

**NUCLEAR TERRORISM PREVENTION:  
STATUS REPORT ON THE FEDERAL  
GOVERNMENT'S ASSESSMENT OF NEW RADIATION  
DETECTION MONITORS**

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**HEARING**  
BEFORE THE  
SUBCOMMITTEE ON OVERSIGHT AND  
INVESTIGATIONS  
OF THE  
COMMITTEE ON ENERGY AND  
COMMERCE  
HOUSE OF REPRESENTATIVES  
ONE HUNDRED TENTH CONGRESS  
FIRST SESSION

SEPTMBER 18, 2007

**Serial No. 110-63**



Printed for the use of the Committee on Energy and Commerce  
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**NUCLEAR TERRORISM PREVENTION: STATUS REPORT ON THE FEDERAL GOVERNMENT'S  
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**NUCLEAR TERRORISM PREVENTION: STATUS  
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ASSESSMENT OF NEW RADIATION DETEC-  
TION MONITORS**

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**TUESDAY, SEPTEMBER 18, 2007**

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON OVERSIGHT  
AND INVESTIGATIONS,  
COMMITTEE ON ENERGY AND COMMERCE,  
*Washington, DC.*

The subcommittee met, pursuant to call, at 10:08 a.m., in room 2123, Rayburn House Office Building, Hon. Bart Stupak (chairman) presiding.

Present: Representatives Melancon, Green, Inslee, Whitfield, Walden, Murphy, Burgess, and Barton.

Staff present: Richard Miller, John Sopko, Chris Knauer, Scott Schloegel, Kyle Chapman, Hasan Sarsour, Angela Davis, Alan Slobodin, Dwight Cater, and Garrett Golding.

**OPENING STATEMENT OF HON. BART STUPAK, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN**

Mr. STUPAK. This meeting will come to order. Today we have a hearing entitled, "Nuclear Terrorism Prevention: Status Report on the Federal Government's Assessment of New Radiation Detection Monitors."

Before we begin, I want to let you know that Ranking Member Whitfield and I discussed our desire to keep as much of this hearing in open session as possible. It is a long-standing tradition of this committee and this House to keep our hearings open to the American public. If—and that is a big if—we need to go into closed session to have a few questions answered by our witness, we will. But it will be our intent to make sure that the vast majority of this hearing is held in open session.

I also remind Members that the purpose of this hearing is to discuss the management and validity of the ASP testing process. We are not here to discuss the scientific results of DNDO's testing or which machine may be better or worse.

Each Member will be recognized for their opening statement, 5 minutes for an opening statement. And I will begin.

Preventing terrorists from smuggling radioactive material or a nuclear weapon into this country is our Nation's highest homeland security priority. Since 1993, the International Atomic Energy Agency has confirmed 16 incidents of trafficking in highly enriched

uranium or plutonium and 540 cases of illicit trafficking in nuclear or radiological materials. A significant percentage of that material could be used to produce a nuclear weapon or a dirty bomb. The co-chair of the 9/11 Commission, former Governor Tom Kean, summed it up when he said, "Preventing terrorist access to weapons of mass destruction warrants a maximum effort by our Government."

Radiation detection equipment is currently deployed at our ports and borders. By using a two-step process coupled with the United States Customs and Border Protection procedures, CBP is able to identify the types of radioactive material in cargo containers. As cargo enters the United States, it is screened through polyvinyl toluene radiation detectors at the primary inspection stage. These polyvinyl, or PVT, detectors will alarm if the cargo contains a nuclear weapon or innocuous forms of naturally occurring radiation, which is present in substances such as granite, bananas and kitty litter. If there is an alarm, CBP officers pull the cargo container aside to conduct a secondary inspection with a hand-held radioactive isotope identification device, or RIID, to determine whether or not the radiation is coming from an innocuous source or an actual threat. If necessary, physical inspection of the cargo may follow.

The Domestic Nuclear Detection Office, DNDO, is developing the next generation of radiation detection devices called advanced spectroscopy portals, ASPs. ASPs have potential to distinguish possible threats from innocent cargo, and thereby reduce the number of nuisance alarms that have to be investigated by the CBP. This ability to better differentiate threats from benign materials is helpful in high-volume locations to speed up the inspection process.

In October 2006, the Government Accountability Office, GAO, found that DNDO's cost-benefit analysis did not justify DHS's plan to spend \$1.2 billion for purchasing and deploying ASPs. The GAO recommended that DNDO conduct further testing of ASP systems.

In response to GAO's critical review, Congress restricted DNDO from expending funds for full-scale procurement of ASP until the Secretary of Homeland Security certifies that the ASPs will provide a—and I quote now—"significant increase in operational effectiveness."

In January 2007, I, along with Chairman Dingell and Ranking Members Barton and Whitfield, asked the GAO to review DNDO's testing. DNDO did their phase 1 at the Nevada test site in late February through early March. Phase 2 was report writing. And then DNDO then conducted additional phase 3 testing in late March through early April.

Today we will hear that GAO has significant concerns about DNDO's testing.

First, GAO reports that DNDO gave the three ASP vendors access to many of the packages that would be tested. This allowed the vendors to calibrate their machines to many of the radioactive sources prior to the tests. GAO has expressed concerns that this may have biased the ASP test results.

Second, GAO raised concerns that the tests did not assess the detection limits of these new ASP machines. Nearly a year ago, even before DNDO commenced testing, the Department of Energy asked DNDO to conduct special tests to determine the limits of detection

for these ASP machines based on masking material they routinely encounter in international commerce.

Unfortunately, DNDO did not conduct these outer-limit tests. Instead, DNDO is doing computer simulations, referred to as injection studies, which may be informative but also need to be validated. However, GAO believes that these injection studies should not be considered a substitute for actual testing.

It is critical to know the level at which the ASPs can detect masked radioactive material. If DNDO doesn't know the outer detection limits of these new ASP machines, dangerous materials could possibly slip through our borders without the CBP officers' knowledge. Federal officials need to be absolutely sure they understand exactly how these new machines will perform before they are deployed to keep us safe. After all, Department of Homeland Security has well-functioning radiation portal monitors in place today, so there is not an urgent need to rush certification of the ASPs.

DNDO officials have told the committee staff and GAO that they do not intend to wait for the results of the injection studies before they issue a certification this fall. It is hard to fathom how DNDO can credibly certify ASPs as "significantly increase operational effectiveness" without completing the injection studies and subjecting them to external validation review.

I look forward to hearing from DNDO's explanation on why it is rushing certification. By all appearances, the arbitrary certification deadline appears to be driving the testing, rather than the testing driving the certification. Why isn't DNDO driven by a desire to obtain valid, unbiased and complete test results prior to any certification?

Just 1 week after the Nevada test campaign was completed, and even before the data was analyzed, the director of DNDO was declaring that he believed the Department of Homeland Security's Secretary would approve full-scale procurement by July. A June 26th certification deadline was the target. Then the certification deadline was pushed to July 28th. After a decision was made to conduct injection studies, it was moved to September 21. Then on August 30, DHS advised Congress that CBP was conducting 2 more months of field testing with new software, and the date would be further extended.

Not only is the schedule shifting, but the data to be used in certification is also shifting. Originally, phase 1 data would be used for certification. Now we learn that two additional sets of tests, which were not designed for certification and may lack sufficient statistical power, are going to be used for certification.

Just prior to GAO finalizing its assessment in late July, Under Secretary for Management Paul Schneider announced an independent review of DNDO's basis for certification. On the one hand, we are pleased to see DHS initiate the independent review that was separate from the DNDO. On the other hand, we are disappointed to see public statements from DHS disparaging the GAO qualifications to assess the testing plans carried out by DNDO. This created the appearance that DHS was seeking to organize a review panel to insulate DHS from what they anticipated would be a critical assessment by GAO.

On August 3, the Under Secretary requested Dr. Peter Nanos of the Defense Threat Reduction Agency to head up the review effort and directed him to complete the review by September 17. Last week we learned that John Higbee of the Defense Acquisition University replaced Dr. Nanos. Then, just last Friday afternoon, the committee was informed that Mr. Higbee has now been removed, and instead Mr. George Thompson of the Homeland Security Institute will head the review team.

I look forward to hearing why it is that Under Secretary Schneider has appointed three different people to head up the independent review in 6 weeks' time. I am also curious to learn why Mr. Schneider believes that his latest appointee, Mr. Thompson, is independent, given the fact that his organization receives its funding from DHS.

I look forward to hearing these answers to several questions today: What events have caused DNDO to delay certification three times? Did DNDO test the limitations of the ASP machine in its tests at the Nevada test site? If not, why not? Were the phase 1 tests potentially biased? Is DNDO relying on computer simulations to make up for weaknesses in the testing plan?

Should DNDO certify performance, leading to a \$1.2 billion purchase, based merely on a computer simulation, or should there be validation in the field first? How can DNDO certify ASPs before it completes and fully reviews the injection studies?

After certification has been submitted to Congress, how many ASPs does DNDO plan to purchase, and will these be deployed for primary or secondary screening? Has DNDO been moving the goal posts on both deadlines and the elements it was using to develop its certification?

In summation, the ASP technology looks promising, but there are enough questions about the testing that I cannot be comfortable with a possible DHS certification of the ASPs. As is frequently said, we need to be right 100 percent of the time, and the terrorists only need to be right once.

Given all that I have learned thus far, I think it would be cheap insurance for DNDO to do a new and truly blind testing, using comprehensive test protocols, which would give us accurate data regarding the capabilities and limitations of the ASP machines.

We need to be sure our technology can be right 100 percent of the time. After all, CBP says the technology that we employ every day works. So it is not imperative that we rush ASP machines into full-scale deployment.

With that, I yield to my friend, Mr. Whitfield, for an opening statement.

**OPENING STATEMENT OF HON. ED WHITFIELD, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF KENTUCKY**

Mr. WHITFIELD. Mr. Chairman, thank you very much for having this important hearing on radiation portal monitors.

Since the attacks of 9/11, the subcommittee has held several hearings about the security of our ports and borders. Specifically, we have examined how effectively the programs were being carried

out to protect the United States from terrorists who may attempt to smuggle radiological material into the U.S. for an attack.

The Department of Homeland Security, of course, has responsibility for domestic ports and the Department of Energy for overseas ports. Previous hearings have demonstrated how difficult it is to scan millions of cargo containers at hundreds of ports for radioactive material.

Over the years, we have coordinated with the Government Accountability Office to identify problems with the initial deployment rate of radiological portal monitors. We also identified problems with the methods used by the U.S. Customs and Border Protection to target and screen cargo at foreign ports before it is shipped to the United States.

As of February 2007, over 900 radiation portal monitors had been installed at domestic ports throughout the country. Currently, about 90 percent of the cargo crossing our borders is scanned for radioactivity, and I think we should all feel good about that.

If radiological materials are detected during primary scanning by a portal monitor, the U.S. Customs and Border Protection conducts a secondary screening to pinpoint the location and identify radiological materials in cargo containers.

According to GAO, the screening technologies in use are the best that have been available. However, new technologies are needed to secure our borders from a wider range of radiological threats and simultaneously reduce the impact on the flow of legitimate cargo. DHS and DOE both believe that the advanced spectroscopic portal, or ASP, is the best and most likely replacement for existing portal monitors and hand-held detectors.

Earlier this year, I was pleased to join Chairman Stupak in a joint request to the GAO to review the efforts of the Department of Homeland Security to test and certify whether ASP monitors are ready for full-scale deployment. We must know that these monitors will work before we spend billions of dollars.

GAO will provide testimony today that outlines its concerns with the approach DHS has used to assess the effectiveness of the ASP monitors. It is important to point out that DHS has not completed its technical review of the ASP monitors, and the Department may be on a path toward resolving many of GAO's technical concerns.

There are several unanswered questions regarding the use of ASP monitors for primary inspections. However, the expert scientists and Government officials we have interviewed agree that the Department of Homeland Security should proceed with a limited deployment for secondary inspections. In the opinion of one DOE expert we interviewed, the deployment of ASP monitors in secondary screening will provide a radical improvement over the hand-held devices currently in use.

GAO recommends that DHS delay its certification of the ASP monitors until the Department completes all ongoing research. GAO also recommends that outside experts review this research and determine whether more testing is necessary.

These recommendations are certainly reasonable, and I certainly look forward this morning to the Department's views. However, in the meantime, I hope that available funds will be used for a limited

deployment of ASP monitors in secondary screening as soon as possible.

I look forward to the hearing, and thank the witnesses for being with us this morning. And I yield back my time.

Mr. STUPAK. I thank the gentleman.

Mr. Melancon, opening statement?

Mr. Green.

Mr. GREEN. Thank you, Mr. Chairman.

I would like to ask unanimous consent to place a full statement into the record and paraphrase it.

Mr. STUPAK. Without objection.

Mr. GREEN. This is important. I represent the Port of Houston and have been on the docks many times to watch our Customs agents, both with the personal radiation detectors, but also with the portal that they drive through. And I want to make sure that we move that cargo as fast as we can with the containers, but also that the technology is there so we can have that feeling when they are going down our roads and leaving the Port of Houston.

So, Mr. Chairman, I appreciate the hearing today, and I look forward to the testimony. And like I said, I will put my full statement into the record. Thank you.

PREPARED STATEMENT OF HON. GENE GREEN, A REPRESENTATIVE IN CONGRESS FROM  
THE STATE OF TEXAS

Mr. Chairman, thank you for holding this hearing on the selection of next generation radiation portal monitors. This is an important issue for our nation and for my hometown of Houston, and I am glad this committee is exercising its oversight in this area.

I welcome today's witnesses and I look forward to their testimony.

For the past 6 years, since the terrorist attacks on the World Trade Center and the Pentagon, preventing nuclear and radioactive material into the country, and protecting our country from a "dirty bomb" has been one of our Nation's top priorities.

We have refocused our efforts on scanning incoming cargo for dangerous radiation, and Congress has worked with the Department of Homeland Security and our ports to deploy the necessary technology to protect this country from that threat.

As we look to deploy the next generation of detection equipment, it appears DHS is rushing to deploy new portal monitor technology despite significant questions that the technology is as efficient, or as effective as DHS claims.

The current radiation portal monitors which use "Poly Vinyl Toluene" or PVT, are effective at detecting radiation, but cannot distinguish between naturally occurring radiation such as that found in tile or granite, and radiation coming from a potential threat, such as highly enriched uranium.

These false positives require a secondary inspection with a handheld "Radiation Isotope Identification Device" to determine the type and source of the radiation—the current process is effective, but labor intensive.

Because of this, DHS has moved forward toward purchasing a new technology, advanced spectroscopic portal monitors, or ASPs.

ASPs have the potential capability to detect what type of radiation is being emitted thereby negating the need for a second inspection with the intended effects of speeding up commerce through our sea and land ports, and reducing the amount of labor needed to operate the RPMs.

Unfortunately, data on the effectiveness of ASPs is inconsistent at best, as the Government Accountability Office concluded in their October 17, 2006 report, which raises serious questions as to whether DHS should be committing such a large amount of money—\$1.2 billion over 5 years—to this technology without completing and analyzing further test results.

The district I represent in Texas is home to the Port of Houston. This port is ranked first in the United States in foreign waterborne tonnage, second in the U.S. in total tonnage, and tenth in the world in total tonnage.

I work frequently with the Port Authority and business all along the port, and understand the importance of moving cargo safely and quickly.

I spoke with folks at the port when I learned we were going to have this hearing to see if they were experiencing delays due to secondary inspections, and learned that, aside from a few instances, the RPMs do not negatively impact the gate process.

This is an indication that the current RPMs are not significantly delaying commerce, and we should not rush out a new technology that has not been thoroughly tested and agreed upon by all involved entities, including the Domestic Nuclear Detection Office, the Department of Energy, and Customs and Border Protection.

There is broad consensus that PVT and RIID technology is limited, however, and more susceptible to human error, so we should be looking for a more efficient, more reliable technology.

ASPs could provide more reliable readings on radiation entering the country, but more testing needs to be done to guarantee that before we spend more than a billion dollars on ASP monitors.

I am concerned DHS is rushing to deploy this technology without thorough testing.

DHS and DNDO need to provide Congress with more comprehensive testing results and a better analysis of deployment and maintenance costs before we commit taxpayer dollars to purchase this equipment.

Again, I thank the chairman for holding his hearing on this important issue, and I look forward to the testimony from our witnesses.

Mr. STUPAK. I thank the gentleman from Texas.

People will be bouncing in and out. There is a health care hearing up on the third floor, so I think Members will be moving in and out.

The ranking member of the full committee, Mr. Barton, for an opening statement, sir.

**OPENING STATEMENT OF HON. JOE BARTON, A  
REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS**

Mr. BARTON. Thank you, Chairman Stupak, thank you, Ranking Member Whitfield, for today's hearing.

Preventing terrorists from smuggling the makings of a nuclear bomb or dirty bomb into America is our topic today. And I doubt that there are many more important topics that are going to be considered today in Congress.

The existing system used by the Department of Homeland Security to scan cargo for radioactive threat materials at ports of entry is generally effective, and I would accentuate the "generally." it is not perfect. However, some of the scanning technologies that the Department currently relies upon to do the job are outdated. I don't think there is any controversy about that. And they have inherent weaknesses. These weaknesses could leave the country vulnerable.

For instance, we cannot continue to rely on the hand-held radiation detectors to pinpoint the location of suspect nuclear materials in a fully loaded cargo container. These hand-held detectors do have well-documented problems and unacceptable, at least to me, failure rates.

The GAO has raised important concerns regarding the Department of Homeland Security's research into new scanning technology. GAO has recommended that the Department delay its certification of its best new technology, the advanced spectroscopic portal monitor.

The Department of Homeland Security has convened a summit of technical experts this past June to resolve the outstanding issues. The meeting included more than 25 people from national laboratories, Homeland Security, the Department of Energy and

the GAO. With that many experts in one room, it is surprising that people could even agree on the time of the day that they were meeting. But we have interviewed some of the people that participated in that meeting, and they all agree that the research currently under way will show whether full-scale deployment is appropriate. They also agree that we should push forward with a limited deployment of these new monitors for secondary screening at our busiest ports.

Experts at the Department of Energy do not believe any further fundamental technical research is needed to prove whether the new machines are a significant improvement over the current hand-held detectors. It would seem that a limited deployment of the new machines next year would allow the Department of Homeland Security to closely examine their effectiveness in real use out in the field.

I hope that the current disagreements between the General Accounting Office and the Department of Homeland Security can be resolved. Let's not ignore a good idea while we continue rigorous testing to perfect or understand the idea. We can do both. And because this is about shielding our people from those who mean to kill us, we need to do both. The enhanced protection from these limited deployments should not be delayed.

I hope that today's hearing is productive. I thank the chairman and ranking member for holding it, would yield back, and would point out, as has already been pointed out, there is another hearing upstairs on the Health Subcommittee, so I will be going back and forth.

But thank you, Mr. Stupak and Mr. Whitfield, for this important hearing.

Mr. STUPAK. Thank you, Mr. Barton.

Mr. Walden, opening statement, please, sir.

Mr. WALDEN. Mr. Chairman, I am going to waive my opening statement. Appreciate the opportunity. Look forward to hearing from the witnesses.

Mr. STUPAK. Mr. Murphy, opening statement, please.

**OPENING STATEMENT OF HON. TIM MURPHY, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF PENNSYLVANIA**

Mr. MURPHY. Thank you, Mr. Chairman and Ranking Member Whitfield.

Everyone recognizes that we have to take all measures that are necessary to prevent dangerous nuclear material from entering this country. And while it is important to be efficient in our border searches and preserve the rights of American citizens while doing so, the safety of the American people must take precedence. We can't sacrifice safety for the sake of efficiency, because it only takes one mistake to create a disaster for all.

