will consider issuing circumstance-specific guidance where required to correct misperceptions about the effect of the NNSA Act's limitations. Since we received the response, there have been instances where the DOE/NNSA relationship has become less clear. For example, DOE recently announced that DOE's Environmental Management program will begin to report to the NNSA Administrator, who simultaneously is an Under Secretary for Energy. As a result, we have left this recommendation open and still believe that further clarification of the NNSA-DOE relationship is needed.

Mr. TURNER. 34) Mr. Aloise, GAO had noted long before NNSA was established that DOE program managers and Federal employees did not have the technical knowledge to effectively oversee the complex programs of the nuclear security labs. Did the NNSA Act address this concern effectively?

○ Ambassador Brooks and Dr. Kuckuck, do you agree this is or was a problem? Did the NNSA Act help attract top-quality leaders and managers to the Federal side?

Mr. ALOISE. Yes, we believe the NNSA Act addressed this concern. As we reported in April 2012, through the NNSA Act and other actions, DOE and NNSA sought, and were granted, authorities by Congress to offer higher pay to staff primarily in certain engineering and science fields. [GAO, *Modernizing the Nuclear Security Enterprise: Strategies and Challenges in Sustaining Critical Skills in Federal and Contractor Workforces*, GAO-12-468 (Washington, D.C.: Apr. 26, 2012).] Specifically, to help NNSA retain more experienced competitive service employees with critical skills—that is, employees in regular civil service positions—Congress granted exceptions to normal hiring regulations, including salary caps, under three excepted service authorities. First, under the Department of Energy Organization Act the Secretary of Energy is granted special excepted service hiring authorities to hire up to 200 highly skilled scientific, engineering, professional, and administrative individuals to upgrade the Department's technical and professional capabilities. NNSA can use this authority in some cases to hire senior-level employees from outside the Government or difficult-to-hire administrative staff. According to NNSA officials, the agency currently employs about 50 such individuals. Second, under the National Defense Authorization Act, the Secretary of Energy is also granted special excepted service hiring authorities to hire up to 200 highly skilled individuals—typically scientists, technicians and engineers with skills related to and necessary for the operation of nuclear facilities. According to NNSA officials, the agency currently employs about 100 such individuals. Third, under the National Nuclear Security Administration Act, NNSA may hire up to 300 highly qualified scientists, engineers, and other technically skilled workers needed to support the missions of NNSA under similar excepted service hiring authorities. According to NNSA officials, NNSA has used this authority to employ about 280 highly skilled individuals. NNSA officials told us that all of these flexibilities are useful and help NNSA compete with the Nuclear Regulatory Commission and national laboratories.

While DOE and NNSA have used these authorities and we have found performance improvements, significant deficiencies remain. We have attributed these ongoing deficiencies to, among other things, inadequate oversight and poor contractor management. Some of these deficiencies may also be attributed to not having enough technically skilled Federal officials, but we have not conducted a formal evaluation of the extent to which DOE and NNSA employees possess adequate technical knowledge.

Mr. TURNER. 35) Ambassador Brooks, Dr. Kuckuck, and Mr. Aloise, the NNSA Act establishes a mission set for NNSA that includes broadly supporting nuclear security activities across the U.S. Government (i.e., not just for DOE). How did this "Work For Others" (WFO) function prior to NNSA? Does it work more effectively or more efficiently now? How do NNSA and DOE interface on WFO, or is it entirely in NNSA's hands?

Mr. ALOISE. We are currently starting a review of the work for others (WFO) program in response to a request from the House Energy and Commerce Committee and plan to complete this work in 2013.

QUESTIONS SUBMITTED BY MS. SANCHEZ

Ms. SANCHEZ. 36) Do you think that it would have been a better decision to place NNSA nuclear facilities under Nuclear Regulatory Commission regulation? Why or why not?

Mr. BROOKS. I believe that such a step should be considered but that the ramifications need careful study. That is why the paper I prepared for the Strategic Posture Commission advocated a three year transition. Experience in the United Kingdom (which I acknowledge has a different regulatory culture) has shown a civil regulator can be effective in regulating military facilities. I believe the existing Defense Nuclear Facilities Safety Board is inherently subject to mission and requirements creep. I note that the MOX Fuel Fabrication Facility now under construction is regulated by the Nuclear Regulatory Commission (NRC). While this facility has had significant problems during construction, I am unaware of any evidence that NRC regulation has been the cause.

Ms. SANCHEZ. 37) Some have asserted that NNSA and its contractors have reached a mature and high level of safety performance. However, just in the past year, NNSA site managers have needed to issue a number of letters to their contractors to correct significant safety deficiencies.

Examples include:

- a. Letter from the LANL Manager to LANS dated September 16, 2011, regarding the safety of operations at LANL
- b. Letter from the Pantex Manager to B&W Pantex dated December 2, 2011, regarding the quality and safety of work at Pantex
- c. Letter from the Pantex Manager to B&W Pantex dated May 29, 2012, regarding deficiencies in safety-related fire suppression systems
- d. Letter from the Y-12 Manager to B&W Y-12 dated January 26, 2012, regarding safety risks from hazardous energy sources
- e. Letter from the Y-12 Manager to B&W Y-12 dated May 21, 2012, regarding deficiencies in isolating hazardous energy sources (the lockout/tagout process)

So, given the number and significance of ongoing safety deficiencies noted in these letters, do you believe that NNSA and its contractors have reached a mature, conservative level of safety performance with regard to complex, nuclear operations, maintenance and design/construction of new facilities such that they no longer need the oversight/regulation functions currently performed by DOE? If so, what data or metrics are you aware of that support your position?

Mr. BROOKS. I am not able to comment on the details of current actions within NNSA. In my experience there will always be safety problems and thus there will always be in need for oversight. The examples you cite appear to me to be cases where NNSA was exercising that oversight. It is not clear why duplication of oversight by Departmental elements other than NNSA would make the situation better.

Ms. SANCHEZ. 38) Mr. Aloise noted in his testimony that "Significant improvement is still needed especially in NNSA's management of its major projects and contracts."

Should contractors subcontract major construction projects or should NNSA contract and manage these directly? As an example, NNSA in recent years had a pilot program consisting of NNSA contracting directly for the repair of roves across the nuclear complex which was a successful effort but was discontinued.

Mr. BROOKS. The example you cite for repair of roofs was conducted under a "get well" program to compensate for neglected maintenance during the 1990s. NNSA achieved substantial savings and efficiencies by centrally managing this essentially similar work that was conducted at multiple sites. While I am proud of this effort, I do not believe it has a direct bearing on the question of major construction projects at a single site.

I do not regard myself as an expert in construction management. Nonetheless, the number of problems that have occurred with allowing major construction projects to be managed by the operating contractors at plants and laboratories is disturbing. I believe that the skills to operate a national laboratory or production plant and the skills to oversee a construction project are not the same. Thus I believe it may be useful for NNSA to consider contracting separately for construction of major facilities. I do not, however, believe that this is an appropriate subject for legislation since NNSA facilities tend to be unique and therefore the circumstances of their construction are unique as well.

Ms. SANCHEZ. 39) What is the role for independent safety oversight? What is the appropriate risk level for hazardous and nuclear operations?

Mr. BROOKS. The role of independent safety oversight of hazardous and nuclear operations is to protect the public and the workers involved from harm. Independent

safety oversight can do this only when it is verifying that operations are being conducted safely but is not seeking to remove the basic responsibility for their actions from those performing the operations.

The changes in oversight that I recommended in my testimony and that I sought to implement when I was NNSA Administrator were not intended to eliminate oversight but to make it more efficient. In particular, I believe that multiple levels of oversight, not all of which are responsive to line management are less likely to achieve the safe operations that must be our constant goal.