The subject of this hearing is the use of advanced technology to detect dangerous nuclear materials that may be entering this country in cars, trucks and cargo containers on ships. When using this technology, the absolute worst outcome would be a false negative finding; that is, a case where the detection equipment fails to rec-

ognize the presence of a dangerous nuclear material that is actually there.

I understand that no nuclear detection equipment is absolutely perfect, but, as we move forward with advanced and efficient technologies, we must be careful not to increase the possibility that truly dangerous materials will go undetected.

I should mention one of the companies that has been selected by DHS to develop and deploy the new advanced spectroscopic portal, or the ASP, technology is Thermo Fisher Scientific, located in my congressional district. I am confident, given the proper mandate, time and guidance by DHS, Thermo Fisher and other companies will be able to produce and deploy equipment that is both more efficient and more effective than the equipment we now use.

But on the way toward this goal, I want to make sure we do not make any mistakes. We have to maintain the maximum level of protection that technology and human effort will allow. I know when I visited our borders last year at Laredo, TX, I saw some devices in use that detect radioactive items that come through. And I understand that, after there is some detection, other screening has to take place. And we are looking for a way to do this in an efficient way that keeps false negatives down to zero and also helps speed the efficiency of this whole process.

Throughout this, now, I look forward to hearing how DHS and the Domestic Nuclear Detection Office plan to conduct and hopefully improve this whole process with their current nuclear detection technology and deployment programs to minimize the possibility that dangerous nuclear materials will enter our country.

I thank you very much, and I yield back, Mr. Chairman.

Mr. STUPAK. I thank the gentleman.

That concludes the opening statements by members of the subcommittee. Any other statements for the record will be included at this time.

[The prepared statement of Mr. Dingell follows:]

PREPARED STATEMENT OF HON. JOHN D. DINGELL, A REPRESENTATIVE IN CONGRESS  
FROM THE STATE OF MICHIGAN

Today, 1 week after the sixth anniversary of 9/11, this subcommittee is holding a hearing on one of our most important homeland security priorities: the Government's ability to prevent a nuclear weapon or a radiological bomb from being smuggled into this country and detonated.

The focus of today's hearing will be a Government Accountability Office study of the Department of Homeland Security's testing of a new generation of radiation portal monitors, known as Advanced Spectroscopic Portals, or ASPs. A bipartisan request asked GAO to determine whether the Department of Homeland Security conducted fair and adequate tests of these portals before spending an estimated \$1.2 billion to replace the radiation portal monitors now in use at our ports and border crossings.

Because of concerns raised last year by GAO regarding a faulty cost-benefit analysis done by the Department of Homeland security on these new portal monitors, the Appropriations Committee, in a bipartisan action, prohibited spending the funds designated to fully purchase these new machines until the DHS Secretary certified that "a significant increase in operational effectiveness has been achieved."

Today, GAO will report that they have significant concerns about how DHS conducted tests.

First, GAO will report that the Domestic Nuclear Detection Office gave the three competing vendors advanced access to many of the packages they would be using for tests. This allowed vendors to calibrate their machinery to detect the specific radiological materials and the various combinations of shielding and masking materials prior to the actual tests.

Second, GAO will report that the tests did not assess the detection limits of these new machines. The Department of Energy specifically requested that DHS conduct tests to learn the masking limits of the new machines, based on what they had found in international commerce, but apparently, DHS could not find time to address this concern.

In sum, GAO found that DHS did not conduct a fair and balanced evaluation of the new machines. GAO does not believe the results “demonstrate a significant increase in operational effectiveness and should not be relied upon to make a full-scale production decision.”

How has DHS responded to GAO’s findings? As soon as they learned what GAO found, they launched an “end run” and created a new “independent review panel” to reassess the results. Today, we will examine how independent and qualified this new panel actually is.

In addition, DHS changed the certification date and also changed the tests that would be considered for certification—11th hour efforts to obfuscate errors in the original tests.

What DHS hasn’t done, which any reasonable taxpayer would expect, is take GAO’s advice and redo the tests—something that will cost little in comparison to the overall \$1.2 billion procurement. Retesting may cost less than half of one percent of the overall procurement, and would be money well spent. In the words of DHS Secretary Chertoff, “The greatest threat we have to prevent is a nuclear device being detonated by a terrorist.”

I want to commend the subcommittee chairman and ranking member for holding this hearing today. I hope that they will continue their strong oversight of this program. Without their work and that of our colleagues on the Appropriations Committee, I believe we would now be witnessing another DHS procurement debacle where billions of dollars are spent with few tangible results.

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Mr. STUPAK. I will now call our first panel of witnesses. On our panel we have: Dr. Gene Aloise, Director of the Natural Resources and Environmental Division at the Government Accountability Office; and Mr. Aloise is accompanied by Dr. Keith Rhodes, Chief Technologist at the Government Accountability Office; Dr. Vayl Oxford, Director of the Domestic Nuclear Detection Office within the Department of Homeland Security; and Director Oxford is accompanied by Dr. Huban Gowadia, Assistant Director for Mission Management at the Domestic Nuclear Detection Office; and Mr. Dave Huizenga, Assistant Deputy Administrator of the Department of Energy’s Office of International Material Protection and Cooperation within the National Nuclear Security Administration; and last but not least, the Honorable Paul A. Schneider, Under Secretary for Management at the Department of Homeland Security.

I would like to welcome everyone to the subcommittee.

It is the policy of this committee to take all testimony under oath.

Please be advised that witnesses have the right under the rules of the House to be advised by counsel during your testimony. Do any of you wish to be represented by counsel?

Looks like, by the nods of the head, no one wishes to be represented by counsel, so I will ask you all to please rise and raise your right hand and take the oath.

[Witnesses sworn.]

Mr. STUPAK. Let the record reflect that witnesses replied in the affirmative.

You are now under oath. That will include your opening statements.

We will now hear a 5-minute opening statement from the witnesses. The witnesses may also submit a longer statement for inclusion in the record.

I will now recognize Mr. Aloise for an opening statement. Sir, if you would, please.

**STATEMENT OF GENE ALOISE, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT DIVISION, U.S. GOVERNMENT ACCOUNTABILITY OFFICE, ACCOMPANIED BY KEITH RHODES, CHIEF TECHNOLOGIST, U.S. GOVERNMENT ACCOUNTABILITY OFFICE**

Mr. ALOISE. Thank you, Mr. Chairman.

Mr. Chairman and members of the subcommittee, we are pleased to be here today to discuss the test methods DNDO used to demonstrate the capability of the next-generation radiation detection portal monitors and whether the tests should be relied upon to make a decision to procure \$1.2 billion worth of this equipment.

Radiation detection portal monitors are a key element in our national defenses against nuclear smuggling. According to DHS and DOE, the current system of this equipment is effective and does not significantly impede the flow of commerce. DNDO wants to improve the capabilities of the existing systems with new equipment with advanced technology.

One of the major drawbacks of the new equipment is the substantially higher cost compared to the existing system of radiation detection equipment. As was earlier mentioned, in our March 2006 report we recommended that DNDO conduct a cost-benefit analysis to determine if this additional capability was worth the considerable cost. In October of last year, we concluded that DNDO's analysis did not provide a sound basis to purchase the new detection equipment because it relied on assumptions rather than actual test data. We recommended that DNDO redo the analysis based upon actual test data and, in doing so, conduct realistic testing of the new equipment's capabilities.

The fiscal year 2007 Homeland Security Appropriations Act requires that the Secretary of DHS certify that the new equipment will provide a significant increase in operational effectiveness before spending additional funds for its procurement. To meet this requirement, DNDO conducted testing of both the new and existing radiation detection equipment at the Nevada test site between February and March 2007. It is that testing that we will discuss today.

Based on our analysis of DNDO's test plan, the test results and discussion with experts from DOE's national labs and others, we are concerned that DNDO used biased test methods that enhanced the performance of the new equipment. In our view, it is highly unlikely that such favorable test circumstances would present themselves under real-world conditions.

Specifically, our concerns with the test methods are: Preliminary test runs were conducted using almost all of the materials and combinations of materials, so that vendors could collect test data and adjust their systems to identify these materials prior to formal testing. Also, DNDO's tests were not designed to test the limits of the equipment's capabilities—a critical flaw in the testing. Specifically, the tests did not use a sufficient amount of the type of materials that could be used to hide or mask dangerous sources. In addition, DNDO did not use a key standard operating procedure that

supports the use of hand-held detectors, an important part of the current radiation detection system.

As a result of concerns we and others raised that DNDO did not sufficiently test the limits of the new equipment, DNDO is planning additional studies of the test data. DNDO and the eventual users of the new equipment, Customs and Border Protection and DOE, have reached an agreement to wait and see whether the results of new studies provide useful data.

In our view and the view of other experts, these studies, which are essentially computer simulations, may provide useful data but they are not as good as actual testing with nuclear and masking materials. We are making several recommendations today designed to correct the problem of DNDO's flawed tests, including the creation of an independent testing group within DHS if more testing is needed.

Mr. Chairman, the equipment being tested is for the purpose of guarding against perhaps the No. 1 threat to our Nation: the possibility that a nuclear weapon, nuclear materials or a dirty bomb could be smuggled across our borders. We do not think it is unreasonable to ask DHS to conduct realistic and scientifically rigorous testing on any equipment that is used to guard against this threat.

That concludes my remarks. And Dr. Rhodes and I will be happy to answer any questions.

[The prepared statement of Mr. Aloise follows:]

United States Government Accountability Office

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**GAO**

Testimony  
Before the Subcommittee on Oversight  
and Investigations, Committee on Energy  
and Commerce, House of Representatives

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For Release on Delivery  
Expected at 10:00 a.m. EDT  
Tuesday, September 18, 2007

## COMBATING NUCLEAR SMUGGLING

### Additional Actions Needed to Ensure Adequate Testing of Next Generation Radiation Detection Equipment

Statement of Gene Aloise, Director  
Natural Resources and Environment

Keith Rhodes, Chief Technologist



**GAO**  
Highlights

Highlights of GAO's 2007 report, a history of failure by the Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, House of Representatives

**Why GAO Did This Study**  
The Department of Homeland Security's (DHS) Domestic Nuclear Detection Office (DNDO) is responsible for addressing the threat of nuclear smuggling. Modern detection portal monitors are key elements in our national defense against such threats. DHS has sponsored testing to develop new incursions, known as advanced spectroscopic portal (ASP) monitors. In March 2006, GAO recommended that DNDO conduct a cost-benefit analysis to determine whether the new portal monitors were worth the additional cost. In June 2006, DNDO issued its analysis. In October 2006, GAO concluded that DNDO did not provide a sound analytical basis for its decision to purchase and deploy ASP technology and recommended further testing of ASPs. DNDO completed this ASP testing at the Nevada Test Site (NTS) between February and March 2007.

GAO's statement addresses the test methods DNDO used to demonstrate the performance capabilities of the ASPs and whether the NTS test results should be relied upon to make a full-scale production decision.

**What GAO Recommended**

GAO recommends that, among other things, the Secretary of Homeland Security delay a full-scale production decision of ASPs until all relevant studies and tests have been completed, and determine in cooperation with U.S. Customs and Border Protection (CBP), the Department of Energy (DOE), and independent reviewers, whether additional testing is needed.

To view the full product, including the scope and methodology, visit [www.gao.gov](http://www.gao.gov). For more information, contact GAO Staff.

September 18, 2007

## COMBATING NUCLEAR SMUGGLING Additional Actions Needed to Ensure Adequate Testing of Next Generation Radiation Detection Equipment

### What GAO Found

Based on our analysis of DNDO's test plan, the test results, and discussions with experts from four national laboratories, we are concerned that DNDO's tests were not an objective and rigorous assessment of the ASPs' capabilities. Our concerns with the DNDO's test methods include the following:

- DNDO used biased test methods that enhanced the performance of the ASPs. Specifically, DNDO conducted numerous preliminary runs of almost all of the materials, and combinations of materials, that were used in the formal tests and then allowed ASP contractors to collect test data and adjust their systems to identify these materials. It is highly unlikely that such favorable circumstances would present themselves under real world conditions.
- DNDO's NTS tests were not designed to test the limitations of the ASPs' detection capabilities—a critical oversight in DNDO's original test plan. DNDO did not use a sufficient amount of the type of materials that would mask or hide dangerous sources and that ASPs would likely encounter at ports of entry. DOE and national laboratory officials raised these concerns to DNDO in November 2006. However, DNDO officials rejected their suggestion of including additional and more challenging masking materials because, according to DNDO, there would not be sufficient time to obtain them based on the deadline imposed by obtaining Secretarial Certification by June 26, 2007. By not collaborating with DOE until late in the test planning process, DNDO missed an important opportunity to procure a broader, more representative set of well-vetted and characterized masking materials.
- DNDO did not objectively test the performance of handheld detectors because they did not use a critical CBP standard operating procedure that is fundamental to this equipment's performance in the field.

Because of concerns raised that DNDO did not sufficiently test the limitations of ASPs, DNDO is attempting to compensate for weaknesses in the original test plan by conducting additional studies—essentially computer simulations. While DNDO, CBP, and DOE have now reached an agreement to wait and see whether the results of these studies will provide useful data regarding the ASPs' capabilities, in our view and those of other experts, computer simulations are not as good as actual testing with nuclear and masking materials.

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Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss our assessment of the testing of advanced spectroscopic portal (ASP) monitors conducted by the Domestic Nuclear Detection Office (DNDO). The results of these tests, including the methods by which they were conducted, are critically important because they will serve as the primary support for a required Department of Homeland Security (DHS) Secretarial Certification of the performance of this equipment and, in turn, authorization to spend up to \$1.2 billion for the full-scale production of the next generation of radiation detection technology to be deployed to U.S. ports of entry.

The radiation portal monitors in use today can detect the presence of radiation, but they cannot distinguish between types of radiological material. For example, they cannot tell the difference between harmless products that emit radiation, such as ceramic tile, and dangerous materials, such as highly enriched uranium that could be used to construct a nuclear weapon. DNDO is primarily responsible for preventing unauthorized nuclear or radiological materials from entering the United States. U.S. Customs and Border Protection (CBP) is responsible for screening cargo as it enters the nation at our borders, which includes operating radiation detection equipment to intercept dangerous nuclear and radiological materials. The Department of Energy (DOE) is the primary agency responsible for the international deployment of radiation detection equipment.

CBP's standard procedures require incoming cargo to pass through a radiation portal monitor to screen for the presence of radiation. This "primary inspection" alerts CBP officers when a radioactive threat might be present. If there is a potential threat, CBP procedures require a "secondary inspection." To confirm the presence of radiation, this secondary inspection usually includes a second screening by a radiation portal monitor as well as a screening by CBP officers using handheld radioactive isotope identification devices (RIIDs). These devices are used to differentiate between types of radioactive material to determine if the radiation being detected is dangerous. Both the radiation portal monitors and handheld devices are limited in their abilities to detect and identify nuclear material.

DNDO asserts that false alarms, or "nuisance alerts," result in large numbers of secondary inspections—especially at high-volume ports of entry. CBP officials believe that the number of secondary inspections required by the currently deployed system are resource intensive and

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could be reduced, allowing CBP officers to focus on other border enforcement responsibilities such as illegal immigration and drug interdiction. Importantly, however, these officials acknowledged that the current system provides the best possible radiological and nuclear screening coverage available and that it does not have a significant impact on commerce.

DHS would like to improve the capabilities of its portal monitors so that they can perform the dual roles of detecting radiation and identifying radiological materials. In this regard, DHS has sponsored research, development, and testing activities designed to create ASP portal monitors capable of performing both functions. In July 2006, DHS awarded contracts to three vendors to develop the ASPs' capabilities. These awards were based mainly on performance tests conducted at DHS's Nevada Test Site in 2005, where ten competing ASP vendors' monitors were evaluated. At the same time, three currently deployed portal monitors that use polyvinyl toluene plastic scintillators, known as PVTs, were also tested.

To ensure that DHS's substantial investment in radiation detection technology yields the greatest possible level of detection capability at the lowest possible cost, in a March 2006 GAO report,<sup>1</sup> we recommended that once the costs and capabilities of ASPs were well understood, and before any of the new equipment was purchased for deployment, the Secretary of DHS work with the Director of DNDO to analyze the costs and benefits of deploying ASPs. Further, we recommended that this analysis focus on determining whether any additional detection capability provided by the ASPs was worth the considerable additional costs. In response to our recommendation, DNDO issued its cost-benefit analysis in May 2006<sup>2</sup> and an updated, revised version in June 2006. According to senior agency officials, DNDO believes that the basic conclusions of its cost-benefit analysis showed that the new ASP monitors are a sound investment for the U.S. government.

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<sup>1</sup>GAO, *Combating Nuclear Smuggling: DHS Has Made Progress Deploying Radiation Detection Equipment at U.S. Ports of Entry, but Concerns Remain*, GAO-06-389 (Washington, D.C.: Mar. 22, 2006).

<sup>2</sup>DNDO, *Cost Benefit Analysis for Next Generation Passive Radiation Detection of Cargo at the Nation's Border Crossings*, May 30, 2006.

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In an October 2006 GAO report<sup>3</sup>, we concluded that DNDO's cost benefit analysis did not provide a sound basis for DNDO's decision to purchase and deploy ASP technology because it relied on assumptions of the anticipated performance level of ASPs instead of actual test data, and that it did not justify DHS's plan to spend \$1.2 billion to purchase and deploy ASPs. We also reported that DNDO did not assess the likelihood that ASPs would either misidentify or fail to detect nuclear or radiological material. Rather, it focused its analysis on reducing the time necessary to screen traffic at border check points and reduce the impact of any delays on commerce. We recommended that DNDO conduct further testing of ASPs and the currently deployed PVTs before spending additional funds to purchase ASPs.

Mr. Chairman, my remarks today focus on the tests conducted by DNDO at the Nevada Test Site between February and March of this year and the test methods DNDO used to demonstrate the performance capabilities of the ASPs. Specifically, I will discuss how the tests were conducted at the Nevada Test Site, and whether these test results should be relied upon to support Secretarial Certification or to make a full-scale production decision. I will also discuss current DNDO testing efforts and how they may impact future decision making.

In conducting our review, we analyzed DNDO's test plans and procedures and interviewed senior DNDO officials responsible for managing the ASP program, including the development and testing of ASP monitors. We observed DNDO's testing conducted at the Nevada Test Site and the New York Container Terminal. We obtained information on DNDO's test methods from National Institute of Standards and Technology (NIST) officials and discussed the efficacy of DNDO's test methods with experts from NIST, DOE, the private sector, and four national laboratories. We also met with senior CBP and DOE officials as the main end users of portal monitor equipment. We conducted our review in Washington, D.C. from March to September 2007 in accordance with generally accepted government auditing standards.

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<sup>3</sup>GAO, *Combating Nuclear Smuggling: DHS's Cost-Benefit Analysis to Support the Purchase of New Radiation Detection Portal Monitors Was Not Based on Available Performance Data and Did Not Fully Evaluate All the Monitors' Cost and Benefits*, GAO-07-133R (Washington, D.C.: Oct. 17, 2006).