Ms. SANCHEZ. 40) Who should balance risk and mission? Should it be NNSA or the labs?

Mr. BROOKS. Both have an important role. The facilities within NNSA's National Security Enterprise are owned by the Government and thus the ultimate responsibility for balancing risk and mission must reside with Federal officials. At the same time, the technical knowledge necessary to make sound decisions is usually found in the organizations actually running these facilities. This leads to the notion that Federal officials should oversee the balancing of risk and mission with heavy input from the laboratories and plants.

Ms. SANCHEZ. 41) Do you believe it's prudent to remove independent oversight from either NNSA or its contractors?

Mr. BROOKS. No. That is why my efforts as Administrator were directed not at limiting independent oversight but at making it more effective and less burdensome.

Ms. SANCHEZ. 42) Should the NNSA Administrator, as is the case in Naval Reactors and as is the case for the Ministry of Defence in the UK, have the authority to lose confidence in any contractor employee from the director to lower levels, to increase accountability from the laboratories?

Mr. BROOKS. Yes and I believe existing contracts provide that authority although its very existence usually makes it unnecessary to employ.

Ms. SANCHEZ. 43) Can you comment on the increase in fees post-privatization of the labs? With such a disparity in fees paid to the labs, with Sandia National Laboratory receiving a third of the fee that LANL and LLNL receive, do you think the mission or performance change depending on the fee level?

Mr. BROOKS. First, I should note that Sandia National Laboratory has always been operated by a for-profit entity. The increased fees we offered in connection with the competition to manage the Los Alamos National Laboratory were intended to attract operating partners with experience in industrial management of complex high hazard facilities. We hoped that the increased fee would be balanced by greater efficiency and the elimination of costly problems, thus resulting in a net long term savings to the Government. From recent discussions, I believe we are beginning to see such a result, although it has taken us substantially longer than we hoped or expected. When the Congress directed that NNSA compete the operating contract for the Lawrence Livermore National Laboratory, we chose a similar approach for consistency.

All three NNSA national laboratories have always been headed by experienced scientists, usually with long careers at those laboratories. I do not believe that the attitude of such leaders toward mission and performance is dependent on the size and structure of the annual fee. My observations during my tenure have convinced me that what motivates laboratory directors is a sense of mission and the professional reputation of their laboratories. Thus, the increased fees should properly be seen as a tool induce the industrial partners to provide skill sets to assist the laboratory director that would not otherwise be available. This was our philosophy during both the Los Alamos and Livermore competitions. As noted above, we are only now beginning to see indications that it was correct.

Ms. SANCHEZ. 44) How do we instill a culture of trust and expertise going forward?

Mr. BROOKS. The most important factor in instilling such a culture is leadership by laboratory directors, plant managers, and Federal officials. Congress can facilitate such a leadership by mandating an organizational structure that has clear lines of responsibility, authority, and accountability. It can also help by avoiding the tendency to call for more detailed transactional level supervision when problems do occur.

Ms. SANCHEZ. 45) How do you improve lines of authority to avoid conflicting directives?

Mr. BROOKS. I know of no way to do this except by mandating a single chain of command and reducing the ability of organizations not responsible to the Administrator to issue directives. I recognize this places a huge responsibility on the Administrator.

Ms. SANCHEZ. 46) There have been a number of changes in the past year, including DOE streamlining duplicative regulations and NNSA moving the site manager

reporting authority to the office of the Administrator. Can you share your insights and comment on these management and governance changes?

Mr. BROOKS. I need to stress that I have only limited knowledge of today's detailed procedures within the Department of Energy. Based on my understanding, both of these changes are for the better. They are almost certainly not, however, sufficient. Eliminating duplicative regulations (and even more important, conflicting regulations) is important but ultimately it is the content of the remaining regulations and the manner of their implementation that matters.

I established what I called the "strong site manager" model where the site managers reported directly to the office of the Administrator. I was disappointed when the Department directed me to alter these reporting relationships. I am therefore obviously pleased to see that they are being reestablished. At the same time, they will only improve management if the Site Manager is once again the route into the plants and laboratories for all operational direction. The key is that NNSA must speak to its contractor partners with one voice.

Ms. SANCHEZ. 47) What mechanisms would you recommend to drive down costs and ensure efficiencies?

Mr. BROOKS. I do not believe there is a single simple solution to this problem. Further, it is important to recognize that NNSA facilities and programs are often complex and one-of-a-kind. In such programs, it is inherently difficult to manage costs. The two most important variables appear to me to be strong, well-trained and well-qualified managers and predictable funding. The first is fundamentally a responsibility of the Executive branch, while the second is a shared responsibility between the Executive and Congress.

Ms. SANCHEZ. 48) There are efforts, including in the House NDAA to reduce the number of NNSA FTEs as progress is made to streamline management. Could you comment on the risk and benefits of reducing the number of FTEs at NNSA. If such reductions occur, should we see a proportional number of efficiencies at labs and cost savings at the labs?

Mr. BROOKS. In general I find reducing FTEs in anticipation of streamlined management to be a blunt instrument of questionable utility. There is no assurance that the right billets will be eliminated. I do not believe it is possible to predict in advance whether or not the mere fact of an FTE reduction will lead to laboratory efficiencies.

Ms. SANCHEZ. 49) Do you believe that NNSA and their contractors can accomplish required levels of oversight/self-regulation for complex high-hazard nuclear operations through a system of performance-based self-assessments by the contractor and NNSA with no transactional oversight? If you believe performance-based oversight should be employed, what level of accidents, if any, do you believe would require a reinstatement of transactional oversight for complex high-hazard nuclear operations?

Mr. BROOKS. I do not believe that the Federal Government can simply take a hands-off approach and depend entirely on contractor self-assessment. At the same time, I believe that transactional oversight is exceptionally likely to lead to micro-management and to shift the presumed responsibility from the contractors. Thus I believe in a performance-based approach such as that I was trying to implement during my tenure.

I do not believe that one can answer in the abstract questions about response to accidents. The goal is not to have such accidents in the first place. The issue for the Congress and NNSA is what procedures are most likely to lead to this result.

Ms. SANCHEZ. 50) What challenges remain to improve accountability and cost effectiveness?

Mr. BROOKS. As I have noted elsewhere, I lack detailed knowledge of the current status of NNSA and thus I believe it is inappropriate for me to attempt to judge how far they have come or what the most important remaining challenges are.

Ms. SANCHEZ. 51) In 2011, the Department of Energy Inspector General issued a report entitled "Management Challenges at the Department of Energy" which recommended eliminating duplicative functions at the NNSA, including General Counsel, Chief Information Officer, Human Resources, Public Affairs. What are the benefits and risks of this approach? What is the cost of having separate functions?

Mr. BROOKS. I believe it is more correct to say that the Inspector General recommended studying such a consolidation in order to meet the anticipated funding challenges of the coming years. The Inspector General's report noted the view (which it neither endorsed nor refuted) that the separate functions made NNSA more efficient.

The principal benefit of the existing functions is to enhance the ability of NNSA to function as a separately organized entity, as the Congress directed. As I indicated in my testimony, the more NNSA is required to draw on support from the larger

Department, the less clear its organizational independence becomes. Thus the specific changes are surrogates for the broad question of whether a separately organized NNSA (either inside or outside of the Department of Energy) remains in the national interest. I believe it does.

The principal costs are only financial in cases where the broader Department decides that it is unwilling to accept NNSA's independent action and seeks to duplicate it. That this sometimes happens. On the other hand, the amount of effort required to process personnel actions does not change significantly whether those performing such actions are in one organization or two.

The most significant cost of the present arrangement, however, is the need to coordinate in order that the Department may speak with a consistent voice. One of the Secretaries of Energy for whom I worked, was particularly concerned with this aspect. I acknowledge that this is in fact a real cost but I believe that the benefits of maintaining a separately organized NNSA are worth paying that cost.

Ms. SANCHEZ. 52) Do you think that it would have been a better decision to place NNSA nuclear facilities under Nuclear Regulatory Commission regulation? Why or why not?

Dr. KUCKUCK. It appears to me that the oversight model of our civilian nuclear industry functions in a considerably more balanced manner than does the DOE oversight of our nuclear weapons complex. I do not see any added value in the latter, but do see considerable added cost. I believe the NRC or an NRC-like model could be preferable for the weapons complex.

Ms. SANCHEZ. 53) Some have asserted that NNSA and its contractors have reached a mature and high level of safety performance. However, just in the past year, NNSA site managers have needed to issue a number of letters to their contractors to correct significant safety deficiencies.

Examples include:

- a. Letter from the LANL Manager to LANS dated September 16, 2011, regarding the safety of operations at LANL
- b. Letter from the Pantex Manager to B&W Pantex dated December 2, 2011, regarding the quality and safety of work at Pantex
- c. Letter from the Pantex Manager to B&W Pantex dated May 29, 2012, regarding deficiencies in safety-related fire suppression systems
- d. Letter from the Y-12 Manager to B&W Y-12 dated January 26, 2012, regarding safety risks from hazardous energy sources
- e. Letter from the Y-12 Manager to B&W Y-12 dated May 21, 2012, regarding deficiencies in isolating hazardous energy sources (the lockout/tagout process)

So, given the number and significance of ongoing safety deficiencies noted in these letters, do you believe that NNSA and its contractors have reached a mature, conservative level of safety performance with regard to complex, nuclear operations, maintenance and design/construction of new facilities such that they no longer need the oversight/regulation functions currently performed by DOE? If so, what data or metrics are you aware of that support your position?

Dr. KUCKUCK. I no longer have sufficient knowledge of the specifics of day-to-day oversight by the Site Managers of the NNSA laboratories and plants to answer this question adequately. However, I think a key word in your question would be the "significance" of the deficiencies. In my experience both in my laboratory career as well as my NNSA career, many of those deficiencies cited by the DOE overseers were minor and of an administrative nature—in a system of excessive and overwhelming paperwork.

Ms. SANCHEZ. 54) When you were at NNSA, you came to agreement with the Office of Health Safety and Security on implementing safety regulations. Can you provide us more details on this process and its impact?

Dr. KUCKUCK. I was not part of this process or agreement while at NNSA.

Ms. SANCHEZ. 55) Mr. Aloise noted in his testimony that "Significant improvement is still needed especially in NNSA's management of its major projects and contracts."

Should contractors subcontract major construction projects or should NNSA contract and manage these directly? As an example, NNSA in recent years had a pilot program consisting of NNSA contracting directly for the repair of roves across the nuclear complex which was a successful effort but was discontinued.

Dr. KUCKUCK. I believe there are many underlying factors that complicate construction projects in the NNSA. As in other areas, excessive regulation, either explicit from NNSA (DOE), or implicit from the Defense Nuclear Facilities Safety Board, play a major role in the cost and schedule of NNSA facilities. Improving the

overall NNSA model will aid considerably in improving performance on major construction projects.

Ms. SANCHEZ. 56) What is the role for independent safety oversight? What is the appropriate risk level for hazardous and nuclear operations?

Dr. KUCKUCK. Obviously, the NNSA laboratories and plants should have independent safety oversight. Particular risk levels or standards should be developed in a balanced way. I would believe the NRC model and standards might be relevant.

Ms. SANCHEZ. 57) Who should balance risk and mission? Should it be NNSA or the labs?

Dr. KUCKUCK. Both should have a role, and one would hope a relationship would exist that would provide the nation a reasonable balance.

Ms. SANCHEZ. 58) Do you believe it's prudent to remove independent oversight from either NNSA or its contractors?

Dr. KUCKUCK. No.

Ms. SANCHEZ. 59) Should the NNSA Administrator, as is the case in Naval Reactors and as is the case for the Ministry of Defence in the UK, have the authority to lose confidence in any contractor employee from the director to lower levels, to increase accountability from the laboratories?

Dr. KUCKUCK. Of course, they have the authority to "lose confidence" in an employee. However, I believe the subsequent consequences of that loss of confidence must be addressed in advance by both sides in their contractual agreements.

Ms. SANCHEZ. 60) Can you comment on the increase in fees post-privatization of the labs? With such a disparity in fees paid to the labs, with Sandia National Laboratory receiving a third of the fee that LANL and LLNL receive, do you think the mission or performance change depending on the fee level?

Dr. KUCKUCK. My career at the laboratories was totally during the time they were managed by the University of California. There were no fees until my later years when fees were forced upon the UC by DOE, and even then the UC turned them all back to the laboratories to invest in R&D for the nation. There was no impact on performance one way or the other. I am not in a position to comment on what role fees play under the new LLC management contracts, but knowing the dedication, commitment and patriotism of the people at our national laboratories, I cannot imagine that the award of fees would affect mission performance per se. However, I am not cognizant of the extent, if any, to which these fees may be decreasing the resources available for mission.

Ms. SANCHEZ. 61) You say in your testimony that "As Director of the Los Alamos National Laboratory in 2005-2006, I was disappointed that the laboratory working environment at least as burdensome as I had experienced at Livermore prior to the creation of NNSA, and unfortunately, somewhat more adversarial." Why do you think the environment became more adversarial after the creation of NNSA?

Dr. KUCKUCK. I cannot be sure if my perceived increase in adversity was due to a change in time, place or people, or even me. However, I would suspect that most people were optimistic about the improvements that were expected with the creation of the NNSA in 2000 and as these improvements did not materialize as the years went by, perhaps even worsened, tensions and frustrations, and hence, conflicts invariably grew.

Ms. SANCHEZ. 62) How do we instill a culture of trust and expertise going forward?

Dr. KUCKUCK. This is a difficult question and if there was a simple answer, I think we would have achieved it by now. I think such an end state will be based on new faces and a fresh start. Hence, beginning with a severance from the past is probably a reasonable first step.

Ms. SANCHEZ. 63) How do you improve lines of authority to avoid conflicting directives?

Dr. KUCKUCK. I think the NNSA report of February, 2002 stated an appropriate management and oversight model.

Ms. SANCHEZ. 64) There have been a number of changes in the past year, including DOE streamlining duplicative regulations and NNSA moving the site manager reporting authority to the office of the Administrator. Can you share your insights and comment on these management and governance changes?

Dr. KUCKUCK. I have no data upon which to judge the change in reporting of site managers. However, I have seen no evidence of streamlined or simplified governance.

Ms. SANCHEZ. 65) What mechanisms would you recommend to drive down costs and ensure efficiencies?

Dr. KUCKUCK. Eliminate excessive oversight and trust the expertise embedded in our laboratories. Replace current safety oversight with a more balanced, but still independent model.

Ms. SANCHEZ. 66) There are efforts, including in the House NDAA to reduce the number of NNSA FTEs as progress is made to streamline management. Could you comment on the risk and benefits of reducing the number of FTEs at NNSA. If such reductions occur, should we see a proportional number of efficiencies at labs and cost savings at the labs?

Dr. KUCKUCK. I believe the NNSA would be considerably more efficient with fewer Federal employees. I think efficiencies would also result at the laboratories.