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## In Summary

Based on our analysis of DNDO's test plan, the test results, and discussions with experts from four national laboratories, we are concerned that DNDO's tests were not an objective and rigorous assessment of the ASPs capabilities. Our concerns with DNDO's test methods include the following:

- DNDO used biased test methods that enhanced the performance of the ASPs. Specifically, DNDO conducted numerous preliminary runs of almost all of the materials, and combinations of materials, that were used in the formal tests and then allowed ASP contractors to collect test data and adjust their systems to identify these materials. It is highly unlikely that such favorable circumstances would present themselves under real world conditions.
- DNDO's tests conducted at the Nevada Test Site were not designed to test the limitations of the ASPs' detection capabilities—a critical oversight in DNDO's original test plan. DNDO did not use a sufficient amount of the type of materials that would mask or hide dangerous sources and that ASPs would likely encounter at ports of entry. DOE and national laboratory<sup>4</sup> officials raised these concerns to DNDO in November 2006. However, DNDO officials rejected their suggestion of including additional and more challenging masking materials because, according to DNDO, it would not be able to obtain such materials in time to meet the Secretarial Certification deadline. By not collaborating with DOE until late in the test planning process, DNDO missed an important opportunity to procure a broader, more representative set of well-vetted and characterized masking materials.
- DNDO did not objectively test the performance of handheld detectors because it did not use a critical CBP standard operating procedure that is fundamental to this equipment's performance in the field.

As a result of concerns raised that DNDO's NTS tests did not sufficiently test the limitations of ASPs, DNDO is now attempting to compensate for weaknesses in the original test plan by conducting additional testing known as injection studies—essentially computer simulations. While DNDO, CBP, and DOE have now reached an agreement to wait and see

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<sup>4</sup>DOE manages the largest laboratory system of its kind in the world. The mission of DOE's 22 laboratories has evolved. Originally created to design and build atomic weapons, these laboratories have since expanded to conduct research in many disciplines—from high-energy physics to advanced computing.

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whether the results of these studies will provide useful data regarding the ASPs' capabilities, in our view and those of other experts, computer simulations are not as good as actual testing with nuclear and masking materials.

We are recommending that the Secretary of DHS delay certification until all tests and studies have been completed and validated, and all test results have been provided to relevant parties, including CBP and DOE. If DNDO, CBP and DOE determine that additional testing is needed, then an independent group within DHS should be formed to conduct this testing. In addition, the results of the tests and analyses should be reported to the appropriate congressional committees before large scale purchases are made.

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## Background

The Department of Homeland Security Appropriations Act for Fiscal Year 2007 states that "none of the funds appropriated...shall be obligated for full scale procurement of [ASP] monitors until the Secretary of Homeland Security has certified...that a significant increase in operational effectiveness will be achieved."<sup>3</sup> DNDO noted that certification would meet DHS guidelines for the review and approval of complex acquisitions. Specifically, DNDO stated that the Secretary's decision would be made in the context of DHS "Key Decision Point 3," which details the review and approval necessary for DHS acquisition programs to move from the "Capability Development and Demonstration" phase to the "Production and Deployment Phase."

To meet the statutory requirement to certify the ASPs will provide a "significant increase in operational effectiveness," and requirements outlined in DHS Management Directive 1400, DNDO, with input from subject matter experts, developed a series of tests intended to demonstrate, among other things, ASP performance and deployment readiness. The tests were conducted at several venues, including the Nevada Test Site, the New York Container Terminal, the Pacific Northwest National Laboratory, and five ports of entry. DNDO stated that its request for full-scale production approval would be based upon completed and documented results of these tests. To meet the Secretary's goal of

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<sup>3</sup>Department of Homeland Security Appropriations Act for Fiscal Year 2007, Pub. L. No. 109-295, tit. IV, 120 Stat. 1355, 1376 (October 4, 2006).

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deploying 225 ASPs by the end of calendar year 2008, Secretarial Certification was scheduled for June 26, 2007.

To guide the test operations, DNDO defined a set of Critical Operational Issues that outlined the tests' technical objectives and provided the baseline to measure demonstrated effectiveness. The purpose of the Critical Operational Issue 1 is to "verify operational effectiveness" of ASPs and determine whether "ASP systems significantly increase operational effectiveness relative to the current generation detection and identification system." DNDO conducted a series of tests at the Nevada Test Site, the single focus of which, according to DNDO, was to resolve Critical Operational Issue 1. According to DNDO, these tests began in February 2007 and concluded in March 2007. DNDO's Nevada Test Site test plan, dated January 12, 2007, identified three primary test objectives comparing the operational effectiveness of the ASP systems with existing detection and identification systems at current high-volume operational thresholds. Specifically, DNDO sought to determine the ASPs' probability to (1) detect and identify nuclear and radiological threats (2) discriminate threat and non-threat radionuclides in primary [screening positions], and (3) detect and identify threat radionuclides in the presence of non-threat radionuclides.

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### How the Tests at the Nevada Test Site Were Conducted

The Nevada Test Site test plan had two key components. First, DNDO developed guidelines for basic test operations and procedures, including test goals and expectations, test tasks and requirements, and roles and responsibilities of personnel involved in the testing, including the ASP contractors. The second component involved the National Institute of Standards and Technology developing test protocols that defined, among other things, how many times a container carrying test materials would need to be driven through portal monitors in order to obtain statistically relevant results.

DNDO's tests at the Nevada Test Site were designed to compare the current system—using PVTs in primary inspections and a PVT and RIID combination in secondary inspections—to other configurations including PVTs in primary and ASPs in secondary, and ASPs in both primary and secondary inspection positions. DNDO tested three ASPs and four PVTs. The ASP vendors included Thermo, Raytheon, and Canberra. The PVT vendors included SAIC, TSA, and Ludlum. According to the test plan, to the greatest extent possible, PVT, ASP, and RIID handheld devices would be operated consistent with approved CBP standard operating procedures.

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Prior to "formal" collection of the data that would be used to support the resolution of Critical Operational Issue 1, DNDO conducted a series of tests it referred to as "dry runs" and "dress rehearsals." The purpose of the dry runs was to, among other things, verify ASP systems' software performance against representative test materials and allow test teams and system contractors to identify and implement software and hardware improvements to ASP systems. The purpose of the dress rehearsals was to observe the ASPs in operation against representative test scenarios and allow the test team to, among other things:

- develop confidence in the reliability of the ASP system so that operators and data analysts would know what to expect and what data to collect during the formal test,
- collect sample test data, and
- determine what errors were likely to occur in the data collection process and eliminate opportunities for error.

In addition to improving ASP performance through dry runs and dress rehearsals conducted prior to formal data collection, ASP contractors were also significantly involved in the Nevada Test Site test processes. Specifically, the test plan stated that "[ASP] contractor involvement was an integral part of the NTS test events to ensure the systems performed as designed for the duration of the test." Furthermore, ASP contractors were available on site to repair their system at the request of the test director and to provide quality control support of the test data through real time monitoring of available data. DNDO stated that Pacific Northwest National Laboratory representatives were also on site to provide the same services for the PVT systems.

DNDO conducted its formal tests in two phases. The first, called Phase 1, was designed to support resolution of Critical Operational Issue 1 with high statistical confidence. DNDO told us on multiple occasions and in a written response that only data collected during Phase 1 would be included in the final report presented to the Secretary to request ASP certification. According to DNDO, the second, called Phase 3, provided data for algorithm development which targeted specific and known areas in need of work and data to aid in the development of secondary screening operations and procedures. According to DNDO documentation, Phase 3 testing was not in support of the full-scale production decision. Further, DNDO stated that Phase 3 testing consisted of relatively small sample sizes since the data would not support estimating the probability of detection with a high confidence level.

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On May 30, 2007, following the formal tests and the scoring of their results, DNDO told GAO that it had conducted additional tests that DNDO termed "Special Testing." The details of these tests were not outlined in the Nevada Test Site test plan. On June 20, 2007, DNDO provided GAO with a test plan document entitled "ASP Special Testing" which described the test sources used to conduct the tests but did not say when the tests took place. According to DNDO, special testing was conducted throughout the formal Phase 1 testing process and included 12 combinations of threat, masking, and shielding materials that differed from "dry run," "dress rehearsal," and formal tests. DNDO also stated that the tests were "blind," meaning that neither DNDO testing officials nor the ASP vendors knew what sources would be included in the tests. According to DNDO, these special tests were recommended by subject matter experts outside the ASP program to address the limitations of the original NTS test plan, including

- available time and funding resources,
- special nuclear material sources, and
- the number of test configurations that could be incorporated in the test plan, including source isotope and activity, shielding materials and thicknesses, masking materials, vehicle types, and measurement conditions.

Unlike the formal tests, National Institute of Standards and Technology officials were not involved in determining the number of test runs necessary to obtain statistically relevant results for the special tests.

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### **DNDO's Test Methods Raise Concerns Regarding the Reliability of Test Results**

Based on our analysis of DNDO's test plan, the test results, and discussions with experts from four national laboratories, we are concerned that DNDO used biased test methods that enhanced the performance of the ASPs. In the dry runs and dress rehearsals, DNDO conducted many preliminary runs of radiological, nuclear, masking, and shielding materials so that ASP contractors could collect data on the radiation being emitted, and modify their software accordingly. Specifically, we are concerned because almost all of the materials, and most combinations of materials, DNDO used in the formal tests were identical to those that the ASP contractors had specifically set their ASPs to identify during the dry runs and dress rehearsals. It is highly unlikely that such favorable circumstances would present themselves under real world conditions.

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A key component of the NTS tests was to test the ASPs' ability to detect and identify dangerous materials, specifically when that material was masked or "hidden" by benign radioactive materials. Based on our analysis, the masking materials DNDO used at NTS did not sufficiently test the performance limits of the ASPs. DOE national laboratory officials raised similar concerns to DNDO after reviewing a draft of the test plan in November 2006. These officials stated that the masking materials DNDO planned to use in its tests did not emit enough radiation to mask the presence of nuclear materials in a shipping container and noted that many of the materials that DOE program officials regularly observe passing through international ports emit significantly higher levels of radiation than the masking materials DNDO used for its tests.

DNDO officials told us that the masking materials used at the Nevada Test Site represented the average emissions seen in the stream of commerce at the New York Container Terminal. However, according to data accumulated as part of DOE's program to secure international ports (the Megaports program), a significant percentage of cargo passing through one European port potentially on its way to the United States has emission levels greater than the average radiation level for cargo that typically sets off radiation detection alarms. Importantly, DNDO officials told us that the masking materials used at the Nevada Test Site were not intended to provide insight into the limits of ASP detection capabilities. Yet, DNDO's own test plan for "ASP Special Testing" states, "The DNDO ASP NTS Test Plan was designed to... measure capabilities and limitations in current ASP systems."

In addition, the NTS tests did not objectively test the ASPs against the currently deployed radiation detection system. DNDO's test plan stated that, to the greatest extent possible, PVT, ASP, and RIID handheld devices would be operated consistent with approved CBP standard operating procedures. However, after analyzing test results and procedures used at the Nevada Test Site, CBP officials determined that DNDO had, in fact, not followed a key CBP procedure. In particular, if a threat is identified during a secondary screening, or if the result of the RIID screening isn't definitive, CBP procedures require officers to send the data to CBP's Laboratories and Scientific Services for further guidance. DNDO did not include this critical step in its formal tests. CBP officials also expressed concern with DNDO's preliminary test results when we met with them in May 2007.

In regards to the special tests DNDO conducted, based on what DNDO has told us and our own evaluation of the special test plan, we note that

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- because DNDO did not consult NIST on the design of the blind tests, we do not know the statistical significance of the results, and
  - the tests were not entirely blind because some of the nuclear materials used in the blind tests were also used to calibrate the ASPs on a daily basis.

During the course of our work, CBP, DOE, and national laboratory officials we spoke to voiced concern about their lack of involvement in the planning and execution of the Nevada Test Site tests. We raised our concerns about this issue and those of DOE and CBP to DNDO's attention on multiple occasions. In response to these concerns, specifically those posed by DOE, DNDO convened a conference on June 27, 2007, of technical experts to discuss the Nevada test results and the methods DNDO used to test the effects of masking materials on what the ASPs are able to detect. As a result of discussions held during that meeting, subject matter experts agreed that computer-simulated injection studies could help determine the ASPs' ability to detect threats in the presence of highly radioactive masking material.

According to a Pacific Northwest National Laboratory report submitted to DNDO in December 2006<sup>6</sup>, injection studies are particularly useful for measuring the relative performance of algorithms, but their results should not be construed as a measure of (system) vulnerability. To assess the limits of portal monitors' capabilities, the Pacific Northwest National Laboratory report states that actual testing should be conducted using threat objects immersed in containers with various masking agents, shielding, and cargo. DNDO officials stated at the meeting that further testing could be scheduled, if necessary, to fully satisfy DOE concerns.

On July 20, 2007, DHS Secretary Chertoff notified certain members of the Congress that he planned to convene an independent expert panel to review DNDO's test procedures, test results, associated technology assessments, and cost-benefit analyses to support the final decision to deploy ASPs. In making this announcement, Secretary Chertoff noted the national importance of developing highly effective radiation detection and identification capabilities as one of the main reasons for seeking an independent review of DNDO's actions. On August 30, 2007, the DHS Undersecretary for Management recommended that the Secretary of

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<sup>6</sup> PNNL, Energy Window Ratio Algorithms For Plastic Scintillator Portal Monitors: Development, Deployment and Performance, PNNL-16283 (Richland, WA: December, 2006).

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Homeland Security delay Secretarial Certification of ASPs for an additional two months. According to DHS, the current delay is in order to provide CBP more time to field ASP systems, a concern CBP had raised early in our review.

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## Conclusions

Effectively detecting and identifying radiological or nuclear threats at U.S. borders and ports of entry is a vital matter of national security, and developing new and advanced technology is critical to U.S. efforts to prevent a potential attack. However, it is also critical to fully understand the strengths and weaknesses of any next generation radiation detection technology before it is deployed in the field and to know, to the greatest extent possible, when or how that equipment may fail.

In our view, the tests conducted by DNDO at the Nevada Test Site between February and March 2007 used biased test methods and were not an objective assessment of the ASPs' performance capabilities. We believe that DNDO's test methods—specifically, conducting dry runs and dress rehearsals with contractors prior to formal testing—enhanced the performance of the ASPs beyond what they are likely to achieve in actual use. Furthermore, the tests were not a rigorous evaluation of the ASPs' capabilities, but rather a developmental demonstration of ASP performance under controlled conditions which did not test the limitations of the ASP systems.

As a result of DNDO's test methods and the limits of the tests—including a need to meet a secretarial certification deadline and the limited configurations of special nuclear material sources, masking, and shielding materials used—we believe that the results of the tests conducted at the Nevada Test Site do not demonstrate a "significant increase in operational effectiveness" relative to the current detection system, and cannot be relied upon to make a full-scale production decision.

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## Recommendations

We recommend that the Secretary of Homeland Security take the following actions:

- Delay Secretarial Certification and full-scale production decisions of the ASPs until all relevant tests and studies have been completed and limitations to these tests and studies have been identified and addressed. Furthermore, results of these tests and studies should be validated and made fully transparent to DOE, CBP, and other relevant parties.

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- Once the tests and studies have been completed, evaluated, and validated, DHS should determine in cooperation with CBP, DOE, and other stakeholders including independent reviewers, if additional testing is needed.
  - If additional testing is needed, the Secretary should appoint an independent group within DHS, not aligned with the ASP acquisition process, to conduct objective, comprehensive, and transparent testing that realistically demonstrates the capabilities and limitations of the ASP system. This independent group would be separate from the recently appointed independent review panel.
  - Finally, the results of the tests and analyses should be reported to the appropriate congressional committees before large scale purchases of ASP's are made.

Mr. Chairman, this concludes our prepared statement. We would be happy to respond to any questions you or other members of the subcommittee may have.

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### GAO Contact and Staff Acknowledgements

For further information about this testimony, please contact me, Gene Aloise, at (202) 512-3841 or at [aloisee@gao.gov](mailto:aloisee@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Erika D. Carter, Alison O'Neill, Jim Shafer, Daren Sweeney, and Eugene Wisnoski made key contributions to this statement.

Mr. STUPAK. Thank you.

Now, Mr. Oxford, opening statement, please, sir.

**STATEMENT OF VAYL OXFORD, DIRECTOR, DOMESTIC NUCLEAR DETECTION OFFICE, U.S. DEPARTMENT OF HOMELAND SECURITY, ACCOMPANIED BY HUBAN A. GOWADIA, ASSISTANT DIRECTOR FOR MISSION MANAGEMENT, DOMESTIC NUCLEAR DETECTION OFFICE, U.S. DEPARTMENT OF HOMELAND SECURITY**

Mr. OXFORD. Good morning, Chairman Stupak, Ranking Member Whitfield, and other distinguished members of the subcommittee. I would like to thank the committee for the opportunity to discuss what DNDO is doing to protect this Nation against a nuclear or radiological attack.

Also, I would like to take this opportunity to publicly thank the many partners we have had in improving our technical capabilities, including CBP and DOE, and the larger technical community, to include five national and Federal laboratories, and the National Institute of Standards and Technology. I am confident in saying that this is the first program of its type to draw from this breadth of talent.

We at DNDO are optimistic about the ASP program and its performance capabilities as demonstrated thus far, and we hope to show you more during the course of this testimony.

Regarding the nuclear threat and ASP development, there can be no doubt, as has already been referenced this morning, that the threat of a nuclear attack against the United States is one of the gravest that we face, and all efforts possible must be directed at reducing the risk of such an attack. DNDO is committed to doing everything possible to prevent a nuclear 9/11.

Shortly after 9/11, Customs made the prudent decision to deploy commercially available radiation detection equipment to address a glaring vulnerability in our Nation's homeland security capabilities. With that said, there were well-understood limitations to these systems.

The fact remains that we are facing a challenge at our ports and borders in trying to balance the flow of goods and commerce, while addressing this critical threat. Since that time, the Nation has matured significantly in thinking about homeland security and nuclear threats.

The first step was the formation of DHS, and the second was the formation of my office, the Domestic Nuclear Detection Office, an interagency office agreed to by the executive branch. Upon its formation, DNDO took the responsibility for improving our nuclear detection capabilities, with a priority to improve operations at seaports and land border crossings.

ASP systems represent a leap forward in this capability, promising to identify threats and drastically reduce nuisance alarms caused by innocent materials, provide better information to our Customs Officers, and resolve difficult cases. Given the importance of this program, DHS has gone to great lengths to ensure that the performance of ASP systems is well-understood and that the systems represent a significant improvement in operational effectiveness.

The test program that we designed and implemented is as rigorous a test program as the U.S. Government has ever conducted. To ensure that systems performance was well-known, DNDO conducted over 6 months of testing, resulting in over 100,000 data points.

Testing was designed to evaluate all aspects of ASP performance, including the following: system qualification tests to demonstrate that ASP units are manufactured in accordance with specified design requirements; environmental product qualification tests to determine if the system can reliably perform within the operational environment; tests at the Nevada Test Site to evaluate ASP technical performance and support ASP algorithm development and secondary concepts of operation; New York Container Terminal tests to determine if ASP demonstrates a significant reduction in referral rates to secondary inspection compared to current PVT systems in a real stream of commerce; integration testing to determine if ASP systems are ready to deploy in an operational setting for secondary deployment; and finally, field validation testing with Customs and Border Protection to identify operational issues, take corrective action and ensure that CBP Officers are comfortable with the systems.

We have been thorough and rigorous in our approach, ensuring that both we and CBP are satisfied with ASP systems both technically and operationally before we make any recommendations to the Secretary.

In conclusion, while the current ASP systems represent a significant step forward in meeting our challenges, we will not stop here. We will continue to work with CBP and DOE to identify needed improvements to further optimize performance.

Perhaps more than anything else, I caution against delaying progress in the pursuit of perfection and allowing critical limitations in our current capabilities to remain unaddressed. Rather, we should focus on developing a path forward to address this threat.

Chairman Stupak, Ranking Member Whitfield and members of the subcommittee, I thank you for your attention and will be happy to answer any questions you may have.

[The prepared statement of Mr. Oxford follows:]

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**Opening Statement**

**Of**

**Mr. Vayl S. Oxford**

**Director, Domestic Nuclear Detection Office**

**Department of Homeland Security**

**Before the House Committee on Energy and Commerce**

**Subcommittee on Oversight and Investigations**

**“Nuclear Terrorism Prevention: Status Report on the Federal Government’s**

**Assessment of New Radiation Detection Monitors”**

**September 18, 2007**

**Introduction**

Good morning, Chairman Stupak, Ranking Member Whitfield, and distinguished members of the subcommittee. I am Vayl Oxford, Director of the Domestic Nuclear Detection Office (DNDO), and I would like to thank the committee for the opportunity to discuss the progress we are making in testing and evaluating next-generation radiological and nuclear detection technologies. In particular, I would like to describe how we work with our partners and customers to develop requirements and evaluate new technologies, how we have gone about evaluating Advanced Spectroscopic Portals (ASPs), and how those tests relate to the certification process required by the FY 2007 Appropriations bill. We at DNDO are optimistic about the system performance capabilities demonstrated, thus far, by the ASP systems, and hope that this hearing can provide clarity to any lingering questions.

DNDO recognizes that there have been concerns raised by the Government Accountability Office (GAO) with regards to the test campaign we performed for the ASP Program. DNDO has cooperated with the GAO to provide information and responded to questions pertaining to our test procedures, methodology, planning, and all final results. It is my hope that the information we provide today, including our path forward for the ASP program, is testament to the comprehensive and rigorous evaluation we have given the ASP program and, in turn, addresses the Committee's concerns pertaining to assessments of next-generation radiation detection technology.

**DNDO's Unique Role**

As you know, DNDO was chartered on April 15, 2005, through a joint presidential directive, NSPD- 43/HSPD-14 to coordinate efforts of Federal, State, and local partners to strengthen national nuclear and radiological detection capabilities, to address the threat of nuclear terrorism. DNDO has the unique role within the Federal government of ensuring that nuclear and radiation detection efforts across the U.S. government are integrated, while also performing related

outreach, training, and information sharing opportunities for State and local authorities. Working with our partners in DHS and other Departments, including U.S. Customs and Border Protection (CBP) and the Department of Energy (DOE), DNDO works to develop coherent and integrated strategies for preventing the illicit introduction or transportation of nuclear or radiological materials and enhancing the global nuclear detection architecture. DNDO is able to provide consistent planning, performance testing, operational protocols, and reporting requirements by emphasizing coordination amongst multiple agencies and programs. Moreover, DNDO develops, procures, and supports the deployment of detection equipment within the United States, while also supporting field operations. This model of centralized planning and reporting with decentralized execution ensures that DNDO can focus on improving, standardizing, and integrating the entire Global Nuclear Detection Architecture, while working with numerous partners to ensure its robust implementation.

#### **ASP Systems**

There can be no doubt about the seriousness of the threat of nuclear terrorism. According to the 9/11 Commission, one of the gravest threats facing this Nation is the possibility of a nuclear attack. In this light, CBP wisely moved to rapidly deploy polyvinyl toluene (PVT)-based radiation portal monitors (RPMs) to provide an immediate scanning capability shortly after 9/11. The existing system (PVT-RPM and handheld detector) constituted the best commercially available system for CBP at the time. However, there are known detection limitations to the current systems, and DNDO has been working with CBP to address these limitations.

As indicated by our test results to date, ASP systems are designed to provide significant improvements in performance compared to current systems, and being algorithm-based, have the capability to be continuously improved over time. DNDO and CBP believe that tests performed to date have shown that ASP systems provide enhanced detection and identification capabilities while improving the efficiency of the CBP scanning process.

**Testing ASP**

As part of the development and acquisition process, DNDO has undertaken a very rigorous test campaign to evaluate ASP systems. The ASP test campaign consisted of a full range of test phases designed to evaluate all aspects of ASP performance and operations. We worked in coordination with subject matter experts (SMEs) from CBP, DOE, National Institutes of Standards and Technology (NIST), the Environmental Measurements Laboratory (EML), Sandia National Laboratory (SNL), Pacific Northwest National Laboratory (PNNL), Los Alamos National Laboratory (LANL), Brookhaven National Laboratory (BNL) and National Security Technologies (NSTec) for test planning, execution, and analysis.

The ASP test campaign consists of the following test events:

- (1) System Qualification Test to demonstrate that ASP units are manufactured in accordance with the processes and controls meeting the specified design requirements;
- (2) Environmental Product Qualification Test to determine if the system can reliably perform within the environment in which it will be operated and maintained;
- (3) Nevada Test Site Tests (Phases I and III) to evaluate systems performance and support ASP algorithm development and secondary CONOPS, and Blind or Special Tests to evaluate vulnerabilities in the test plan;
- (4) New York Container Terminal Test to determine if ASP demonstrates a significant reduction in referral rates to secondary inspection, compared to PVTs in a real stream of commerce;
- (5) Integration testing to determine whether the ASP systems are ready to deploy in an operational setting for secondary deployment;
- (6) Field Validation to identify operational issues, take corrective action and ensure that the systems provide an appropriate level of functionality.

Excluding some of the ongoing tests events, there have been approximately 100,000 test runs in this test campaign.

**Certification**

The Fiscal Year 2007 Homeland Security Appropriations Act (P.L. 109-295) required that the Secretary certify ASP system performance before DNDO commits to full-rate production and deployment. The language specifically stated, "That none of the funds appropriated under this heading shall be obligated for full scale procurement of Advanced Spectroscopic Portal Monitors until the Secretary of Homeland Security has certified through a report to the Committees on Appropriations of the Senate and the House of Representatives that a significant increase in operational effectiveness will be achieved."

The Secretary of Homeland Security will decide to certify ASP systems on the basis of recommendations from DNDO, CBP, and the Independent Review.

**Conclusion**

It is the intention of DNDO to rigorously test and evaluate emerging technologies, in order to make procurement and acquisition decisions that will best address the detection requirements prescribed by the Global Nuclear Detection Architecture. We work with our interagency and intra-agency partners to ensure that deployment and operability of our systems enhance security and efficiency without unnecessarily impeding commerce.

We plan to work with the GAO and our customers to foster better understanding of our development, acquisition, and testing approaches and will share results of our testing with Congress. This concludes my prepared statement. With the committee's permission, I request my formal statement be submitted for the record. Chairman Stupak, Ranking Member Whitfield, and members of the Subcommittee, I thank you for your attention and will be happy to answer any questions you may have.

Mr. STUPAK. Thank you, sir.

Mr. Huizenga, your opening statement, please, sir.

**STATEMENT OF DAVID HUIZENGA, ASSISTANT DEPUTY ADMINISTRATOR, OFFICE OF INTERNATIONAL MATERIAL PROTECTION AND COOPERATION, NATIONAL NUCLEAR SECURITY ADMINISTRATION, U.S. DEPARTMENT OF ENERGY**

Mr. HUIZENGA. Thank you, Mr. Chairman and Ranking Member Whitfield and other distinguished members of the subcommittee.

Today I will be discussing the Department of Energy's international role in the administration's efforts to prevent a nuclear terrorist attack against our country.

Our first goal is to work with our foreign partners to secure nuclear weapons and nuclear weapons-usable material at the source. By upgrading security at vulnerable nuclear sites in the Russian Federation and other former Soviet states and countries of concern, we deny terrorists access to nuclear weapons and the essential element of a nuclear weapon, the fissile material.

Our second goal is to prevent international smuggling of nuclear and radiological material. The Second Line of Defense program, or SLD program, started in 1998, is dedicated to this important effort. The mission is to detect special nuclear material, essentially large or extremely small quantities of plutonium or highly enriched uranium, as well as radiological materials that could be potentially used as a dirty bomb.

We are making steady progress on securing approximately 450 border crossings, airports and feeder seaports in Russia, the former Soviet states, Eastern Europe and Central Asia, as well as equipping approximately 75 major international seaports with radiation detection equipment used to scan cargo containers.

Detection of dangerous radioactive material is therefore at the heart of our mission. And over the last 15 years, we have worked with the technical experts to successfully deploy more than 1,500 radiation portal monitors at over 300 facilities in 25 countries. In Russia alone, we have already equipped over a hundred sites with detection equipment.

Unfortunately, we have clear evidence that the detection systems are working. In 2003, for example, Georgian border guards, using U.S.-provided portal monitoring equipment at the Sadakhlo border crossing with Armenia, detected and seized approximately 173 grams of highly enriched uranium.

The centerpiece of every installation completed under the Second Line of Defense program is the radiation portal monitor, or RPM. We deploy RPMs that use plastic scintillators made of polyvinyl toluene, or PVT, to detect gamma signatures and modulated helium three tubes to detect neutrons. The PVT-based RPMs use a proven technology capable of operating effectively in varied and often harsh environmental conditions.

This technology was developed to ensure nuclear material security at the DOE weapons sites. These monitors have been tested and evaluated by national laboratory technical experts for over three decades. The RPM detects the presence of radiation and feeds an alarm information to the operators, typically Customs agents or border guards. When the alarm is triggered, the vehicle or the pe-

destrian is retained, and hand-held equipment is used as part of the secondary inspection to identify the specific radio isotope that caused the alarm.

The hand-held identification equipment that we deploy uses commercially available sodium-iodide or germanium technology. Experience has shown that effective use of the hand-held equipment is highly dependent on the skill and the training of the on-site official as they try to locate the source of the alarm. Expediting proper adjudication of alarms through these secondary inspections is particularly important in high-volume locations like the major seaports.

It is DOE's judgment that the use of the advanced spectroscopic portal monitors, the ASPs we are talking about today, will improve the rate and accuracy of the alarm resolution in high-volume settings.

In order to determine the effectiveness of the ASPs, DOE is working with DNDO to ensure that the increased ability of the monitors to differentiate threats does not compromise threat detection. I have asked the staff at Los Alamos National Laboratory to work with DNDO and lead a multi-lab effort to collect data on the spectra of well-characterized, unshielded, special nuclear material—essentially threat objects—that can be controlled carefully at the laboratory. These data will be combined with the stream of commerce data already collected by DHS and will provide supplemental information to help validate the upcoming injection studies.

In the near term, DOE is purchasing a limited number of ASPs via contracts awarded by DNDO. Our plan is to deploy the ASPs at some of our megaports locations, or our large seaports overseas, for use in secondary inspection.

Under the planned approach, once the PVT monitor alarms in the primary inspection point, the container will be sent to the ASP for secondary inspection. The ASP, with a much larger detection surface area, larger libraries, and algorithms than the hand-held detectors, should provide enhanced capability to effectively identify specific isotopes. This will aid the Customs official in determining whether a container presents an increased risk of nuclear material.

If the ASPs are demonstrated to be reliable under a variety of field conditions, we would hope to deploy them to the remaining megaports installations for secondary inspections.

In closing, I would like to point out that DOE and DHS are working closely together to improve our nuclear and radiological detection capabilities. We share a common objective of preventing terrorists and states of concern from obtaining and smuggling nuclear materials that can be used in acts of terrorism against our country and our allies.

I want to thank the administration and Congress for their continued support of our program. And I would be happy to answer any questions you may have.

[The prepared statement of Mr. Huizenga follows:]

#### TESTIMONY OF DAVID HUIZENGA

Thank you Chairman Stupak, Ranking Member Whitfield and other distinguished members of the subcommittee. Today I will be discussing the Department of Energy's National Nuclear Security Administration (NNSA) role in the interagency effort to prevent a nuclear terrorist attack against this country. More specifically, I will

focus on the role of my office, the Office of International Material Protection and Cooperation, as a part of this larger, coordinated effort.

Before I start the technical part of my testimony concerning radiation detection monitors, I would like to provide a short background on the overall mission of my office. I believe this will demonstrate the history and expertise that DOE brings to bear on the subject of the hearing today. Detection of dangerous radioactive materials is at the heart of our mission and over the last 15 years we have worked with technical experts to successfully deploy more than 1500 radiation portal monitors (RPMs) at over 300 facilities and border crossings within over 25 countries.

#### SECURE AT THE SOURCE

The first goal of my office is to secure nuclear weapons and weapons-useable nuclear materials by upgrading security at vulnerable nuclear sites in the Russian Federation and other countries of greatest concern to the U.S. national security. By working to secure nuclear materials and weapons at the point of origin, we continue to make important strides toward denying terrorists and states of concern access to nuclear weapons and the essential element of a nuclear weapon: the fissile material. We are working at 125 nuclear sites and have secured hundreds of actual nuclear weapons and enough nuclear material for thousands of additional warheads. We have completed security upgrades at 160 buildings containing weapons useable material, more than 75% of the Russian nuclear warhead sites of concern, including 39 Russian Navy nuclear sites, and 15 Russian Strategic Rocket Sites. Work is underway at the balance of sites and is on track to be completed by the end of 2008.

#### SECOND LINE OF DEFENSE

The second goal of my office is to prevent smuggling of nuclear and radiological material at international seaports, airports and land border crossings. The Second Line of Defense program, referred to as SLD, was started in 1998 and is dedicated to this important effort. The SLD program is composed of two equally important offices: the Core Program and the Megaports Initiative. The Core Program focuses on securing border crossings, airports, and feeder seaports in Russia and other former Soviet States, Eastern Europe, Central Asia, and other key countries around the world. Under the Core program, approximately 450 sites have been identified to receive detection equipment. In Russia alone we have already equipped over 100 of these sites. Under our Megaports Initiative, we work closely with the Department of Homeland Security's Customs and Border Protection (CBP) and with the host governments to equip major international seaports with radiation detection equipment to screen cargo containers for nuclear and other radiological materials. We have identified approximately 75 seaports of interest to us for implementation and are currently at various stages of engagement with approximately 40 countries in this regard.

DOE/NNSA's SLD Program is also playing a key role in implementing the Secure Freight Initiative (SFI), a joint DHS-DOE and DOS effort started last December. This is an unprecedented effort to build upon existing port security measures by enhancing the U.S. Government's ability to scan containers overseas for nuclear and radiological materials using both radiation detection equipment and non-intrusive imaging equipment to assess the risk of inbound containers. Under SFI, DHS is providing non-intrusive imaging systems to host governments while DOE is deploying radiation portal monitors, optical character recognition systems, and is developing and installing the communications systems necessary to integrate data from varying systems together to provide a more comprehensive set of information about U.S.-bound containers. Data on all scanned containers is provided to the host government. Data on U.S.-bound containers is segregated and provided to U.S. Customs officials on the ground that also send the information back to the National Targeting Center in Northern Virginia for incorporation into existing risk assessment systems. This effort is currently being implemented at seven foreign ports located in Pakistan, Honduras, the United Kingdom, Oman, Singapore, South Korea, and Hong Kong.

Unfortunately, we have clear evidence that the detection systems are necessary. In 2003, Georgian border guards, using U.S.-provided portal monitoring equipment at the Sadakhlo border crossing with Armenia, detected and seized approximately 173 grams of highly enriched uranium carried by an Armenian national. Also, in late 2005, a Megaports RPM picked up a small neutron signal from a scrap metal container leaving Sri Lanka bound for India. The source of the signal turned out to be an extremely small neutron source, which was found by the Indian authorities.

I hope the above information will be useful to the Subcommittee as I move forward to provide the technical information that you have requested concerning the nuclear detection equipment installed by the SLD program

#### SLD INTEGRATED DETECTION SYSTEM

To understand how the SLD system works, it is important to understand the interface between the fixed radiation portal monitors, the alarm station, and secondary inspections with hand-held detectors. The centerpiece of every installation completed under the SLD Core and Megaports Programs is the radiation portal monitor or RPM. We deploy RPMs that use plastic scintillators made of polyvinyl toluene (PVT) to detect gamma signatures and Helium 3 tubes to detect neutrons. The primary mission of the SLD Program is to detect special nuclear material (SNM), even small quantities of SNM, in particular plutonium and highly-enriched uranium—materials that can be used to make an improvised nuclear device or that may have already been incorporated into a device. The equipment that we deploy can also detect other radioactive materials suitable for use in radiological dispersal devices, often referred to as “dirty bombs”.

I would like to emphasize that the PVT-based nuclear detection technology deployed by the SLD program is proven technology, capable of operating effectively in varied, and in many instances harsh environmental conditions. This technology was developed to ensure nuclear material security at DOE weapons sites and the specific monitors that we deploy have been tested and evaluated by our National Laboratory technical experts for over three decades. Indeed, NNSA installs this same type of monitor at the foreign weapons laboratories and nuclear facilities to prevent insiders from smuggling SNM out of these facilities. Our extensive experience with these monitors ensures that we can deploy them effectively and ensure their long-term sustainability.

The RPM detects the presence of radiation and feeds alarm information to operators, typically customs agents or border guards, located in a local or central alarm station. The communications system graphs the gamma or neutron signal and helps the operators identify what type of alarm has occurred. At this point, the vehicle or pedestrian is retained and handheld equipment is used as part of a secondary inspection to identify the specific radioisotopes that caused the alarm. The handheld identification equipment that we currently deploy utilizes sodium-iodide or germanium technology and is the standard commercially available technology. Determination of the specific isotopes involved and their specific location is important because a number of common materials such as ceramic tile and kitty litter, in large quantities, may signal an alarm due to their relatively high concentration of radioisotopes. We call these “NORM” alarms, for “naturally occurring radioactive material” alarms.

Experience has shown that effective use of the hand-held equipment is highly dependent on the skill and training of the onsite official as they try to locate the source of the alarm. Expediting proper adjudication of alarms through these secondary inspections is particularly important in high-volume locations like major sea-ports. It is DOE’s judgment that use of Advanced Spectroscopic Portal (ASP) monitors will improve the rate and accuracy of alarm resolution in these high-volume settings.

#### ASP Testing

As you know, the Domestic Nuclear Detection Office at the Department of Homeland Security is leading the research and development (R&D) effort on the ASP monitors. DOE has been involved in some of the testing activities associated with the ASP program. In order to determine the effectiveness of the ASPs, we are working jointly with DNDO to ensure that the increased ability of these monitors to differentiate threats does not compromise threat detection. In support of this effort, I have asked Los Alamos National Laboratory (LANL) to work with DNDO and lead a multi-lab effort to collect data on the spectra of well-characterized, unshielded special nuclear material (i.e., threat objects) resident at LANL under carefully-controlled conditions for all of the ASPs. These data will provide supplemental information to help validate injection studies where actual threat signatures will be injected into stream of commerce data collected at operational sea ports during the ASP test campaign. This data gathering effort is planned to occur over the next few months. When it is completed, this information will be combined with stream of commerce data already collected by DHS to carry out injection studies, an effective and flexible tool to help determine the extent to which the presence of NORM material in cargo may mask the identification of SNM and thus prevent containers of concern from being sent to secondary inspection.

Finally, DOE will conduct additional performance evaluation of the ASP at LANL in fiscal year 2008 to determine how best to take advantage of the ASP's spectral resolution in order to maximize the performance of the ASPs as secondary inspection tools in SLD deployments. Because the allowable times for secondary inspections and installation parameters vary from one site to another, the ASP configuration parameters must be optimized for the variety of operational sites. SLD will perform tests to optimize the installation parameters and ConOps for the range of deployments required.

#### USE OF ASPs

In the near-term, DOE is purchasing a limited number of ASPs via contracts awarded by DNDO. Our plan is to deploy ASPs at some of our Megaports locations for use in secondary inspections. Under the planned SLD approach, once a PVT monitor alarms, the container will be sent to the ASP for secondary inspection. The ASP, with a much larger detector surface area, larger libraries, and better algorithms than the handheld detectors, should provide enhanced capability to effectively identify specific isotopes to aid Customs officials in determining whether a container presents an increased nuclear risk. Additionally, since the ASP monitors will be permanently installed and operated with less direct Customs officer involvement (i.e., there will be no need to move the hand-held device across the container) the ASP should provide greater consistency in secondary inspection. We anticipate that secondary inspections will be conducted more quickly, thus reducing the potential impact on port operations. If the ASPs are demonstrated to be reliable under a variety of field conditions, we would hope to deploy them to the remaining Megaports installations for secondary inspections.