Ms. SANCHEZ. 67) Do you believe that NNSA and their contractors can accomplish required levels of oversight/self-regulation for complex high-hazard nuclear operations through a system of performance-based self-assessments by the contractor and NNSA with no transactional oversight? If you believe performance-based oversight should be employed, what level of accidents, if any, do you believe would require a reinstatement of transactional oversight for complex high-hazard nuclear operations?

Dr. KUCKUCK. I believe that NNSA and their contractors can indeed manage and operate high-hazard nuclear operations at a safe level. I believe there should also be balanced, independent performance-based (vice transactional) oversight.

Ms. SANCHEZ. 68) What challenges remain to improve accountability and cost effectiveness?

Dr. KUCKUCK. There will always be challenges to improve accountability and cost effectiveness. The specifics will vary in both place and time, but continuous improvement should be a fundamental principle of any endeavor.

Ms. SANCHEZ. 69) In 2011, the Department of Energy Inspector General issued a report entitled "Management Challenges at the Department of Energy" which recommended eliminated duplicative functions at the NNSA, including General Counsel, Chief Information Officer, Human Resources, Public Affairs. What are the benefits and risks of this approach? What is the cost of having separate functions?

Dr. KUCKUCK. I believe there are no risks with this approach. The benefits would be the NNSA having the ability to streamline and reduce the burdens of excessive oversight that the DOE currently brings to the table. The costs of separate functions would be negligible compared to the savings that would accrue.

Ms. SANCHEZ. 70) Do you think that it would have been a better decision to place NNSA nuclear facilities under Nuclear Regulatory Commission regulation? Why or why not?

Mr. ALOISE. Our October 2008 report addressed the issue of potentially transferring the regulation of DOE nuclear facilities to the Nuclear Regulatory Commission or to the Defense Nuclear Facilities Safety Board. [GAO-09-61.] Specifically, we assessed the extent to which the DOE office responsible for independent assessments of nuclear safety—the Office of Health, Safety, and Security (HSS)—met GAO's elements of effective independent nuclear safety oversight. We found that HSS fell short of fully meeting these criteria. For example, the office's ability to function independently is limited because it has no role in reviewing the technical analysis that helps ensure safe design and operation of nuclear facilities. Nearly all of the shortcomings that we identified were caused, in part, by DOE's desire to strengthen oversight by the program offices that are responsible for carrying out DOE's various missions, with HSS providing assistance. We recommended that if DOE did not take the necessary actions to meet the criteria for effective independent oversight, then the Congress should consider, among other things, shifting the responsibility for regulating nuclear safety to Defense Nuclear Facilities Safety Board or to the Nuclear Regulatory Commission. DOE has taken some actions in response to the recommendations made in this report, but we reported in April 2012 that recent revisions to safety requirements may undermine efforts to establish an effective safety culture at DOE's nuclear facilities and weaken independent oversight of nuclear safety. [GAO-12-347] We recommended in October 2008 that if DOE does not take appropriate action to meet the criteria for independent oversight as defined in our report, then the Congress should consider the following:

- permanently establishing in law the responsibilities of HSS,
- shifting DOE to external regulation by providing the resources and authority to the Defense Nuclear Facilities Safety Board to oversee all DOE nuclear facilities and to enforce DOE nuclear safety rules and directives, or
- providing the resources and authority to NRC to externally regulate all or just newly constructed DOE nuclear facilities.

Appendix V of our 2007 report assessed the options for the external regulation of DOE nuclear facilities, either by the Defense Nuclear Facilities Safety Board or the Nuclear Regulatory Commission. As discussed in this appendix, shifting responsibility for external regulation to either of these organizations appears practical, if they are given the necessary authority and resources. We reported that that Nuclear

Regulatory Commission had not expressed a view on expanding its oversight role beyond the DOE facilities already subject to the commission's regulation. DOE and the Defense Nuclear Facilities Safety Board have taken issue with this option because of concerns about the transition costs compared with the likely safety benefits of doing so. [GAO-09-61.]

Ms. SANCHEZ. 71) Some have asserted that NNSA and its contractors have reached a mature and high level of safety performance. However, just in the past year, NNSA site managers have needed to issue a number of letters to their contractors to correct significant safety deficiencies.

Examples include:

- a. Letter from the LANL Manager to LANS dated September 16, 2011, regarding the safety of operations at LANL
- b. Letter from the Pantex Manager to B&W Pantex dated December 2, 2011, regarding the quality and safety of work at Pantex
- c. Letter from the Pantex Manager to B&W Pantex dated May 29, 2012, regarding deficiencies in safety-related fire suppression systems
- d. Letter from the Y-12 Manager to B&W Y-12 dated January 26, 2012, regarding safety risks from hazardous energy sources
- e. Letter from the Y-12 Manager to B&W Y-12 dated May 21, 2012, regarding deficiencies in isolating hazardous energy sources (the lockout/tagout process)

So, given the number and significance of ongoing safety deficiencies noted in these letters, do you believe that NNSA and its contractors have reached a mature, conservative level of safety performance with regard to complex, nuclear operations, maintenance and design/construction of new facilities such that they no longer need the oversight/regulation functions currently performed by DOE? If so, what data or metrics are you aware of that support your position?

Mr. ALOISE. DOE's nuclear facilities will always require a degree of oversight and regulation. As we reported October 2008 and April 2012, [GAO-09-61, GAO-12-347], we have concerns about the extent to which the efforts of DOE's Office of Health, Safety, and Security (HSS) meet the elements of effective oversight. As we reported in 2012, DOE has acted to reform its safety practices, including greater emphasis on having HSS review safety design documents for facilities at DOE sites before their construction, but revisions to nuclear safety requirements may weaken HSS's ability to conduct independent oversight. For example, DOE's reform effort did not fully address safety concerns we and others have identified in three key areas: (1) quality assurance, (2) safety culture, and (3) Federal oversight. Regarding quality assurance, DOE strengthened its quality assurance directive by clarifying that contractors must follow specific industry quality assurance standards, but quality assurance problems persist. For example, DOE proposed a nearly \$250,000 fine against a contractor in July 2011 after identifying quality assurance problems in an incident where a worker punctured his hand with a sharp object contaminated with plutonium. With regard to safety culture, DOE revised its Integrated Safety Management directives to attempt to strengthen the safety culture at its sites, but DOE removed requirements for contractors to follow the directives because contractors already had to comply with safety management requirements in Federal regulation. Defense Nuclear Safety Board officials raised concerns that the requirements in Federal regulation are less detailed and, as a result, contractors may not implement safety practices as rigorously as if they were subject to the more specific requirements in DOE's directives. Finally, regarding Federal oversight, DOE revised its approach to place greater emphasis on having its independent oversight staff review safety design documents before facilities are constructed, rather than after they are built. Other changes, however, such as requiring oversight staff to coordinate their assessment activities with DOE site office and contractor staff, raise concerns about the oversight staff's ability to provide a critical review of safety at DOE's sites that is independent from DOE site office and contractor staff.

Ms. SANCHEZ. 72) You issued a GAO report in February 2012, Observations on NNSA's Management and Oversight of the Nuclear Security Enterprise (GAO-12-473T). The purpose of that report was to explore NNSA's oversight of safety and security in the nuclear security enterprise. Your conclusion in this report was, and I quote, "GAO agrees that excessive oversight and micromanagement of contractors' activities are not an efficient use of scarce federal resources, but that NNSA's problems are not caused by excessive oversight but instead result from ineffective departmental oversight."

Could you please further explain this conclusion?