In the future, based on the results of additional analysis or testing and once the pool of operational experience has been more fully developed, DOE/NNSA may consider deployment of the ASP in some limited primary locations where extremely high amounts of NORM in the stream of commerce may make this approach necessary and cost effective. Our experience to date has not identified this as a major area of concern. Therefore, our plan is to continue to deploy PVT for primary detection and use ASPs in secondary in large, high-volume seaports.

In closing, I would like to point out that DOE and DHS are working closely together to improve our nuclear and radiological detection capabilities. We share the common objective of preventing terrorists and states of concern from obtaining and smuggling nuclear materials that can be used in acts of terrorism against our country and our allies. I want to thank the Administration and Congress for their continued support of our program.

Thank you. I would be happy to answer any questions you may have.

Mr. STUPAK. Thank you, Mr. Huizenga.  
Mr. Schneider, opening statement, please.

#### **STATEMENT OF PAUL A. SCHNEIDER, UNDER SECRETARY, MANAGEMENT, U.S. DEPARTMENT OF HOMELAND SECURITY**

Mr. SCHNEIDER. Thank you.

Thank you, Chairman Stupak, Ranking Member Whitfield and members of the committee.

I have been the Under Secretary for Management for a little over 8 months. One of my responsibilities is serving as the acquisition executive of the Department. And as such, I serve as the principal advisor to the Secretary on acquisition matters. I also serve as the vice chairman of the Department's Investment Review Board. This board is what the Department uses to approve major investment decisions.

Based on my experience in acquisition over the years, I indicated during my Senate confirmation hearing that I would bring some of the best practices in acquisition that I had learned over the years to the Department of Homeland Security.

In late July 2007, after reviewing the status of the ASP program and recognizing the importance of this program to the Nation, I

concluded that this program would benefit from an independent review of the testing efforts. And by “independent,” I meant, in my own mind, independent from the program office—independent from the program office.

I made the recommendation to the Secretary to conduct an independent review of the testing process and the results. He agreed with this recommendation and directed me to assemble an appropriate team of technical and programmatic experts to conduct a review.

Initially, I identified the Associate Director of the Threat Reduction Agency, DTRA, to head the team. My intent was to leverage DTRA resources by requesting assistance from the DTRA leader to assemble an appropriate team of experts to perform this task. However, this review was not intended to be a DTRA study. In early August, he withdrew from this effort.

I then asked Mr. John Higbee, Dean of the Defense Acquisition University School of Program Management, to lead the effort. Mr. Higbee’s role in this effort was a few weeks of planning, documentation collection, getting the team assembled and starting the effort. Last week I asked him to withdraw, when it became evident to me that he was a serious contender for a position in DHS. And while there was no conflict of interest in terms of technologies, companies or financial interest, because of the significant and, I might add, surprising amount of external scrutiny this review has been subjected to, I decided to be overly cautious and remove Mr. Higbee now.

We have identified the members of the team and have provided your staff their names. Last week Mr. George Thompson, Deputy Director of Programs for the Homeland Security Institute, was selected to lead this effort. The Institute is the Department’s federally funded research and development center. Last week I offered to make Mr. Thompson available to meet with your staff to learn of any concerns they may have with the ASP testing efforts to date.

In August 2007, based on discussions with the DNDO and a recommendation by Customs and Border Protection, a decision was made to extend the field validation portion of the schedule by 2 months to obtain more test data. As a consequence of that decision, the original requirement that this review be completed by September 17 will be adjusted.

In my opinion, this review will provide valuable assistance to the Secretary and to me, as the Department’s acquisition executive and vice chair of the DHS Investment Review Board, as DHS considers the best way forward.

This is not an unusual exercise within the U.S. Government. The Department of Defense and others typically make use of such review efforts to facilitate decision-making on major programs. This independent review is not intended to be a substitute for GAO’s review, nor is it a redundant effort. GAO is an agent of the Congress that appropriately provides information to Congress in support of its oversight function. GAO’s efforts do not preclude DHS from conducting its own independent review to support DHS’s decision-making process. I and the Secretary value getting inputs from several sources on major decisions.

The ASP is of national importance in our effort to harden our defense against nuclear smuggling. This acquisition is a vital priority for the Department.

Thank you for your leadership and your continued support of the Department of Homeland Security and its programs, such as ASP. I would be happy to answer any questions you have.

[The prepared statement of Mr. Schneider follows:]

**TESTIMONY OF  
PAUL A. SCHNEIDER  
U.S. DEPARTMENT OF HOMELAND SECURITY  
UNDER SECRETARY FOR MANAGEMENT  
BEFORE THE U.S. HOUSE OF REPRESENTATIVES  
COMMITTEE ON ENERGY AND COMMERCE  
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS  
*September 18, 2007***

Thank you Chairman Stupak, Ranking Member Whitfield and members of the Committee. It's a pleasure to appear before you today to discuss the Advanced Spectroscopic Portal (ASP) program.

I have been the Under Secretary for Management for over eight months. For the previous three and one half years I have been a defense and aerospace consultant doing work for National Aeronautics and Space Administration (NASA), Federal Aviation Administration (FAA), Department of Defense (DOD), Coast Guard and others. Prior to this I was a career civil servant for 38 years. I began my career at the Portsmouth Naval Shipyard as a project engineer in 1965 working on nuclear submarines. My last three government positions were Senior Acquisition Executive at the National Security Agency (NSA), Principal Deputy Assistant Secretary of the Navy (Research, Development and Acquisition) and Executive Director and Senior Civilian of the Naval Sea Systems Command, the Navy's largest shore establishment.

I am the Acquisition executive of the Department and as such serve as the principle advisor to the Secretary on acquisition matters. I also serve as the Vice Chairman of the Department's Investment Review Board (IRB). The IRB process is the process the

department uses to approve major investment decisions. The process is described in a management directive that has been in effect for several years.

During my confirmation hearing before the Senate Homeland Security and Governmental Affairs committee I discussed some of the areas that I would focus on if confirmed. My number one priority was acquisition and procurement. In my March 1, 2007 hearing before the House Homeland Security Committee Subcommittee on Oversight and Management I testified that:

“We are:

- Strengthening the requirements and investment review processes by improving the Joint Requirements Council (JRC) and Investment Review Board (IRB) process.
- Reviewing the major programs and investments to ensure that the requirements are clear, cost estimates are valid, the technology risk is properly assessed, schedules are realistic, the contract vehicles are proper; and the efforts are well managed.
- Building the capability to manage complex efforts by ensuring that these major program offices are properly structured and staffed with the right people, and the right skills, to ensure efficient and effective program management and oversight; and aggressively hiring skill sets where we have known shortages. “

Based on my expertise in the acquisition business I indicated during my confirmation process that I would bring some of the best practices in acquisition that I had learned over the years to the Department of Homeland Security. The ASP review that we are here to discuss today

is part of a broader strategy that I outlined beginning with my confirmation hearing and one that I have maintained throughout my subsequent hearings since I have been in this position. By way of example, in addition to the ASP review, we have also initiated a major review of the SBInet program that focuses on a broad range of the program areas but primarily the technical aspects of the program. The participants in that review include DOD, major laboratories and contractors.

In July 2007, after reviewing the status of the ASP program and recognizing the importance of this program to the nation, I concluded that this program would benefit from an independent review of the technical data. I made a recommendation to the Secretary to conduct an independent review of the technical data. He agreed with this recommendation and directed me to assemble an appropriate team of technical and programmatic experts to conduct a review.

Based on the planned ASP field verification testing period at that time, I had a requirement to finish this task by September 17<sup>th</sup>. Initially, I identified the Associate Director of the Threat Reduction Agency (DTRA) to head the team. In early August, he declined to lead this effort. I should mention that this review was not intended to be a DTRA study. My intent was to leverage some DTRA resources by requesting assistance from a DTRA leader to assemble an appropriate team of experts to perform this task. We have identified several experts to be members of the team, and after briefly assigning Mr. John Higbee to be the team lead, I identified Mr. George Thompson, Deputy Director, Programs for the Homeland Security Institute to lead the effort. We are in the process of putting in place an interagency

agreement with DTRA for support and we have recently issued a task order to the Homeland Security Institute (HSI). The arrangement with HSI will ensure that appropriate conflict checks are done.

In August 2007, based on discussions with the Domestic Nuclear Detection Office (DNDO) and a recommendation by Customs and Border Protection (CBP), a decision was made to extend the field verification portion of the schedule by two months to obtain more test data. As a consequence the original requirement that the review be completed by September 17 has been adjusted.

The Department and DOD work very closely in many areas. On May 23, 2007, I signed a Principles of Agreement with the Under Secretary of Defense for Acquisition Technology and Logistics to pursue a strategic relationship to further the national security interests of the United States of America. Subsequent to this, we engaged the Defense Acquisition University (DAU) to teach acquisition courses to DHS employees and have a structured series of "deep dive" program reviews on key DHS programs. Through this arrangement we are applying best practices by leveraging DAU's acquisition program expertise to assess these major DHS programs.

The ASP program has been the subject of a number of hearings, briefings, field visits, and requests for information and over the last year at least two GAO reviews – with the second GAO review nearing completion. The Department appreciates the need for rigorous review to ensure this critical program satisfies the goal of preventing the smuggling of nuclear

materials through our borders. To this end, the Department has responded to requests for information. The Department itself is collecting information – through this independent review – to assist the Secretary in determining whether he should certify that there will be a significant increase in operational effectiveness with the procurement of the ASP system – a certification required by the Homeland Security Appropriations Act for FY 2007. In my opinion, this independent review will provide valuable assistance to the Secretary and to me as the Department Acquisition Executive and Vice Chair of the DHS Investment Review Board as DHS considers the best way forward. This is not an unusual exercise within the U.S. Government. The Department of Defense typically uses such review efforts to facilitate decision-making on major programs.

The independent review of this system is not intended to substitute for GAO's review, nor is it a redundant effort. GAO is an agent of the Congress that appropriately provides information to Congress in support of its oversight function. GAO's efforts do not preclude DHS from conducting its own independent review to support DHS' decision-making process. It is entirely appropriate for DHS to leverage the resources of the executive branch to gather information to make an informed decision on a critical program. DHS may enlist whoever it deems appropriate for consultation in exercising its responsibilities for program execution.

The ASP is of national importance in our effort to harden our defense against nuclear smuggling. This acquisition is a vital priority for the Department. Thank you for your leadership and your continued support of the Department of Homeland Security and its programs such as ASP.

I look forward to working together in shaping the future and success of DHS. Thank you for this opportunity to be here today. I would happy to answer any questions you may have.

Mr. STUPAK. Thank you.

That concludes our opening statements by our witnesses.

In order to proceed in a more orderly and efficient manner, I would propose, instead of 5 minutes for questioning, Mr. Whitfield, we have 10 minutes for use during questioning. OK with you?

If there is no objection, I propose we do this.

Mr. Whitfield, anything further on that 10-minute rule?

Mr. WHITFIELD. No, that is fine.

Mr. STUPAK. All right. I will begin questioning.

Mr. Aloise, Mr. Rhodes, if I may, I said in my opening statement there has been criticism of the GAO that you did not have the qualifications to assess the radiation portal monitors.

How long has GAO, Mr. Aloise, been working on this technology?

And could you briefly, both of you, give me a little bit of your background in this area under the Government Accountability Office?

And, Mr. Aloise, if you would like to start?

Mr. ALOISE. Mr. Chairman, in the last 5 years we have issued over 20 products directly related to radiation detection equipment.

We have visited a lot of those countries that Mr. Huizenga mentioned, where the Second Line of Defense has placed this equipment. We have also visited a lot of the areas in the United States and the ports of entry where the CBP has placed the equipment to observe its operation, observe the procedures, how to deal with alarms.

Many of our staff have gone through training on this at PNNL, the RADCAT training it is called, which goes in depth about how the equipment works and how to respond to certain things.

And beyond that, we have talked to the manufacturers of this equipment, the vendors of this equipment, the repairmen who work on this equipment, the designers of the equipment.

We know this equipment pretty well. We have been all over the world talking to people about it, as well as all over the United States and the national laboratories.

And I will let Dr. Rhodes talk some more.

Mr. STUPAK. Doctor?

Mr. RHODES. I would just make one side comment, that, in my time at the GAO, I have been a key operator in and designer of the covert sting operations against our borders, where we have brought radioactive materials across, both undetected and detected. So I have designed those tests, which are actually testing the equipment as though the opponent would be testing it.

Mr. STUPAK. Educational background, Dr. Rhodes?

Mr. RHODES. Background is both computer and nuclear engineering. I worked at the Lawrence Livermore National Laboratory in both intelligence and weapons design prior to coming to GAO. Prior to that, I worked at Northrop Aircraft Corporation in the extremely low observables area in their Advanced Systems Division.

Mr. STUPAK. Thank you.

Mr. Oxford, if I may, right in front of you, you have the exhibit book. And I would ask you to turn to exhibit No. 14, if you would in there, please.

You said in your testimony one of the most vigorous testings ever done by the Government—as it should be, because we are talking

about our security, our borders and nuclear and radiation detection. In exhibit 14, this Venn diagram prepared by your office, Domestic Nuclear Detection Office, shows that nine of the 16 radiation sources and masking materials used in the dry-run pretesting activities were also used in the full-scale tests intended for certification.

Is that correct?

Mr. OXFORD. It is.

Mr. STUPAK. OK. Do you agree, then, with GAO's testimony that, by providing the vendors with the opportunity to adjust their software and algorithms during the pretesting phase, that the Domestic Nuclear Detection Office—and I use their words now—“used biased test methods and were not an objective assessment of the ASP's performance capabilities.” Would you agree with that?

Mr. OXFORD. We disagree.

Mr. STUPAK. Well, let me ask Dr. Rhodes, then, or Mr. Aloise, why would that? I mean, like, here is a test. If I give you nine out of 16 answers, I should be able to get the test right, right? At least a passing grade.

Mr. RHODES. I should get a passing grade.

Let me make one statement here.

Mr. STUPAK. Sure.

Mr. RHODES. Without going into the details of the test, because they are classified, if you think about the material in question as a candle, and the material I am using to hide it is another candle, so I set one candle in front of the other, and I know the luminescence of the back candle and I know the luminescence of the front candle, and now I am able to subtract the front candle away, and so I know what the value is of the back candle.

Now, let us do another test. Let us put a 100-watt light bulb in front of that candle. I know the value of the 100-watt light bulb. I now subtract the 100-watt light bulb, and you only see the candle. Let us put a 1,000-watt light bulb; let us put a search light in front of it.

These are all fine calibration tests. These are tests to let me know that the equipment can indeed be calibrated. They are observations of the calibration of the system. But they are not representative, in a comparative state, of, can I see it if I don't know it? And that is our point about the limitations.

Mr. STUPAK. So you don't mind that they gave nine of the 16 answers, if you will, sources, if you will, if you are in the developmental stage. But that shouldn't happen during the certification stage of the reliability of equipment.

Mr. RHODES. That is correct. Our view, at the GAO, is not that—you can test to death. I mean, Dr. Gowadia and I have talked about this and we have actually laughed about how long people can test things. You can turn it over to testers and you will never see an answer because they will never be done. And you can't have that.

But if you are going to do a real comparator test and you are going to have comparative operands here, then you have to make certain that you are getting an answer that is not biased. And you are allowed to make certain that systems are working as well as they can—

Mr. STUPAK. So you want some more blind testing then, in other words.

Mr. RHODES. Blind testing.

Mr. STUPAK. And we do it for FDA, we do it for food safety, we do it everywhere else, why shouldn't we do it for radiologically?

Mr. RHODES. Absolutely. And it should ultimately, if your FDA analogy is very good, it should be a double blind test so that the tester doesn't know as well as the person being tested.

Mr. STUPAK. Mr. Secretary, if I may ask you this question. GAO recently gave three, what I figure key recommendations. You indicated your interest in the best practices independent review. So let me ask you this: These three recommendations that the Government Accountability Office made to you said DHS delays secretarial certification in full scale production decisions of the ASPs until all relevant tests and studies have been completed and limitation to those tests and studies have been identified and addressed.

Furthermore results of these tests and studies should be validated and made fully transparent to DOE, CDP and other relevant parties. Second, once the test and studies have been completed, evaluated and validated, DHS should determine in cooperation with the Custom Border Patrol, CDP, DOE and other stakeholders, including independent reviewers if additional testing is needed. Third, if additional testing is needed, the Secretary should appoint an independent group within DHS, not align with the ASP acquisition progress, to conduct objective, comprehensive and transparent testing that realistically demonstrates the capabilities and limitations of the ASP system. This independent group would be separate from the recently appointed independent review panel. These three recommendations, do you agree with this, these three recommendations?

Mr. SCHNEIDER. No, sir.

Mr. STUPAK. You don't agree with it?

Mr. SCHNEIDER. Not completely.

Mr. STUPAK. What do you disagree with?

Mr. SCHNEIDER. I don't have those recommendations in front of me, I am sorry.

Mr. STUPAK. I think Mr. Huizenga just handed them to you. If you want the best practices, independent review?

Mr. SCHNEIDER. Well, that is why I think we have to take them one at a time. I think one of the reasons, in fact, the principal reason why I decided to recommend to the Secretary to have an independent review team was I realized there was a lot of discussion regarding the testing of the ASP. I read some GAO documentation, two documents, I believe, dated early March. I had looked at that. I recognized some of the concerns that had been put forth at the time by GAO. I have also recently been briefed on the ASP program as part of the process that we use as part of the investment review board process. It was at that point in time that I really got an appreciation for the magnitude of this testing effort. It helped me put in perspective, if you will, some of the GAO comments. My own background—

Mr. STUPAK. So with those comments then in perspective, you disagree with these recommendations?

Mr. SCHNEIDER. Basically that led me to conclude I wanted it for the benefit of—my role in the investment review board process and the fact I am the Secretary's principal advisor on acquisition, I felt that he ought to have an independent group of people, technical people, looking at the testing process and results prior to considering a recommendation for certification.

Mr. STUPAK. Well, this independent review, with all due respect, the independent review you have still lies within the Department of Homeland Security. The only truly independent review, whether you are at DOD or DHS, is really the Government Accountability Office. They are the truly independent agency. So why wouldn't you take the truly independent agency's three key recommendations on these ASPs?

Mr. SCHNEIDER. First, I respectfully disagree with you about that they are the only truly independent review.

Mr. STUPAK. Give me another one that is a truly independent review that doesn't reside within the Department of Homeland Security.

Mr. SCHNEIDER. Well, Mr. Chairman, let's talk about testing.

Mr. STUPAK. No, let's talk about independence. You said there are others in GAO. Enlighten the committee please. What other agency would you have us look at for truly independent in order to do this review of your testing? Other than GAO, who else would Congress look to?

Mr. SCHNEIDER. First of all, the military departments in DOD in terms of testing, they do independent testing and recommendations to the Chief of Naval Operations.

Mr. STUPAK. And who does the independent testing that is outside the Department of DOD?

Mr. SCHNEIDER. It is within the Department. There is a special group that is set up. There is a director of test and evaluation. Each of the services have an independent test and evaluation agent. They report individually and separately to whoever a major investment decision—

Mr. STUPAK. So why don't you set up an independent one if you still wanted the Department of Homeland Security to truly do this independent review.

Mr. SCHNEIDER. It is done within the Department.

Mr. STUPAK. But even your latest appointment, doesn't 60 percent of their funding come from Department of Homeland Security? Is that truly independent.