Mr. ALOISE. Our previous testimonies have focused on problems NNSA and DOE have experienced in terms of safety, security, and project and contract management. In our view, we cannot trace these problems to micromanagement nor could DOE's

Inspector General establish a causal link too overly burdensome regulation. Addressing NNSA's ineffective management requires the following:

- well-trained Federal personnel, both in headquarters and in the field, with a thorough understanding of NNSA sites and programs;
- contracts with measurable performance targets and financial incentives to meet these targets;
- contractor assurance systems that provide detailed information on, among other things, achieving performance targets;
- strong Federal leadership to hold NNSA contractors accountable for their performance; and
- vigorous independent oversight in the crucial areas of safety and security.

Ms. SANCHEZ. 73) In October 2008, GAO issued the report, Department of Energy Needs to Strengthen Its Independent Oversight of Nuclear Facilities and Operations (GAO-09-61). One conclusion included in that report was, "HSS [Office of Health Safety and Security] falls short of fully meeting GAO's elements of effective independent oversight of nuclear safety . . ." Another conclusion was, "In the absence of external regulation, DOE needs HSS to be more involved in nuclear safety oversight because a key objective of independent oversight is to avoid the potential conflicts of interest that are inherent in program office oversight."

Do you believe that the Department has made any significant improvements in oversight since you issued this report in October 2008?

Do you believe that the oversight model outlined in H.R. 4310 can satisfy the elements of effective independent oversight that GAO used as its standard of comparison in 2008?

Mr. ALOISE. DOE's Office of Health, Safety, and Security (HSS) took a number of important steps to implement the recommendations we made in our October 2008 report. For example, as we reported in April 2012 [GAO-12-347.], HSS is reviewing safety design documents for facilities at DOE sites before their construction and establishing site leads within HSS to maintain and assess all aspects of a site's operations. However, we also reported that recent revisions to safety requirements may weaken HSS's ability to conduct independent oversight. For example, we found that HSS must now coordinate its assessment activities with site office management, which could compromise the ability of HSS to perform its mission independently.

Concerning H.R. 4310, we have not formally evaluated the proposed legislation, but we observe that any revisions to independent oversight of NNSA should adhere to the criteria we used in evaluating the effectiveness of HSS in October 2008. These criteria include (1) independence, (2) technical expertise, (3) capability to perform reviews and have findings effectively addressed, (4) enforcement, and (5) public access to facility information.

Ms. SANCHEZ. 74) Mr. Aloise noted in his testimony that "Significant improvement is still needed especially in NNSA's management of its major projects and contracts."

Should contractors subcontract major construction projects or should NNSA contract and manage these directly? As an example, NNSA in recent years had a pilot program consisting of NNSA contracting directly for the repair of roves across the nuclear complex which was a successful effort but was discontinued.

Mr. ALOISE. We have not specifically examined whether contractors should subcontract major construction projects or whether NNSA should contract and manage these projects directly. However, in our 2011 report on two planned NNSA procurements, [GAO, Modernizing the Nuclear Security Enterprise: The National Nuclear Security Administration's Proposed Acquisition Strategy Needs Further Clarification and Assessment, GAO-11-848 (Washington, D.C.: Sept. 20, 11).], we noted that the agency's own analysis showed that simply changing contract types and structures will produce little effect unless NNSA better manages its contracts. Furthermore, we reported that NNSA's analysis underpinning its procurement decisions also identified 18 better management practices—some of which could be accomplished now through existing contracts—such as improving enterprisewide collection and analysis of costs that could lead to greater efficiencies regardless of the contracting strategy employed.

We are also on record as opposing DOE's use of "fast-track" design-build—where design, construction, and technology development occur simultaneously—for designing and constructing one-of-a-kind, complex nuclear facilities. We have found that this approach, among other things, increases the risk of encountering problems that can increase a project's cost and delay completion on schedule. [GAO, Hanford Waste Treatment Plant: Contractor and DOE Management Problems Have Led to Higher Costs, Construction Delays, and Safety Concerns, GAO-06-602T (Washington, D.C.: Apr. 6, 2006).]

Ms. SANCHEZ. 75) What is the role for independent safety oversight? What is the appropriate risk level for hazardous and nuclear operations?

Mr. ALOISE. As we reported in October 2008, any independent regulatory authority would need to meet the criteria for effective independent oversight: independence, technical expertise, ability to perform reviews and have findings effectively addressed, enforcement, and public access to facility information. [GAO-09-61.] As we reported, DOE and/or Congress have the following options they could take to improve independent oversight:

- permanently establishing in law the responsibilities of DOE's Office of Health, Safety and Security;
- shifting DOE to external regulation by providing the resources and authority to the Defense Nuclear Facilities Safety Board to oversee all DOE nuclear facilities and to enforce DOE nuclear safety rules and directives; or
- providing the resources and authority to the Nuclear Regulatory Commission to externally regulate all or just newly constructed DOE nuclear facilities.

Appendix V of our 2008 report assessed the options for external regulation of DOE nuclear facilities, either by the Defense Nuclear Facilities Safety Board or the Nuclear Regulatory Commission. As discussed in this appendix, shifting responsibility for external regulation to either of these organizations appears practical, given the necessary authority and resources. We reported that NRC had not expressed a view on expanding its oversight role beyond the DOE facilities already subject to NRC regulation. DOE and the Safety Board have taken issue with this option because of concerns about the transition costs compared with the likely safety benefits of doing so.

Ms. SANCHEZ. 76) Who should balance risk and mission? Should it be NNSA or the labs?

Mr. ALOISE. Both NNSA and its contractors share responsibilities in managing the risks of day-to-day activities. However, the nuclear enterprise's sites, including facilities and equipment, are Government owned and contractor operated, formal acceptance of risk—balancing mission needs compared with potential risks—is ultimately a Federal responsibility. Some high-security risks require the notification of the Secretary of Energy.

Ms. SANCHEZ. 77) Do you believe it's prudent to remove independent oversight from either NNSA or its contractors?

Mr. ALOISE. No. In our view there will always be a need for independent oversight for health, safety and security issues.

Ms. SANCHEZ. 78) Do you believe that the DNFSB performs a needed, independent oversight function?

Mr. ALOISE. Yes. In our view, the Defense Nuclear Facilities Safety Board performs a needed, independent oversight function. In our October 2008 review of DOE's Office of Health, Safety, and Security, [GAO-09-61.] we noted that the Safety Board was given responsibilities to (1) review and evaluate the content and implementation of the standards for the design, construction, operation, and decommissioning of defense nuclear facilities; (2) investigate any event or practice at these facilities that it determines has adversely affected or may adversely affect public health and safety; (3) analyze design and operational data, including safety analysis reports; (4) review new facility design and monitor construction, recommending any changes within a reasonable time period; and (5) make such recommendations to the Secretary of Energy, considering the technical and economic feasibility of implementing them. By statute, the Secretary must respond in writing to the Safety Board to accept or reject the recommendation and make this public. If the Safety Board transmits a recommendation relating to an imminent or severe threat, it is to also transmit the recommendation to the President and provide as information to the Secretary of Defense. The President is to review DOE's response and accept or reject the Safety Board's recommendation. The Safety Board does not have the authority of a regulator but rather uses both informal interactions and formal communications with DOE to implement its statutory "action forcing authorities." We believe that this range of responsibilities is an important aspect of ensuring the safety of DOE's defense nuclear facilities.