Mr. SCHNEIDER. It truly is independent given the fact what the role that Federal FFRDCs play. This is exactly what FFRDCs do. And I don't care whether they are the Army, the Navy or the Air Force, or for that matter, what the FAA has with Casby who was their FFRDC. This is exactly the type of work that they do, sir.

Mr. STUPAK. When you have three different directors appointed in 6 weeks, it sort of gets us wondering whether it is truly independent and whether you have confidence that truly is the independent review, which had three in 6 weeks right.

Mr. SCHNEIDER. Three in 6 weeks yes. I explained why. And frankly on the last one, in the case of Mr. Higby, I was being overly cautious. In fact, you could say I was gun shy. Under most circumstances, given the fact of the role that DOE plays and the part-

nership arrangement that we have between the Department of Defense and Department of Homeland Security for cooperative efforts like this, DOE is engaged in many other deep dive program reviews right now for us.

Again, this is one of the practices that we are trying to institute where we have a group of people separate from the program office. And I can't overstate that enough, separate from the program office, that do not have line execution responsibility for the execution of the program to go do these reviews.

Mr. STUPAK. My time is up right now. Mr. Whitfield, for questions, please, sir.

Mr. WHITFIELD. Thank you, Mr. Chairman. Mr. Aloise and Dr. Rhodes, in your testimony you express significant concerns about the DNDO's testing, that being biased and so forth. I was just curious, why do you all not recommend that the Department simply start over and redo all the field tests?

Mr. ALOISE. Sir, because there are some test results we haven't seen yet. They had they say had done some blind tests and they want to use some other test data. And that data they say is still being analyzed. So we thought it was prudent to allow them to finish that analysis and share that testing that has already been conducted with DOE and CBP and others.

Mr. WHITFIELD. Now, Dr. Gowadia, you and Dr. Rhodes are, I guess, the technical experts in all of this. How would you describe the difference of opinions on these tests, the testing that has been done. Is this a serious disagreement between you and the GAO? They say it is biased and you are saying it is not biased. Would you explain to the committee just how significant the disagreement is between GAO and DNDO on the testing.

Ms. GOWADIA. Yes, certainly. The biggest difference I believe is right now we are in the process of addressing one phase only of the test data. We have much more data that we are going through right now that will also be used to inform the Secretary for his decision. While 9 of 16 cases have been used in the phase 1 effort, I would point out that only 26 of 90 configurations were actually shown in pretesting if you consider the totality of the test. So yes, there is a significant difference. It depends on how you slice the data.

Mr. WHITFIELD. Dr. Rhodes.

Mr. RHODES. Well, yes, there is limitation on the data. I cannot speak to something I do not have. But our going in position at the beginning when we saw phase 1, phase 1 was for certification. That was why we were concerned. Because we saw it, looked at it, I understood it, we were briefed on it, we received that data. However, because of the decision that was supposed to be made about that, and understand that our testimony is based on that, that is the limitation that we do have.

Mr. STUPAK. If I may jump in, Dr. Gowadia, any reason why you would not give GAO all the information? Dr. Rhodes said they have not received all the information. Why wouldn't you give them all the information?

Ms. GOWADIA. We have given them all the information as it has been ready and prepared and finalized. Draft documents are not

handed to the GAO. We are presently going through every last spectrum of a very large—

Mr. STUPAK. Well, when are you going to be done with your review? According to everything we hear, you are going to make a decision in a few weeks. If all the data is not finalized, when are you going to get this done and get it to GAO and give them time to review it?

Ms. GOWADIA. I believe, sir, the decision is now in November, so we are exercising extra prudence to make sure that we analyze the data correctly.

Mr. STUPAK. OK. November. It is late September. When are you going to give GAO the information they need before November to make a decision to inform Congress.

Ms. GOWADIA. We will give them the data and the information once it is finalized, sir.

Mr. STUPAK. When will that be?

Ms. Gowadia. It will likely be before November, before the decision for certification.

Mr. STUPAK. Is there certain information GAO needs, Dr. Rhodes or Mr. Aloise, in order to make a decision here? I think you should have all the information.

Mr. ALOISE. Well, of course. And Mr. Chairman with all due respect, this has not been the most transparent review we have ever worked on. We have had to basically fight and scrape for every piece of information we have gotten. Now, that has changed recently and we are thankful for that. But until we know what the results of these tests are, we, of course, are not going to be prepared to say it makes sense to go to secondary deployment without knowing what the results of the tests are, without having everybody's buy in that is enough, that that shows that the equipment is going to do what they say it is going to do.

Mr. STUPAK. I thank the gentleman.

Mr. WHITFIELD. Now, Mr. Oxford you all have the responsibility under the legislation, the appropriation bill certifying this ASP technology, is that correct?

Mr. OXFORD. That is correct.

Mr. WHITFIELD. And you don't need the approval of GAO to certify, do you?

Mr. OXFORD. We do not.

Mr. WHITFIELD. You can do that on your own.

Mr. OXFORD. If I could clarify the position, and we have confirmed this with the appropriations committees that crafted the language that is in our 2007 bill. This is merely an accountability statement by the Secretary that this system represents an increase in operational performance. It is not connected to a deployment decision, nor a production decision. So it is up to those of us that inform the Secretary, ourselves and CBP, as well as now Under Secretary Schneider, to go in with whatever information we think the Secretary should have to make these recommendations.

Mr. WHITFIELD. Well, obviously everyone on the panel, and all of us certainly want to be as certain as we can be that this technology works because of the drastic consequences if it does not work the way it is supposed to. But Mr. Huizenga, you are with the Department of Energy or National Nuclear Security Administration, you

are not bound by any certification and you have already purchased some ASP technology; is that correct?

Mr. HUIZENGA. Yes, it is.

Mr. WHITFIELD. And you all intend to deploy that in overseas ports; is that correct?

Mr. HUIZENGA. Yes. Our intention is to put the ASPs in overseas ports for secondary inspections to gain some additional information on the operational effectiveness and to try to optimize their use.

Mr. WHITFIELD. Now, you have tremendous responsibility on the security question in these overseas ports. What was your impression of the GAO's study on this issue?

Mr. HUIZENGA. I think that the GAO has raised some legitimate issues. And Mr. Oxford and I have been discussing them for some time now. But within the administration, I think we are making good steady progress. We are working through the final issues associated with testing the ASPs.

Mr. WHITFIELD. And there are ASP monitors deployed throughout the U.S. ports now just being tested; is that correct, Mr. Oxford?

Mr. OXFORD. Yes. As part of our overall test program we deployed these to four ports of entry, 5 if you figure out some of the geographical separations and physical locations. They are under the control now of CBP officers. They are operating the systems. They are evaluating the performance in the field to make sure they are a very stable system. That is why I mentioned before that this is a joint recommendation to the Secretary, not just DNDO. This is joint with CBP because they are the operator and they have to assess the operational utility.

Mr. WHITFIELD. And can you share with us how they are performing at this point?

Mr. OXFORD. I will tell you that the feedback from the port directors at ports where CBP is operating these systems is that the performance is starting to whet their appetite for a larger deployment based on the immediate feedback. The Deputy Commissioner of CBP and I have talked. He has commissioned what he calls a blue ribbon panel within CBP to look at the next steps in going to his recommendation for certification and future deployment strategies, so we will be ready once the Secretary makes a decision.

Mr. WHITFIELD. And what would be your best guess as to when you all may be certifying.

Mr. OXFORD. Again, some of the comments earlier on are a little bit misleading. We have not reacted to the GAO's input. We have been making prudent management decisions as we have learned things, both through our test program, and through our field validation of systems. We have had a couple requests by CBP to change some of the features of the fielded systems. We have changed some of the software. When we do that we essentially start the field validation over so that CBP officers have at least 2 months of good stable operations in the field. The most recent slip was based on a request from CBP to have 2 months of field operations of these systems at the four ports of entry. That moves us into November based on the operator's input.

Mr. WHITFIELD. And have you all decided on how many ASP systems you may be prepared to deploy next year?

Mr. OXFORD. We have an acquisition plan. It is predicated on action once we go through certification, which, as I mentioned before, is decoupled from the decision for production or deployment. That is a separate pathway. Right now we have an acquisition strategy that would start to buy 131 systems, as included in our 2007 request, that is pending the certification step. And again, the actual deployment strategy will be jointly developed with ourselves and CBP.

Mr. WHITFIELD. Mr. Chairman, I think we only have a couple minutes to vote on the floor.

Mr. STUPAK. Right. We only have a couple minutes to vote on the floor. We will be in recess for 20, 25 minutes. So I would ask the witnesses to stay. We have three votes, and they promise us a couple of hours uninterrupted. Thank you.

[Recess.]

Mr. STUPAK. OK. The hearing will come to order. Mr. Green, for questions.

Mr. GREEN. Thank you Mr. Chairman. Unlike the first line of questions, and I appreciate our witnesses being here, I think you heard briefly early on my concern is I have a large container port, Port of Houston, and we are actually expanding it. We just opened another in Bay Port. And they already leased land to continue, because the growth of containers in our country are just going to be even more if our economy continues to grow. And having been on the docks, a lot of times our customers agents, particularly at Barbers Cut, and seeing what we are doing now, and I would hope that we would be able to have the technology to do even better, but of course, we need to make sure the cargo moves, but we also need to make sure there is nothing in there that is going to harm us.

One of the biggest questions when I spoke to the port, Mr. Schneider, was inquiring about its staffing levels of the new technology. DNDO and DHS state that the ASP monitors are less labor intensive because there will be fewer secondary hands. How will staffing levels be affected, both when this technology is new and being used in addition to the PVT portals for the secondary screening purposes and if it becomes the primary screening device?

Mr. OXFORD. If I could take that, Mr. Green. Let me give you some information. First of all, from our New York Container Terminal testing that we conducted, we found that there is over a factor of 20 reduction in referrals from primary to secondary inspection based on being able to dismiss "nuisance alarms." There are some cases that we are working with DOE that we want to make sure we explore a little bit more fully. But if that factor holds in a port like LA/Long Beach where they are getting 500 nuclear alarms per day, it would go down to about 20 to 25 that they would have to pay serious attention to in secondary.

Mr. GREEN. So while those only test false positives, I know in our business, we also look for false negatives. Are the tests being done on both sides?

Mr. OXFORD. We are doing tests on both sides. There is a special case that we have identified with DOE. And I think that is part of the confusion about why we need injection studies and follow-on testing. There are some cases that we worry about where you could

have very high masking levels where there is a possibility that you would end up with a false negative.

We need to explore those cases. But I will also tell you that it is not always uniquely a technology issue. For example, we have seen that case 24 times in the last year and a half in this country. We can actually set algorithms on these detectors to trigger that to secondary inspection, so that CBP can then take operational action. It is a combination of the operators as well as the systems that have to work together.

Mr. GREEN. And are ASP monitors currently being used on a trial basis in any of the ports of entry or are they just being tested for example in New York or Long Beach.

Mr. OXFORD. We have four ports of entry right now. LA/Long Beach, the Port of Laredo in Texas, Detroit in Michigan and Port Newark. We have them in operational sites with CBP right now.

Mr. GREEN. Let me follow up. Since you answered that question I have one. After the ASP certification has been to Congress, how many ASP units does your office plan to purchase; do you plan to use it for primary or secondary screening initially?

Mr. OXFORD. Initially, we will go with a production and deployment recommendation to the Secretary after certification. They are not coupled in that regard. Right now we have a total purchase plan based on the current deployment strategy with CBP for both primary and secondary sites of about 1,200 ASP systems. That is our current acquisition plan. However, the agreement with CBP, is that we will initially go into secondary deployment. They are developing the priorities for where they will go and how they will be deployed over time. We will make a decision in the next 6 to 12 months as to what the criteria are and how to progress into primary deployment after that time.

Mr. GREEN. And you said you are doing them in the ports, the Port of Laredo, which is the biggest port, I guess, in the world. Is it your intention to deploy them in other ports along with both the Canadian and the Texas and—well, the southern border.

Mr. OXFORD. Absolutely. Our deployment strategym developed with CBP since they are the operational customer, includes both land border crossings and sea ports, as well as introducing capabilities into airports of entry as well, which is a new part of our phased deployment. I would like the committee to understand that our deployment strategy will continue to rely on a combination of the current generation systems, as well as these new systems. We have a strategy worked out with CBP on how that can be both operationally effective and cost effective.

Mr. GREEN. Well, again, all of us are representative of districts, but our concern is our Nation. And I know New York, Long Beach, and just last year, I think the Port of Houston was given level 1 concern because of the resources and assets we have there with the petrochemical industry particularly. But we are also growing a huge container capability, along with Wilmington and lots of other places in our country. Mr. Chairman, thank you for holding the hearing today.

Mr. STUPAK. I thank the gentleman. Let us go for a second round of questions for a bit here. And as other Members show up, they will be given an opportunity to ask questions. Mr. Huizenga, in re-

sponse to Mr. Whitfield's questions, did you say that the ASPs are deployed overseas?

Mr. HUIZENGA. No. Actually, there is one in South Hampton, United Kingdom, and that is the only one that we have overseas at this point. The ones that we are talking about directly here are part of the DNDO testing process. We have been using a similar technology, this sodium iodide technology in the Bahamas for over a year now. And again, in kind of a pilot mode where we run a detector over the containers and use the PVT to initially alarm.

Mr. STUPAK. The one that you have had over a year now in the Bahamas, has GAO looked at that to certify it?

Mr. HUIZENGA. GAO is aware of that monitor as well.

Mr. STUPAK. Not aware of. Have they looked at the test results and analyzed it? That is what I am asking.

Mr. HUIZENGA. I am not sure. They have reviewed us several times. And I know Mr. Aloise is aware of it. I don't know if he specifically looked into a certification issue.

Mr. STUPAK. Mr. Aloise, let me ask you this then. Is it GAO's view that ASPs are ready to be deployed overseas as a secondary screening at this time with all the full understanding of their detection limits? We keep hearing about additional operational testing in the field. What does that mean to you? Does it tell us that a machine can accurately detect various threat materials? What is the limitation on the operational testing in terms of your certification for testing limits.

Mr. ALOISE. Certainly the field testing is important, but it is not testing with special nuclear materials. That was done in the February to March test that we are criticizing here. Let us not forget, that is the key test out of all of this, is that test which used special nuclear materials. And that test did use 6 of the 7 same materials and 9 of the 14 or 16, depending how you count configurations.

Mr. STUPAK. That was phase 1 testing, is that right?

Mr. ALOISE. Phase 1 testing, correct.

Mr. STUPAK. Phase 2 is more or less writing your report, correct?

Mr. ALOISE. We understand it, yes.

Mr. STUPAK. OK. And phase 3, you have not received any of that data?

Mr. ALOISE. We have not seen that data. We did finally get a copy of the test plan. And in the test plan it said that was not going to be used for certification. And it was even questioning the statistical validity of some of that information for some purposes. So we have not yet seen those results.

Mr. STUPAK. Have you seen any blind testing results?

Mr. ALOISE. No, we have not seen the blind test results.

Mr. STUPAK. Mr. Oxford, one of the requirements were that you test the outer limits of these machines to determine what can ASP detect and what it can't detect, correct?

Mr. OXFORD. Yes, sir.

Mr. STUPAK. Have you done that?

Mr. OXFORD. We think we have. Let me explain, Mr. Chairman, that when we talk about "requirements", that is a very loose term. Right now there is one threat baseline that we have been asked to address. I can't go into it in this session.

Mr. STUPAK. Let me just ask it this way then. Would it be common sense that you test the outer limit to know what a machine can and cannot do?

Mr. OXFORD. We are doing that.

Mr. STUPAK. Have you shared those outer limit test results?

Mr. OXFORD. We have shared the raw data with the GAO. We have not finalized the test report. In all these cases, especially phase 1, we offered them the opportunity to actually review the test plan before we conducted it. They turned us down in that review and said they would wait until the test results. But in terms of phase 3—

Mr. STUPAK. The test results of these outer limits—I don't want to leave here yet—

Mr. OXFORD. We have not finalized the report.

Mr. STUPAK. And you haven't provided it to GAO.

Mr. OXFORD. Not yet. I haven't even seen it.

Mr. STUPAK. Have you not seen it?

Mr. OXFORD. I have not seen the final report. It is not prepared, so I have not actually coordinated or approved the document at this point.

Mr. STUPAK. But you would agree with me, common sense and for security of this Nation, we would test the outer limits of the ASPs.

Mr. OXFORD. Absolutely. We think we have taken a big step in doing that.

Mr. STUPAK. This outer limit testing, is this the injection studies?

Mr. OXFORD. Actually, it is phase 3 that starts that. Again, there is also a difference in my mind between secondary and primary deployment and what testing is necessary to make those decisions. As we identify other cases that may or may not have been tested that are in phase 1 and phase 3, we will identify other opportunities. They will be informed by the injection studies, which the technical summit that we held on June 27 suggested we need to do injection studies to identify where the current data is relevant.

Mr. STUPAK. So is the outer limit going to be determined by injection studies or realistic blind studies?

Mr. OXFORD. A combination. And the injection studies will inform what future testing is required.

Mr. STUPAK. What about blind studies?

Mr. OXFORD. The blind studies, if I could try to correct the impression, was really a red team operation. I know Mr. Aloise and Dr. Rhodes, who has already acknowledged that he has worked in some of the covert sting operations that GAO has conducted, understands that you do that to find out if there are any vulnerabilities or gaps in your processes and capabilities. That is why we ran that red teaming operation out in Nevada. We wanted to see whether our test methods were sound and whether there were gaps in our understanding of how you place sources and how you learn from that.

Mr. STUPAK. Let us go back to my original question. The outer limits of what this machine can detect and cannot detect, you rely upon, I understand, more than just the injection study, the computer simulations? Am I correct or wrong in that?

Mr. OXFORD. Injection studies will inform what testing needs to be done and will determine which tests to conduct if they are necessary. Again, that will be a joint decision with DOE and others as we look at these special cases.

Mr. STUPAK. Let me ask it one more time. The outer limits testing determine what the machine can and cannot detect. Will it be done by injection studies only or are you going to do blind testing on it?

Mr. OXFORD. It will be done with both injection studies and testing.

Mr. STUPAK. You said testing. That is not blind. Are you talking about blind testing or not? I am not trying to play semantics here. I am trying to get to the root problem here. I want this done outer limit testing in real world application, not a computer simulation.

Mr. OXFORD. It will not be a computer simulation.

Mr. STUPAK. So what is it going to be then? What other testing is there, other than computer simulation that you can do to test the outer limits?

Mr. OXFORD. We actually have proposals for two test series during the course of fiscal year 2008.

Mr. STUPAK. And what are those test series?

Mr. OXFORD. We have not written the actual test plan because we are still working with the—

Mr. STUPAK. So you think you are going to do two testing, but you don't know what the testing is?

Mr. OXFORD. Not at this point.

Mr. STUPAK. Are we making this up as we go along?

Mr. OXFORD. No, we are not.

Mr. STUPAK. Or do we have a plan here?

Mr. OXFORD. We will have a plan. We will have a test plan.

Mr. STUPAK. These two new plans you plan on bringing up, are you going to run those by GAO to make sure that they are valid tests.

Mr. OXFORD. Perhaps.

Mr. STUPAK. Are you certifying these ASPs before you do these two tests that you don't know what they are yet.

Mr. OXFORD. Again, I cannot presuppose what the Secretary will or will not decide.

Mr. STUPAK. Well, you are making recommendations from what I understand is going to be November and you don't know what the two tests are going to be. It sounds like you certified before you even know what the two tests are.

Mr. OXFORD. Mr. Chairman, let me clarify. We held a technical summit with the DOE, the national laboratories, you had committee members or staff present, we had the GAO present. A conclusion out of that discussion, an all-day discussion with those representatives, was that these systems were ready to go to secondary, but there were some cases that were of concern before we made a primary deployment decision.