We did note in our report, however, the following limitations with the Safety Board's responsibilities:

- As of December 2007, the Safety Board did not have responsibility for DOE's 51 nondefense high-hazard nuclear facilities.
- While DOE had been responsive to the Safety Board's recommendations, a number of past deficiencies remained unresolved, and the pace of closure for many other recommendations has been slow. Specifically, it had taken DOE up to 11 years to obtain closure from the Safety Board for some recommendations, and some systemwide recommendations had remained open for a decade or more.

- A 1995 DOE Advisory Committee report found that the Safety Board was not subject to the same checks and balances as Nuclear Regulatory Commission is with respect to regulating NRC's licensees.

Ms. SANCHEZ. 79) Do you think that oversight by the Defense Nuclear Facilities Safety Board has helped or hindered the ability of NNSA to carry out its missions?

Mr. ALOISE. We believe that the Defense Nuclear Facilities Safety Board has helped NNSA to carry out its missions. As described in our response to question 78, the Defense Nuclear Facilities Safety Board's primary responsibility is safety. However, we also believe safety and security are fundamental components of DOE and NNSA's missions. Furthermore, we do not believe that the Defense Nuclear Facilities Safety Board has hindered NNSA's mission because, according to statute, it is a DOE responsibility to accept or reject the Defense Nuclear Facilities Safety Board's recommendations and the Defense Nuclear Facilities Safety Board has no enforcement authority. In our view, it is the responsibility of DOE and NNSA to balance mission needs with the Defense Nuclear Facilities Safety Board's recommendations.

Ms. SANCHEZ. 80) Should the NNSA Administrator, as is the case in Naval Reactors and as is the case for the Ministry of Defence in the UK, have the authority to lose confidence in any contractor employee from the director to lower levels, to increase accountability from the laboratories?

Mr. ALOISE. We are not in a position to address this question because we have not examined how NNSA's Office of Naval Reactors or the Ministry of Defence in the United Kingdom manage their contractors.

Ms. SANCHEZ. 81) Can you comment on the increase in fees post-privatization of the labs? With such a disparity in fees paid to the labs, with Sandia National Laboratory receiving a third of the fee that LANL and LLNL receive, do you think the mission or performance change depending on the fee level?

Mr. ALOISE. We are not in a position to address this question because we have not systematically examined whether the additional costs of the Los Alamos National Laboratory and the Lawrence Livermore National Laboratory contracts have been worth the additional fees. A recent National Academy of Sciences study reported that additional costs for the two laboratories total about \$210 million annually. These costs include fees, taxes, and personnel issues, such as pension changes. We note that this study found little relationship between the nature of the laboratories' contracts and their scientific and engineering accomplishments and outputs, which continue at a high level. NNSA plans to recomplete the Sandia National Laboratory contract in the near future, but we do not know the details of NNSA's planned acquisition strategy.

Ms. SANCHEZ. 82) How do we instill a culture of trust and expertise going forward?

Mr. ALOISE. Given NNSA's record of weak management of its major projects, safety and security issues, and lack of basic enterprisewide data, we believe that careful and capable Federal oversight is critical to an efficient and effective nuclear weapons program. We support NNSA's efforts to move to more effective, performance-based oversight. As we testified in February 2012, NNSA's progress has been mixed. [GAO, National Nuclear Security Administration: Observations on NNSA's Management and Oversight of the Nuclear Security Enterprise, GAO-12-473T (Washington, D.C.: Feb. 16, 2012).] Based on our past and ongoing work, we believe important elements of performance-based oversight include the following:

- well-trained Federal personnel, both in headquarters and in the field; with a thorough understanding of NNSA sites and programs;
- contracts with measurable performance targets and financial incentives to meet these targets;
- contractor assurance systems that provide detailed information on, among other things, achieving performance targets;
- strong Federal leadership to hold NNSA contractors accountable for their performance; and
- vigorous independent oversight in the crucial areas of safety and security.

Ms. SANCHEZ. 83) How do you improve lines of authority to avoid conflicting directives?

Mr. ALOISE. The creation of NNSA and its implementation have already largely addressed the issue of improving the lines of authority. As we reported in June 2004, by better delineating lines of authority between NNSA headquarters and its field offices, NNSA's reorganization has addressed past problems, such as communication problems resulting from the overlapping roles and responsibilities of the Federal workforce that oversees the nuclear weapons program. [GAO, National Nuclear Security Administration: Key Management Structure and Workforce Planning Issues Remain as NNSA Conducts Downsizing, GAO-04-545, (Washington, D.C.:

June 25, 2004).] For example, according to NNSA site office managers, the streamlined structure has improved vertical communication because communication channels between headquarters and the field do not involve an extra layer of management in the operations offices. In addition, the realignment provides NNSA site office managers with additional authority to manage contractors and assigns them responsibility for the day-to-day security and safety of contractor operations. As a result, the realignment has strengthened the hand of local NNSA site office managers, who now have the authority to shut down operations for safety and security reasons.

We have not systematically examined the issue of conflicting directives, but we reported on DOE's and NNSA's efforts to streamline directives. [GAO, Nuclear Safety: DOE Needs to Determine the Costs and Benefits of Its Safety Reform Effort, GAO-12-347 (Washington, D.C.: Apr. 20, 2012).] In addition, NNSA has the authority to develop its own tailored directives through its Policy Letter procedure. [NNSA, Policy Letters: NNSA Policies, Supplemental Directives, and Business Operating Procedures, NASD 251.1 (Washington, D.C.: July 5, 2011).]

Ms. SANCHEZ. 84) There have been a number of changes in the past year, including DOE streamlining duplicative regulations and NNSA moving the site manager reporting authority to the office of the Administrator. Can you share your insights and comment on these management and governance changes?

Mr. ALOISE. As we reported in July 2012, the benefits of DOE's reform effort announced in a March 2010 memorandum—reducing the number of safety-related directives from 80 to 42 by eliminating or combining requirements the Department determined were unclear, duplicative, or too prescriptive and by encouraging the use of industry standards—are not clear for several reasons. [GAO-12-347] Specifically, DOE did not (1) determine how the original requirements impaired productivity or added costs, (2) assess whether the cost to implement the revised directives would exceed the benefits, or (3) develop performance measures in order to assess how the reform effort will lead to improved productivity or lower costs. Furthermore, DOE's safety reform effort did not fully address safety concerns we and others identified in the areas of quality assurance, safety culture, and Federal oversight. In fact, some of the revisions DOE made to its safety-related directives may actually result in weakened independent oversight. For example, while DOE policy notes that independent oversight is integral to help ensure the effectiveness of safety performance, DOE's Office of Independent Oversight staff must now coordinate its assessment activities with NNSA site office management to maximize the use of resources. This arrangement potentially raises concerns about whether Office of Independent Oversight staff will be sufficiently independent from site office management. In addition, the reform effort gives the NNSA site office, rather than Office of Independent Oversight staff, increased responsibility for managing actions to correct problems identified in independent assessments. Site office determinations of what issues require more formal contractor responses may be influenced by the fact that the site offices also have responsibility for keeping costs under control and work on schedule.

We have not examined NNSA's governance changes, which involved revising the agency's business model to, among other things, place more reliance on contractors' self-oversight through contractor assurance systems to ensure such things as effective safety and security performance. However, in response to the new business model, the Defense Nuclear Facilities Safety Board and the DOE Office of Inspector General raised concerns about contractor assurance systems. For example, in an April 2011 congressional testimony, the chairman of Safety Board stated that contractor assurance systems at defense nuclear facilities have not achieved a degree of effectiveness that would warrant a reduction in Federal safety oversight and that they are not expected to achieve this effectiveness in the foreseeable future.

Ms. SANCHEZ. 85) What mechanisms would you recommend to drive down costs and ensure efficiencies?

Mr. ALOISE. In terms of project and contract and project management, NNSA remains on our high-risk list and remains vulnerable to fraud, waste, abuse, and mismanagement. DOE has recently taken a number of actions to improve management of major projects, including those overseen by NNSA. For example, DOE has updated program and project management policies and guidance in an effort to improve the reliability of project cost estimates, better assess project risks, and better ensure project reviews that are timely and useful and identify problems early. Although DOE's responses to our recommendations and its own findings have been largely positive, and a number of corrective actions have been taken, problems persist, as demonstrated by a number of our recent reports, which we summarized in our February and June 2012 testimonies. However, DOE needs to ensure that NNSA has the capacity—that is, the people and other resources—to resolve its project management difficulties and that it has a program to monitor and independently validate the effectiveness and sustainability of its corrective measures. This

is particularly important as NNSA embarks on its long-term, multibillion-dollar effort to modernize the nuclear security enterprise.

Ms. SANCHEZ. 86) There are efforts, including in the House NDAA to reduce the number of NNSA FTEs as progress is made to streamline management. Could you comment on the risk and benefits of reducing the number of FTEs at NNSA. If such reductions occur, should we see a proportional number of efficiencies at labs and cost savings at the labs?

Mr. ALOISE. Based on previous work, reducing the number of NNSA employees without completing workforce plans now being developed could have risks. For strategic planning purposes, NNSA is undertaking a comprehensive reassessment and analysis of staffing requirements to ascertain future Federal workforce requirements. NNSA-wide workforce plans are not expected to be completed until 2013, according to NNSA officials. [GAO, *Modernizing the Nuclear Security Enterprise, Strategies and Challenges in Sustaining Critical Skills in Federal and Contractor Workforces*, GAO-12-468 (Washington, D.C.: Apr. 26, 2012).] These plans are critical to effective streamlining of management. As we have reported, when downsizing takes place in an unstructured environment, agencies experience significant challenges to deploying people with the right skills, in the right places, at the right time, and to performing its missions economically, efficiently, and effectively. For example, in June 2004 we reported that an earlier NNSA reorganization was unlikely to ensure that the agency had sufficient staff with the right skills in the right places because NNSA chose to downsize its Federal workforce without determining what critical skills and capabilities it needed to meet its mission and program goals. [GAO, *National Nuclear Security Administration: Key Management Structure and Workforce Planning Issues Remain as NNSA Conducts Downsizing*, GAO-04-545, (Washington, D.C.: June 25, 2004).] In December 2001, we reported that NNSA did not have the coherent human capital and workforce planning strategies it needed to develop and maintain a well managed workforce over the long run. [GAO, *NNSA Management: Progress in the Implementation of Title 32*, GAO-02-93R (Washington, D.C.: Dec. 12, 2001).] Consequently, we recommended that NNSA develop a thorough human capital and workforce planning strategy. Instead of developing a workforce plan, according to a senior NNSA official, NNSA managers relied on their judgment about how much to reduce the Federal staff and where those reductions should occur in carrying out its December 2002 reorganization. NNSA did develop a workforce plan in December 2003 that attempted to establish a framework for long-term workforce planning, but this plan is of limited use without current statistics on workforce, positions, and organizational structures.

We are uncertain what, if any, NNSA Federal workforce reductions would have on the contractor workforce.

Ms. SANCHEZ. 87) Do you believe that NNSA and their contractors can accomplish required levels of oversight/self-regulation for complex high-hazard nuclear operations through a system of performance-based self-assessments by the contractor and NNSA with no transactional oversight? If you believe performance-based oversight should be employed, what level of accidents, if any, do you believe would require a reinstatement of transactional oversight for complex high-hazard nuclear operations?

Mr. ALOISE. We are supportive of NNSA's moves toward a more performance-based approach to oversight. For example, in our review of security at Los Alamos National Laboratory, we recommended that the Administrator of NNSA provide meaningful financial incentives in future performance evaluation plans for implementation of for laboratory security. [GAO, *Los Alamos National Laboratory: Long-Term Strategies Needed to Improve Security and Management Oversight*, GAO-08-694 (Washington, D.C.: June 13, 2008).] We similarly recommended providing financial incentives to LLNL's contractor to sustain security performance improvements. [GAO, *Nuclear Security: Better Oversight Needed to Ensure That Security Improvements at Lawrence Livermore National Laboratory Are Fully Implemented and Sustained*, GAO-09-321 (Washington, D.C.: Mar. 16, 2009).] However, in our view, effectively evaluating performance, as opposed to ensuring compliance, is likely to be more demanding, will require skilled personnel, and needs to be done more than once a year. More specifically, our past work has found issues with NNSA's oversight of security, including staffing shortages at NNSA site offices, inadequate security staff training, and lack of comprehensive security data. These issues have hampered the agency's understanding of the overall effectiveness of its security program. [GAO-07-36.]

We have made similar findings regarding NNSA's project management. While noting recent actions, we believe that DOE needs to ensure that NNSA has the capacity—that is, the people and other resources—to resolve its project management difficulties and that it has a program to monitor and independently validate the effec-

tiveness and sustainability of its corrective measures. This is particularly important as NNSA embarks on its long-term, multibillion-dollar effort to modernize the nuclear security enterprise. [GAO-12-473]

Contractor self-assessments are important but are just one element of a contract administration and oversight program. Other elements of equal importance are the following:

- well-trained Federal personnel, both in headquarters and in the field, with a thorough understanding of NNSA sites and programs;
- contracts with measurable performance targets and financial incentives to meet these targets;
- contractor assurance systems that provide detailed information on, among other things, achieving performance targets;
- strong Federal leadership to hold NNSA contractors accountable for their performance; and
- vigorous independent oversight in the crucial areas of safety and security.

Ms. SANCHEZ. 88) What challenges remain to improve accountability and cost effectiveness?

Mr. ALOISE. In terms of accountability and cost effects in managing projects and contracts, NNSA remains on our high-risk list and remains vulnerable to fraud, waste, abuse, and mismanagement. DOE has recently taken a number of actions to improve management of major projects, including those overseen by NNSA. For example, DOE has updated program and project management policies and guidance in an effort to improve the reliability of project cost estimates, better assess project risks, and better ensure project reviews that are timely and useful and identify problems early. Although DOE's responses to our recommendations and its own findings have been largely positive, and a number of corrective actions have been taken, problems persist, as demonstrated by a number of our recent reports, which are summarized in our February and June 2012 testimonies. However, DOE needs to ensure that NNSA has the capacity—that is, the people and other resources—to resolve its project management difficulties and that it has a program to monitor and independently validate the effectiveness and sustainability of its corrective measures. This capacity issue is particularly important as NNSA embarks on its long-term, multibillion-dollar effort to modernize the nuclear security enterprise.

Given NNSA's record of weak management of its major projects, safety and security issues, and lack of basic enterprisewide data, we believe that careful and capable Federal oversight is critical to an efficient and effective nuclear weapons program. We support NNSA's efforts to move to more effective, performance-based oversight. As our testimony shows, NNSA's progress has been mixed. [GAO-12-473T.] Based on our past and ongoing work, we believe important elements of performance based oversight include the following:

- well-trained Federal personnel, both in headquarters and in the field, with a thorough understanding of NNSA sites and programs;
- contracts with measurable performance targets and financial incentives to meet these targets;
- contractor assurance systems that provide detailed information on, among other things, achieving performance targets;
- strong Federal leadership to hold NNSA contractors accountable for their performance; and
- vigorous independent oversight in the crucial areas of safety and security.