The certification decision is not coupled with the deployment strategy. The fact is that we can go to certification without necessarily having done every possible test. We will continue to test over time to refine the algorithms in these systems, but the tech-

nical community is comfortable with the secondary deployment decision if the Secretary certifies it.

Mr. STUPAK. Then if the Secretary certifies it and if it doesn't meet the outer limits test, then how do you decertify it then as a primary?

Mr. OXFORD. Again, the deployment decision is separate from certification that it does represent an increase in performance.

Mr. STUPAK. But you and I are both in government. We know once you deploy something we don't pull it back. We want to make sure it is done properly before you even deploy it. So what assurances can you give the American people that there are going to be valid ASP machines before you even deploy them.

Mr. OXFORD. We will probably spend the next 6 to 12 months determining what test and evaluation needs to be done before we make a decision to deploy to primary inspection sites. Most of these special cases are coupled to the concerns of the ASP and a false negative in the primary role versus the secondary role.

Mr. STUPAK. Let me ask GAO, Mr. Aloise or Dr. Rhodes, again about this injection study. Isn't injection study just a fancy word for fixing a process that is flawed?

Mr. ALOISE. Well, the injection studies that occur had flaws in the original February-March test plan. That is what that technical summit was designed to do. I didn't understand that they were making a decision coming out of that submit to deploy in secondary. So that is another question we have we have been asking. They are not as good as real testing injection studies. They can provide useful information, but not as good as real testing. And after all, injection studies are designed, as I said, to correct flaws with the initial test in February-March, and to us those are the key tests.

Ms. RHODES. Let me just take a couple of minutes and talk about the injection studies and try to use an analogy from another part so that we don't get into the details of the studies themselves. We can no longer do underground nuclear testing so we have to do simulations.

Mr. STUPAK. Sure.

Mr. RHODES. And we have to go back to the old underground test data. Some of the testing that I did was at Livermore. That is data that we feed into assimilation to try and model some of the money, a large amount of money that the Government is putting into Livermore and Los Alamos and San Diaz to do these simulations.

Mr. STUPAK. Correct.

Mr. RHODES. The simulations are good, but they are simulations, they are models. You try your best to validate. The stockpile stewardship program in the Department of Energy through NNSA is a large effort to try and give surrogate tests to try and match the original detonations and neutron counts and things like that. So that is why we say that the injection studies may help. But they do have to be validated. The validation of an injection study is back to reality. The validation of injection study is not do other simulation.

Mr. STUPAK. OK. Mr. Oxford you are nodding your head in the affirmative. Do you agree that the validation studies or your simulation studies have to be validated?

Mr. OXFORD. I agree. That is why I say they will inform what testing needs to be done so we can get to that validation.

Mr. STUPAK. How are you going to validate it?

Mr. OXFORD. Through testing.

Mr. STUPAK. What testing are you going to do to validate it?

Mr. OXFORD. Again, the injection studies will tell us exactly what test runs, what sources, masking cases, et cetera, we need to evaluate against and then we will plan that test accordingly.

Mr. STUPAK. So you don't know what tests you are going to use to verify the simulation?

Mr. OXFORD. Not at this date. We have an idea of what we are going to be testing.

Mr. STUPAK. You are not going to validate this until after you do this testing on your injection studies right.

Mr. OXFORD. We will not validate?

Mr. STUPAK. Right. You won't certify, I am sorry, you won't certify?

Mr. OXFORD. Again, that decision is left to the Secretary. Again, it is not a deployment decision. It is a decision he will make.

Mr. STUPAK. You will be making a recommendation to the Secretary, won't you.

Mr. OXFORD. I will, the Under Secretary will—

Mr. STUPAK. Then will you promise this committee you won't make a recommendation until you figure out the two tests you are going to use to certify the injection studies.

Mr. OXFORD. I will not commit to what we are going to make a decision on in front of the Secretary at this point in time, because we think, in some cases, we have.

Mr. STUPAK. I didn't ask you for your recommendation. I asked you to make a commitment to this committee that you don't make a recommendation either way to the Secretary until after you have a validation of these injection studies by two more tests that you said you are going to do.

Mr. OXFORD. No, sir, I will not make that commitment today.

Mr. STUPAK. OK. That is interesting. Mr. Whitfield for questions. I am going to come back for a third round of questions. I am now getting warmed up.

Mr. WHITFIELD. Thank you Mr. Chairman. Mr. Oxford, we know that the ASP system, while it would vastly improve the security situation, is quite a bit more expensive, and it is my understanding that right now the PVT system that you are using, that that costs about \$70,000 per monitor and the other one, the ASP is around \$400,000 and you have about 1,400 PVT systems deployed worldwide. And I was wondering is it more cost effective to deploy ASP systems at the major ports where you have most of the nuisance alarms and only in secondary screening instead of considering primary screening as well?

Mr. OXFORD. Again, that will be a joint decision with Customs and Border Protection based on, again, the effectiveness of the system as well as their operational work load. As I mentioned, at the Port of LA/Long Beach, which gets 500 nuclear alarms per day, once we feel like we have confidence that you can deploy ASP in the primary, I think the CBP recommendation will be to do primary and secondary deployment of ASP at a very high volume port

like that. In other cases, we will continue to rely on PVT in primary with ASP in secondary. But again, this is a balance with the operator that we have to judge.

Mr. WHITFIELD. Now, at the Port of Los Angeles, it is my understanding there are about 150 Custom and Border Protection inspectors and there are a lot of nuisance alarms there particularly. And if you deploy this ASP system in Los Angeles with the reduction of the nuisance alarms, it would be possible, I am assuming, to reduce the number of Customs employees there as well.

Mr. OXFORD. I would expect that to be the case, but I wouldn't speak on behalf of CBP. They have a lot of missions they conduct at the port, so I doubt that there would just be less in demand. They would probably have other missions they could cover more comfortably. There wouldn't be a reduction in the requirement.

Mr. WHITFIELD. OK. Thank you, Mr. Chairman.

Mr. STUPAK. Thank you. I want to go back to Mr. Oxford if I may, because I am disturbed about the outer limits here that are not being tested. In your testimony, on page 2, you state, and I'll quote, "There are known detection limitations to the current system." So you acknowledge there is limitations to the ASP, correct?

Mr. OXFORD. My comments were intended to convey that there were known limitations to the currently deployed systems, not the ASP.

Mr. STUPAK. OK. PVT.

Mr. OXFORD. Correct.

Mr. STUPAK. By this, then, do you mean that the existing systems, existing ones, PVT, can overlook radiological threats that could potentially be smuggled through our borders?

Mr. OXFORD. Without getting into the details—

Mr. STUPAK. Just answer yes or no would be sufficient.

Mr. OXFORD. I can tell you that we have found some cases that we would be concerned about, yes.

Mr. STUPAK. Then does the organization plan to use phase 3 testing in support of a certification of the ASPs.

Mr. OXFORD. We will look at the relevant data from phase 3 to help inform that recommendation, yes, sir.

Mr. STUPAK. Then right there the book binder in front of you please, turn to exhibit 10, page 2. This is the phase 3 test plan.

Mr. OXFORD. Which reference again, sir?

Mr. STUPAK. Exhibit No. 10, page 2. First of all, exhibit 10 is your phase 3, correct?

Mr. OXFORD. It is the phase 3 test plan, yes.

Mr. STUPAK. So go to page 2. Doesn't the section entitled "Test Purpose" state that the phase 3 test plan is not intended for key decision point three decision, which is a decision to approve full scale? Isn't that what it says?

Mr. OXFORD. Yes, sir.

Mr. STUPAK. OK. Stay with that exhibit. Please turn to page 19, the same thing. Doesn't this say in the section entitled "Sample Size Methodology" that the tests run in phase 3 are not large enough to be statistically meaningful for assessing probability of detection.

Mr. OXFORD. It does.

Mr. STUPAK. Then if you turn to page 2 at the beginning it says, this is the signature page. There are no signatures on the version we are provided by your office. Did you sign this document?

Mr. OXFORD. I can't recall whether I actually signed this version or not. Again, sometimes when we go through version control we add on a new version. If you notice, this is marked version 3. So the original test plan, if we make modifications to the test plan—

Mr. STUPAK. Is there a modification after?

Mr. OXFORD. After version 1, yes.

Mr. STUPAK. After this one?

Mr. OXFORD. No, not after version 3.

Mr. STUPAK. So after March 30 this plan, exhibit No. 10, that is the plan you are following.

Mr. OXFORD. Right.

Mr. STUPAK. You don't know if you signed it.

Mr. OXFORD. I can't recall if I signed that version.

Mr. STUPAK. Is there a reason why you would not have signed the version?

Mr. OXFORD. I can't recall that.

Mr. STUPAK. I hate to assume, but I guess we would assume you signed off on this testing then, right?

Mr. OXFORD. We actually conducted this test.

Mr. STUPAK. So I assume then you must have signed off on this test if you have actually conducted it?

Mr. OXFORD. Our milestone test process requires that the test plan is approved before we go through what we call a test readiness review, which begins the test team authority to deploy and begin the testing.

Mr. STUPAK. So you must have signed it.

Mr. OXFORD. I don't know if I signed this one or not.

Mr. STUPAK. Well, can you explain how your office can justify using data which is not significantly—I am sorry. Can you justify using test data which is not of a statistically significant size to support your certification.

Mr. OXFORD. What we do is look at any available data, we find out if it is relevant to the Secretary's decision and we will look at whether that data shows any trends or any potential deficiencies in our capability. I made the decision on May 29.

Mr. STUPAK. But your document that you allegedly signed said it must be statistically significant. The methodology that you are collecting is not statistically significant. How would you use it for a certification.

Mr. OXFORD. We would be remiss if we learned something in that test that we did not provide to the Secretary. So while we first envision this test to look at some of the outer limits to look at some of the—the goal of this test was to look at some of the limits of ASP performance, to further develop the algorithms associated with the systems and to define concept of operations or help work with CBP. I made a decision that if there is existing data that is relevant to the Secretary's decision, it is prudent to make use of that data as opposed to ignoring it.

Mr. STUPAK. To look at the outer limits, as you just said. And then you said you can't use it because it is not statistically significant. So therefore you never looked at the outer limits, did you?

Mr. OXFORD. I don't think that is true. We can get into a statistics debate. If I am making a recommendation to the Secretary, I need to make use of existing data, whether we have done 1,000 runs or 60 runs or whether we think we can draw a good reference from that data.

Mr. STUPAK. In order to draw a valid reference from the data, the data has to be of a significant size so you can reach a conclusion. Otherwise if your sample size is too small, the conclusion you reach can probably be erroneous. Isn't the confidentiality index supposed to be 95 percent in this, and if your sample size is too small, how do you draw your 95 percent?

Mr. OXFORD. I apologize, Mr. Chairman, for not being a statistician. We have had NIST working with us.

Mr. STUPAK. Neither am I. But it is common sense. You all know that from looking at statistics. You try to get 95 percent, isn't that true?

Mr. OXFORD. That is true.

Mr. STUPAK. And isn't that what you call for in your studies, 95 confidence before this is done?

Mr. OXFORD. There is a difference between 95 percent confidence and the 95 percent performance goal that we have.

Mr. STUPAK. So from what I gather, you are just picking data that justifies the certification and not passing testing that show the ASPs have problems.

Mr. OXFORD. I totally disagree with that approach.

Mr. STUPAK. I disagree with that approach, too. How about GAO? If the size is significantly significant, can you have a valid test.

Mr. ALOISE. That is one of our concerns about using that data, sir, among others. But this gives you kind of an idea what we have been trying to deal with as well. All we are looking for is what is the plan, what is the approach, tell us what your data is and we will go away. But it has been difficult to get those kinds of answers.

Mr. STUPAK. I understand that. Mr. Secretary, you serve at the pleasure of the President, right.

Mr. SCHNEIDER. Yes, sir.

Mr. STUPAK. Do you think the President would be comfortable putting detection monitors on our borders that we don't know what the outer limit of detection is?

Mr. SCHNEIDER. Mr. Chairman, I've been following this conversation. I do not understand quite frankly the details of the testing plan or what different words mean. I am having a hard time frankly following this discussion.

Mr. STUPAK. Let me help you.

Mr. SCHNEIDER. Well, sir—

Mr. STUPAK. Let me help you. The outer limits, don't you think we ought to know the outer limits of the ASP before you put them on our borders.

Mr. SCHNEIDER. I think it is important to know what the characterization of the performance is.

Mr. STUPAK. If you don't want me to use the words "outer limit" give me the word you want to use. Don't you think it is important.

Mr. SCHNEIDER. I am not in a position to answer your question sir. I am not technically competent at this point in time.

Mr. STUPAK. This isn't technical. I am not a nuclear scientist. But any machine you put on our border that detect nuclear radiological devices coming in this country, don't you want to know, if it is an ASP or PVT, don't you want to know what we can find with that machine and what we can't find with that machine.

Mr. SCHNEIDER. I think you have to know whether or not it meets the established performance requirements.

Mr. STUPAK. Is it one of the performance requirements to know what to detect and not detect.

Mr. SCHNEIDER. Mr. Chairman, I have not studied the detail performance requirements to be able to make that assessment at this point.

Mr. STUPAK. But you are head of acquisition. Are you going to buy something that you know that doesn't detect things and what it can and cannot detect, or do you just buy it based on price?

Mr. SCHNEIDER. No, we don't just buy based on price.

Mr. STUPAK. So you want to know what it can detect and what it cannot detect?

Mr. SCHNEIDER. As this thing works its way up the chain I will ultimately get involved in the details to be able to make an informed recommendation to the Secretary.

Mr. STUPAK. Will you let me ask the same question I asked Mr. Oxford. You will be the one making the recommendations to Mr. Secretary Chertoff, won't you, on this ASP, you will be making the recommendation?

Mr. SCHNEIDER. I will make several recommendations.

Mr. STUPAK. Whether or not you should purchase the ASP, will you make that recommendation?

Mr. SCHNEIDER. The investment review board will make that.

Mr. STUPAK. And are you part of that investment review board?

Mr. SCHNEIDER. Yes, I am.

Mr. STUPAK. You are chairman of it, are you not?

Mr. SCHNEIDER. I am the vice chairman.

Mr. STUPAK. So before you make that recommendation to the Secretary, will your board and you, don't you want to know what this machine can and cannot detect, what are the limitations of this machine?

Mr. SCHNEIDER. We are going to ask an awful lot of questions regarding the performance.

Mr. STUPAK. Will that be one of the questions you are going to ask?

Mr. SCHNEIDER. I would like to review the data. I would want to know what the performance of this machine is.

Mr. STUPAK. Including the outer limits, wouldn't you want to know the performance on the outer limits of this machine?

Mr. SCHNEIDER. On the surface, it sounds like that is a common-sense thing to want to know.

Mr. STUPAK. And also a security thing you would want to know, right?

Mr. SCHNEIDER. I think it is important to understand the basis for the performance requirements which is the capability that is required.

Mr. STUPAK. Absolutely. If this machine has limitations, this ASP, we want to know that, don't we?

Mr. SCHNEIDER. Well, if it has limitations and it cannot meet its established performance requirements, a key performance parameter, I think that is absolutely critical. But there was rationale that went into establishing each of the performance requirements. And so we would look for objective quality evidence, if you will, that, in fact, meets those performance requirements.

Mr. STUPAK. Mr. Secretary, what is the risk of a false negative here with an ASP machine that has been fully tested? What is the risk?

Mr. SCHNEIDER. I can't assess that risk.

Mr. STUPAK. It can be catastrophic? Isn't that what you all said in your opening statements, right?

Mr. SCHNEIDER. I didn't say that in my opening statement.

Mr. STUPAK. OK. Well, you heard other people say that at the table, right?

Mr. SCHNEIDER. I heard other people say that.

Mr. STUPAK. So there is a risk of a false negative. So don't we want to know what the false negative is before we deploy it in an ASP?

Mr. SCHNEIDER. I don't have the performance requirements in front of me, but I believe there are requirements in there for false negatives, as well as false positives.

Mr. STUPAK. Let me ask a couple questions, if I can Mr. Secretary. Your September 14 letter indicates that George Thompson, Deputy Director of Homeland Security, the HSI, will replace Mr. Higby as chair of the independent review and that you will be issuing a task order to fund this work, correct?

Mr. SCHNEIDER. Yes, sir.

Mr. STUPAK. When did you and Mr. Thompson first discuss heading up the review of the HSI?

Mr. SCHNEIDER. I discussed it with the head of the Homeland Security Institute on Thursday afternoon. I met with Mr. Thompson on Friday morning. This is last Friday.

Mr. STUPAK. OK. So Thursday afternoon, Mr. Higby was there, but after your discussion you decided to put—

Mr. SCHNEIDER. You said Mr. Higby was there. Mr. Higby was where?

Mr. STUPAK. He was head of your HSI.

Mr. SCHNEIDER. No, he was not the head of HSI.

Mr. STUPAK. OK. What was he?

Mr. SCHNEIDER. He was and still is the dean of the Defense Acquisition University School of Program Management?

Mr. STUPAK. He was head of the review team, right?

Mr. SCHNEIDER. He was head of the review team. I talked to him I think it was that morning about the fact or the evening before, I forget exactly when, that I was going to replace him.

Mr. STUPAK. OK. And then you decided to go with Mr. Thompson? You talked with him Thursday afternoon.

Mr. SCHNEIDER. No. I talked to his boss, the head of the Homeland Security Institute on Thursday afternoon. I met with Mr. Thompson on Friday morning. I did not know Mr. Thompson. And for that matter, I don't know what the, with one exception, I don't know any of the people that are on the review team.

Mr. STUPAK. If you didn't know Mr. Thompson, then why did you decide to hire Mr. Thompson to head up your independent review?

Mr. SCHNEIDER. Mr. Thompson is one of the senior officials at the Homeland Security Institute, or FFRDC. When I realized that perhaps I could use one of the senior folks at HSI to lead the effort, I talked to the head of the HSI. And I said I would like your recommendations for somebody to lead this particular effort. We worked with HSI in supporting other reviews of other DHS programs. And I was pleased—I've been pleased to date with the type of support we have got.

He then basically gave me, I think it was, two recommendations. I looked at their backgrounds, and based upon my discussion with him I thought that Mr. Thompson would be the best choice. I wanted to confirm that by actually meeting with him. That was set up on Friday morning.

Mr. STUPAK. OK. HSI gets 100 percent of its funding from the Department of Homeland Security, doesn't it?

Mr. SCHNEIDER. I believe it does.

Mr. STUPAK. Isn't it also the case that HSI has some of its employees detailed or embedded in DNDO?

Mr. SCHNEIDER. I don't know if they are embedded at DNDO or not.

Mr. STUPAK. HSI doesn't have anyone detailed over to—

Mr. SCHNEIDER. I have no idea.

Mr. STUPAK. OK.

Mr. SCHNEIDER. I know Mr. Thompson is not embedded in DNDO.

Mr. STUPAK. If they are detailed or embedded in DNDO, could this have an impact on HSI's independence?

Mr. SCHNEIDER. No, it doesn't. I get back to my comment what an FFRDC is. This is bread-and-butter type of work for FFRDCs. Whether it is in defense or the FAA, this is what they do.

Mr. STUPAK. Are there any HSI employees embedded in your office?

Mr. SCHNEIDER. Not that I am aware of.

Mr. STUPAK. Do you have any HSI employees detailed to your office?

Mr. SCHNEIDER. Not that I am aware of.

Mr. STUPAK. OK. Isn't it also the case some of the funding for HSI comes from your office?

Mr. SCHNEIDER. We have an agreement with HSI to support our reviews. This is exactly what HSI—

Mr. STUPAK. You fund HSI, right?