Ms. SANCHEZ. 89) In 2011, the Department of Energy Inspector General issued a report entitled "Management Challenges at the Department of Energy" which recommended eliminated duplicative functions at the NNSA, including General Counsel, Chief Information Officer, Human Resources, Public Affairs. What are the benefits and risks of this approach? What is the cost of having separate functions?

Mr. ALOISE. We share the Inspector General's views that merging these functions back into DOE would require amending the NNSA Act, which prohibits the use of dual-hatting (i.e., having DOE officials contemporaneously serve in NNSA and DOE positions) and specifies NNSA's separately organized status. Some personnel cost savings might result if duplicative positions were eliminated but these savings are likely to be small.

QUESTIONS SUBMITTED BY MR. LANGEVIN

Mr. LANGEVIN. 90) In 2011, the Department of Energy Inspector General issued a report entitled "Management Challenges at the Department of Energy" which recommended eliminating duplicative functions at the NNSA, including General Coun-

sel, Chief Information Officer, Human Resources, and Public Affairs. 1. What are the benefits of this approach?

Dr. KUCKUCK. This is the same question as #69, hence, same answer.

Mr. LANGEVIN. 91) In 2011, the Department of Energy Inspector General issued a report entitled "Management Challenges at the Department of Energy" which recommended eliminating duplicative functions at the NNSA, including General Counsel, Chief Information Officer, Human Resources, and Public Affairs. 2. What is the cost of having separate functions?

Dr. KUCKUCK. This is the same question as #69, hence, same answer.

Mr. LANGEVIN. 92) Have the recommendations made by GAO in its 2007 report been implemented satisfactorily?

Mr. ALOISE. DOE and NNSA have responded positively to 20 of the 21 the recommendations we made in our 2007 report. [GAO-07-36.] We continue to monitor the agencies' progress in implementing these recommendations and note general progress in improving their security program, but more persistent problems in project management.

DOE, however, disagreed with one of the 2007 report's recommendation. More specifically, we recommended that, to ensure that NNSA functions as a separately organized agency, the Secretary of Energy and the Administrator, NNSA, should clearly define NNSA's status as a separately organized agency within the Department. In his 31 USC Section 720 response to our report, the Deputy Secretary of Energy stated that he did not concur with this recommendation. He stated that elements of the Department and NNSA had executed memorandums of understanding specifying how certain departmentwide functions would be performed while respecting the statutory insulation of NNSA personnel. He also stated that the Department will consider issuing circumstance-specific guidance where required to correct misperceptions about the effect of the NNSA's act limitations. Since we received the letter, there have been instances where the DOE-NNSA relationship has become less clear. For example, DOE recently announced that DOE's Environmental Management program will begin to report to NNSA Administrator, who simultaneously is an Under Secretary for Energy. As a result, we have left this recommendation open and still believe further clarification of the NNSA-DOE relationship is needed.

Mr. LANGEVIN. 93) What efficiencies do you recommend going forward?

Mr. ALOISE. Generally, our recommendations have focused on improving the effectiveness of NNSA. In our view, focusing unduly on efficiencies may disrupt some of the progress NNSA has made over the past 12 years. Our ideas on improving effectiveness follow. DOE has recently taken a number of actions to improve management of major projects, including those overseen by NNSA. For example, DOE has updated program and project management policies and guidance in an effort to improve the reliability of project cost estimates, better assess project risks, and better ensure project reviews that are timely and useful and identify problems early. Nevertheless, problems persist, as we noted in our February and June 2012 testimonies that summarized recent reports. [GAO-12-473T.] In particular, we noted that DOE needs to ensure that NNSA has the capacity—that is, the people and other resources—to resolve its project management difficulties and that it has a program to monitor and independently validate the effectiveness and sustainability of its corrective measures. This capacity and monitoring program are particularly important as NNSA embarks on its long-term, multibillion-dollar effort to modernize the nuclear security enterprise.

QUESTIONS SUBMITTED BY MR. HEINRICH

Mr. HEINRICH. 94) Based on the testimony, it appears that the keys to success are (1) finding the proper balance between oversight and operations, (2) strong leadership at NNSA, and (3) deep partnership between senior NNSA officials and the national security lab directors. But it's hard to legislate balance, leadership and good behavior. If you were to have the opportunity to be the NNSA Administrator again, what would you want in your tool chest to address each of these three issues?

Mr. BROOKS. I agree with your conclusion that the three factors you cite are the keys to NNSA's success (or that of almost any other organization). In order to find the proper balance between oversight and operations, I would want it to be clear that my chain of command and ultimately me personally were the ones responsible and that we were not to be second guessed by other entities. I believe this is the only one of the three factors you cite that is amenable to legislation.

With regard to strong leadership at NNSA, I believe existing law gives the Administrator all the authority he or she requires to select the right officials and to establish internal procedures to allow them to do their job. I was extremely fortu-

nate during my tenure to have an outstanding group of career civil servants in leadership positions. My attempts to establish a “strong site manager” model (described in a previous response) were, I believe, correct. Thus, existing Federal law is adequate in this area. I believe, however, that it is necessary to find a way of giving new managers more effective training. From my 30 years in the military and the Department of Defense, I am struck by how much more time is spent on training the career leadership in those organizations. I do not have specific recommendations in this area which is, of course, not an exclusive concern of NNSA.

Finally, with regard to partnership between senior NNSA officials and the national security laboratory directors, I do not believe there were any tools I needed that I did not have. My experience was that, despite the fact that the laboratory directors and I all found frequent personal private meetings to be exceptionally useful, such meetings were difficult to arrange given the exceptional workload of both laboratory directors and senior Federal officials. Obviously there is no solution to this except setting priorities on the part of the Administrator.

Mr. HEINRICH. 95) Ambassador Brooks, at the end of your written testimony you mention that: “Finally, if the Congress wants—as I believe it should—the type of relationship between NNSA and the laboratories that I described as part of our vision, it must be constantly on guard against the tendency, when problems arise, to ask why federal overseers did not prevent the problem though more detailed audits and inspections.” What suggestions would you have for Congress to help improve the performance of the NNSA?

Mr. BROOKS. I believe that Congress needs to spend considerable time ensuring that it understands the cause of the current problems at NNSA. The panel established by the National Defense Authorization Act for Fiscal Year 2013 may help. As I have testified, I believe that the failure of the current semi-autonomous approach to NNSA will require legislation to correct. Given that all change is disruptive, it is important to be as certain as possible that those of us seeking to improve the situation are dealing with the real problem and not taking action to solve problems that may have existed in the past but are not current issues. Thus I believe the Congress must take all testimony of those of us whose experience is several years in the past with some degree of skepticism.

The other thing that this committee can do is to serve as a champion for NNSA on the Hill. I was extremely fortunate during my tenure to have strong and bipartisan support from this committee. I understand that that situation continues.

Mr. HEINRICH. 96) Based on the testimony, it appears that the keys to success are (1) finding the proper balance between oversight and operations, (2) strong leadership at NNSA, and (3) deep partnership between senior NNSA officials and the national security lab directors. But it’s hard to legislate balance, leadership and good behavior. If you were to have the opportunity to be the NNSA Administrator, what would you want in your tool chest to address each of these three issues?

Dr. KUCKUCK. The Administrator would need a true commitment, and visible support from the Congress and the Administration for a new, balanced NNSA. A convincing commitment from those entities would then allow the enticement of top scientific and management talent to serve as NNSA leadership—a condition that does not exist today. The Administrator and his/her strong leadership team could then establish the proper balanced oversight model and develop the partnerships that are necessary not only with the laboratories, but also across the entire NNSA complex and with external partners and customers. This would not be achievable overnight even with the best of leadership.