Mr. SCHNEIDER. I fund HSI within the scope of what an FFRDC is supposed to do in accordance with the interagency agreement we have established.

Mr. STUPAK. Isn't the case HSI leaders, including Mr. Thompson and Mr. Anderson, the HSI director, lobbied your office for work?

Mr. SCHNEIDER. I have never met Mr. Anderson until I think it was Wednesday afternoon.

Mr. STUPAK. Right.

Mr. SCHNEIDER. So I wouldn't have known him if I ran into him in the hallway.

Mr. STUPAK. So my question was has Mr. Thompson or Mr. Anderson, the HSI director, lobbied your office for work?

Mr. SCHNEIDER. No. I have never—as I said, until Thursday, in the case of Mr. Anderson, I never met the guy.

Mr. STUPAK. Let us go back to your September 14 letter, the task order. Is the task order, is that a product of asking for work and soliciting work from HSI?

Mr. SCHNEIDER. Right. We have an established agreement by which all work under the FFRDC is done. I would be happy to provide you—

Mr. STUPAK. Sure. And in your due diligence, you said you looked at HSI to make sure they are a good agency to get recommendations from, right?

Mr. SCHNEIDER. What I said was HSI is our FFRDC. This is what FFRDCs do for a living.

Mr. STUPAK. Sure.

Mr. SCHNEIDER. We are using them in other areas to support other reviews of individual programs. And they appear to be doing a good job. That is one of the reasons why I assumed whoever made the decision to select this group to be the FFRDC some years ago exercised pretty good judgment.

Mr. STUPAK. As the Under Secretary, you are aware that the Senate Homeland Security Appropriations Act of fiscal year 2008 has noted lackluster performance by HSI, cut their core funding by 50 percent, and noted that their authorization to exist will expire in 2009. You are aware of all that?

Mr. SCHNEIDER. No, I am not.

Mr. STUPAK. Isn't it also the case that HSI has had four directors in 3 years?

Mr. SCHNEIDER. I don't know.

Mr. STUPAK. Isn't it also the case that the DHS contract with Anser, the company running the Homeland Security Institute, expires next year and they want a contract extension?

Mr. SCHNEIDER. I am not involved—I am not aware of the details of the contract extension.

Mr. STUPAK. Could this need for an extension have any potential impact on HSI's ability to give an unvarnished assessment of the ASPs?

Mr. SCHNEIDER. I would like to point out, again, that I have asked Mr. Thompson to head this team. The majority of the people that are on this team come from Oakridge, Brookhaven, Lawrence Livermore, and one outside person. And just like with DTRA, it was not a DTRA study. I have gone to No. 1, No. 2, and No. 3 guy at HSI to run this study. So I think to try to characterize it as an HSI study or review probably would not be totally accurate.

Mr. STUPAK. Well, the problem I am having from where I sit, the connectiveness between HSI and the Department of Homeland Security, you don't bite the hand that feeds you. And then yet we have a completely independent agency over here called Government Accountability Office, and you seem to ignore them, but you seem to embrace HSI, even though you have had three different directors in 4 years, the Senate says they are not doing a real robust job here, they have cut their funding, they are due to expire. I would think we are thinking of something so important as our homeland

security and what a catastrophic risk this country could face if we don't do this right, you would look to the completely independent agency called Government Accountability Office and embrace their concerns and work with them to alleviate any concerns Congress would have, or more importantly, the American people would have about the ASPs being our main source of detection on the borders. You agree with that?

Mr. SCHNEIDER. Yes, sir. First off, I think if you have six members of the team that are not part of HSI, and a team leader, and with the full knowledge of the fact that when this review is completed and presented to the Department we expect the whole team to participate in that—

Mr. STUPAK. Did you vet all six of those people on there?

Mr. SCHNEIDER. I am sorry?

Mr. STUPAK. Did you vet all six of those people on this independent review team.

Mr. SCHNEIDER. All six people are in the process of signing conflict of interest statements.

Mr. STUPAK. Did you vet them before?

Mr. SCHNEIDER. When you say "vet," what do you mean by "vet," sir?

Mr. STUPAK. Did you check their background? Did you make sure they had no conflict of interest and all of that?

Mr. SCHNEIDER. First of all, I wanted to know who they were, whether or not they were qualified to be on this group.

Mr. STUPAK. Did you appoint these six people as your independent review?

Mr. SCHNEIDER. No.

Mr. STUPAK. Who did appoint them?

Mr. SCHNEIDER. First of all, it wasn't a question of appointment. I refer back to my testimony.

Mr. STUPAK. Who assigned these six people to the independent—

Mr. SCHNEIDER. I asked the associate director of DTRA to assemble of a team of people. I relied on his judgment to pick the set of qualified people to run this particular review.

Mr. STUPAK. That gentleman is gone now, right?

Mr. SCHNEIDER. But in the process of what he did initially, he identified several candidates that could participate.

Mr. STUPAK. Sure.

Mr. SCHNEIDER. That was basically refined and completed after he completed—after his involvement ended. And the fact of the matter is they are all nuclear physicists or nuclear chemists.

Mr. STUPAK. Great. That is good. Our problem is we got changing directors, changing people, three people in 6 weeks, widening schedules, validation without the outer limits being known. We are talking about catastrophic risk here, I want to make sure we do it right.

Mr. SCHNEIDER. Would you give me a chance to answer some of those?

Mr. STUPAK. Sure. I want to make sure we do it right so we don't have to worry about that catastrophic risk we have been talking about this morning. More importantly, I think the American people would like to make sure we have it done right.

Mr. SCHNEIDER. All right. Let us take them one at a time. First of all, the schedule. Based upon a discussion that Mr. Oxford, the deputy commissioner from CBP and I had, it was at that point in time when the deputy commissioner from CBP said I really would like another 2 months of field validation testing.

Mr. STUPAK. Great.

Mr. SCHNEIDER. And so that was the reason for the change in schedule.

Mr. STUPAK. But you won't promise me that you will let these tests be conducted, give GAO time to look at the validity of the tests before you make a recommendation on whether or not we should move forward with the ASP.

Mr. SCHNEIDER. I think Mr. Oxford clearly stated it is the Secretary's prerogative as to how much information and what information—

Mr. STUPAK. I agree, but you have to make the recommendation. You have a responsibility to make the recommendation to the Secretary.

Mr. SCHNEIDER. I have a responsibility to make the recommendation, and I will make that recommendation.

Mr. STUPAK. Will you promise me you won't make the recommendation until we do the outer limits testing we are talking about until GAO has a chance to look at it.

Mr. SCHNEIDER. I will not make that commitment here today.

Mr. STUPAK. That is why, sir, we have to have this back and forth, because I think it is critically important and it is only common sense that someone looks at the tests and know the outer limits of the machines before you make a recommendation to spend \$1.2 billion on ASPs that may or may not work. And the reason why we don't know if they may or may not work, because you are not giving the people time to test it, to make sure it is certified, so GAO can look at it, a truly independent agency, and say this is what we ought to do. If we are talking about catastrophic problems for this country, I would hope we get it right. Remember, we have to be right 100 percent of the time; the terrorist only has to be right once. Now that is not nuclear science, that is just common sense. Don't you agree with me?

Mr. SCHNEIDER. Mr. Chairman, you had quite a lot of stuff in that particular statement. And I frankly can't remember everything you just rattled off.

Mr. STUPAK. It was just a quick summation of this hearing we had today. You work with this stuff day in and day out. I thought you would keep it straight. My question isn't that complex.

Mr. SCHNEIDER. Sir, let me make it simple. I do not agree with everything you said. So whether or not you included it in that comprehensive statement or not, there is no way that—

Mr. STUPAK. Would you like the court reporter to read it back to you so then you could answer the question? We have that ability here. All I am asking, and you keep telling me, no, you won't, that you allow all the testing that is necessary, that GAO has a chance to analyze it, make the recommendations before you, before you, Mr. Oxford, and others make the recommendations to Secretary Chertoff to spend \$1.2 billion on a machine we don't know works or not work, when your statistical sample is so small it is not even

significant in the whole equation, but you are relying upon it. Those are the things we brought out here so far today, and that is all I am asking you to do. Common sense. Don't you think?

Mr. SCHNEIDER. The recommendation on whether or not to spend the money as part of a production and deployment would be made only after and if the Secretary makes a certification regarding the performance of the system. It is a sequential step. So from my standpoint, the issues regarding the performance of the system will have been thrashed out, evaluated, assessed. The Secretary is a very demanding decision-maker. He asks for lots of information. He will probably, as in my discussion with him, ask the GAO to come in and brief him so he can quiz them. And he will factor all that information into making the certification regarding performance.

Mr. STUPAK. So you know the Secretary is going to ask GAO in before he makes his decision? You know that? Do you know that?

Mr. SCHNEIDER. Mr. Chairman, I talked to the Secretary. He explained his approach. It is to get information from multiple sources.

Mr. STUPAK. And he said GAO?

Mr. SCHNEIDER. In this particular effort, he told me he may, in fact, ask the GAO to come in and brief him.

Mr. STUPAK. Now "may" is discretionary. It is not mandatory, right? May? He may ask GAO? And he may not ask GAO?

Mr. SCHNEIDER. I think that is the prerogative of the Secretary.

Mr. STUPAK. Sure it is. But isn't it your responsibility to the Secretary and to the American people to make sure all the questions on testing, whether it is outer limits, are done and fully evaluated before you make that recommendation?

Mr. SCHNEIDER. I think it is my responsibility to the Secretary to give him my best advice based upon the testing that has been done to date, what testing has not been done, what testing may be planned in the future, and to provide that as part of my overall recommendation on whether he ought to certify the performance.

Mr. STUPAK. I agree with you. But let me ask you this. Have you read GAO's report on the ASP testing? Have you read it?

Mr. SCHNEIDER. Which report, sir? There is a lot of GAO reports.

Mr. STUPAK. Today's testimony.

Mr. SCHNEIDER. I didn't get this testimony, unfortunately, until during the hearing, when you asked me whether or not I agreed with those recommendations. So I was slightly stumbling when you asked me if I agreed with all four recommendations. I hadn't read it at the time you asked me the questions. So if that is the report, during the break I scanned the report.

Mr. STUPAK. OK. Do you agree with what GAO is saying?

Mr. SCHNEIDER. I do not agree with the recommendations.

Mr. STUPAK. That is not what I asked you. I said do you agree with the report on the ASP testing?

Mr. SCHNEIDER. I do not understand in enough detail the details around the different views that you have been talking about here today.

Mr. STUPAK. If you don't understand this, weren't you supposed to certify this tomorrow or yesterday? Wasn't September 17—

Mr. SCHNEIDER. I don't certify anything. The Secretary is the one that certifies.

Mr. STUPAK. All right, I am sorry, made your recommendation to the Secretary. Weren't you supposed to do that yesterday?

Mr. SCHNEIDER. The schedule was changed.

Mr. STUPAK. Right. So I would think you would be more on top of this, especially the GAO report, if you were supposed to make a recommendation this week. What date do you intend to get involved in the details of this certification recommendation?

Mr. SCHNEIDER. We would start very shortly over the next week or two laying out the detailed schedule for what steps would be taken prior to, and roughly a rough time frame by which the field validation testing would be completed, what would be an appropriate amount of time for analyzing the results, what would be an appropriate amount of time for the results of that to be provided to the review team, and then kind of work out the schedules as to leading up to a session with the Secretary. So it obviously would be after the 2-month extension on the field validation testing.

Mr. STUPAK. After you make your recommendation to the Secretary, does he have a certain amount of time within which he has to make a decision?

Mr. SCHNEIDER. There is no prescribed—as far as I am aware, there is no prescribed time limit for that. No, as far as I know.

Mr. STUPAK. OK. Mr. Whitfield, you have any questions?

Mr. WHITFIELD. No. Mr. Chairman, I appreciate your having this hearing. And I would just, in concluding, as a conclusion, state that while we know there are several unanswered questions regarding the use of the ASP in primary inspections, most of the scientists that at least we have talked to, and Government officials, agree that the agency should proceed with a limited deployment for secondary inspections. And I don't think anyone would suggest that ASP monitors in secondary screenings wouldn't provide a dramatic improvement over the hand-held devices that are currently being used. So with that, Mr. Chairman, I have no other questions.

Mr. STUPAK. Let me just ask one more question, Mr. Aloise, if I may, of the Government Accountability Office. Has GAO reviewed the phase 3 and blind tests?

Mr. ALOISE. No, sir.

Mr. STUPAK. OK. Has GAO examined the independent review process?

Mr. ALOISE. No, sir.

Mr. STUPAK. Well, we need GAO to continue its review of these tests and injection studies, especially on the independent review. So Mr. Aloise, if you would, would GAO agree to undertake that additional work as part of your ongoing review of the ASP?

Mr. ALOISE. We certainly would intend to, yes.

Mr. STUPAK. OK. They are willing to do it. Are you willing, Mr. Secretary, to make sure that they get the information so they can do their review of the phase 3, the blind tests, and examine your independent review process so they can enlighten Congress on it?

Mr. SCHNEIDER. I agree with most of that. I do not agree that they ought to be involved in our independent review process. I believe that is within the purview of the Secretary to get advice from whoever he wants.

Mr. STUPAK. So you don't think——

Mr. SCHNEIDER. And I don't believe—I think that's part of the predecisional making deliberation process on behalf of the Secretary. So I would not agree at this point in time to—I think any concerns they may have about the testing that has been done to date and the testing plans would be valuable input, but I do not expect, nor would I, at this point in time, agree to provide them access to the details of what that review team does.

Mr. STUPAK. OK. But you are going to give them all the information, the data on phase 3, the blind testing, and injection studies.

Mr. SCHNEIDER. I think Mr. Oxford has already testified today about information that has been provided and information that will be continuing to be provided as part of their ongoing rolling review, so to speak.

Mr. STUPAK. Why is it then they testified today they can't get the information? Have you, GAO, received all the information you need from DNDO or from the Secretary?

Mr. ALOISE. We have not received the blind tests or phase 3 tests because they are still analyzing that, that is correct.

Mr. STUPAK. And we don't know when that is going to be done, but when it is done you, Mr. Secretary, you will make sure it gets to the GAO so they can review it?

Mr. OXFORD. Mr. Chairman, if I could take that.

Mr. STUPAK. Sure.

Mr. OXFORD. We have already committed to doing that. As soon as those test reports are completed, they will be given to the GAO.

Mr. STUPAK. OK.

Mr. OXFORD. They have the data. We are finalizing the actual report that they can work from.

Mr. STUPAK. OK. Will you make sure they get the injection study data, too?

Mr. OXFORD. The injection studies will take about a year, but we can certainly talk about the plan for how the injection studies will go forth, yes, sir.

Mr. STUPAK. Well, when it is done in a year, you will give it to them?

Mr. OXFORD. Absolutely.

Mr. STUPAK. So there really shouldn't be a certification for at least a year, because the injection studies won't be done, right?

Mr. OXFORD. No, sir.

Mr. STUPAK. You will do certification before the injection studies are completed?

Mr. OXFORD. We may make a recommendation, because we think most of the injection study work and future testing will be primarily based on what the ranking member said, based upon the decision for primary, not secondary deployment.

Mr. STUPAK. Any questions, Mr. Whitfield?

Mr. WHITFIELD. Mr. Schneider, you are having these conflict of interest issues are certainly being monitored by the Department, though, correct?

Mr. SCHNEIDER. Yes, sir.

Mr. WHITFIELD. OK. Thank you.

Mr. STUPAK. OK. No further questions. I will dismiss this panel and thank you all for coming today. I am sure before this thing is validated we may have you back, or maybe we will have the Sec-

retary back. But thank you for coming and thank you for answering our questions. That concludes all the questions. I want to thank all of our witnesses for coming today and your testimony.

I ask for unanimous consent that the hearing record will remain open for 30 days for additional questions for the record.

Without objection, the record will remain open. I ask unanimous consent that the contents of our evidence binder there in front of Mr. Oxford, with the exception of those documents marked for official use only, be entered into the record. In addition, the committee will retain a copy of the full evidence binder for the record. Without objection, the documents will be entered into the record. That concludes our hearing. Without objection, the meeting of this subcommittee is adjourned. Thank you all for being here.

[Whereupon, at 12:44 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

HENRY A. WAXMAN, CALIFORNIA  
 EDWARD J. MARKEY, MASSACHUSETTS  
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DENNIS R. FITZGERBONS, CHIEF OF STAFF  
 GREGG A. ROTHSCHEID, CHIEF COUNSEL

ONE HUNDRED TENTH CONGRESS

**U.S. House of Representatives**  
**Committee on Energy and Commerce**  
 Washington, DC 20515-6115

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October 19, 2007

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Mr. Gene Aloise  
 Director  
 Natural Resources and Environment Team  
 U.S. Government Accountability Office  
 441 G Street, N.W.  
 Washington, D.C. 20548

Dear Mr. Aloise:

Thank you for appearing before the Subcommittee on Oversight and Investigations on Tuesday, September 18, 2007, at the hearing entitled "Nuclear Terrorism Prevention: Status Report on the Federal Government's Assessment of New Radiation Detection Monitors." We appreciate the time and effort you gave as witnesses before the Subcommittee.

Under the Rules of the Committee on Energy and Commerce, the hearing record remains open to permit Members to submit additional questions to the witnesses. Attached are questions directed to you from Subcommittee Chairman Stupak. In preparing your answers to these questions, please address your response to Chairman Stupak and include the text of his question along with each of your responses.

In order to facilitate the printing of the hearing record, your responses to these questions should be received no later than the close of business **Wednesday, October 31, 2007**. Your written responses should be delivered to **316 Ford House Office Building** and faxed to **202-225-5288** to the attention of Kyle Chapman, Legislative Clerk. An electronic version of your response should also be sent by e-mail to Mr. Kyle Chapman at [kyle.chapman@mail.house.gov](mailto:kyle.chapman@mail.house.gov) in a single Word formatted document.

Mr. Gene Aloise  
Page 2

Thank you for your prompt attention to this request. If you need additional information or have other questions, please contact Kyle Chapman at (202) 226-2424.

Sincerely,



JOHN D. DINGELL  
CHAIRMAN

Attachment

cc: The Honorable Joe Barton, Ranking Member  
Committee on Energy and Commerce

The Honorable Bart Stupak, Chairman  
Subcommittee on Oversight and Investigations

The Honorable Ed Whitfield, Ranking Member  
Subcommittee on Oversight and Investigations

**Responses to Questions asked of GAO subsequent to the September 18, 2007 hearing of the House Committee on Energy and Commerce, Subcommittee on Oversight and Investigations.**

**Q1:** What are the risks to our Nation's efforts to detect nuclear smuggling in cargo if we do not know the detecting limits of the Advanced Spectroscopic Portal monitors (ASPs)?

**Answer:** The primary risk from not knowing the ASPs' detection limits comes from "masking"—i.e., hiding special nuclear material in a mix of benign radiological materials. If the emissions from the benign radiological material are strong enough, the ASP may identify only the presence of this material and miss the special nuclear material. It is important that CBP officials know the types of materials and emissions levels that may cause the ASP to ignore the presence of nuclear materials. Without this knowledge, it will be harder for CBP to develop effective countermeasures to overcome any weaknesses in the equipment.

**Q2:** If you were designing a blind test, would you attempt to smuggle through radioactive materials that terrorists might have to see how the machines respond? Is that what the Domestic Nuclear Detection Office (DNDO) did in Phase I, or did they send through materials that the ASP vendors knew were coming?

**Answer:** In our view, sound way to conduct a blind test would be to use the materials and methods that terrorists would use do to smuggle nuclear materials inside our borders. By comparison, the approach DNDO used in Phase I was biased and not very rigorous. Specifically, DNDO conducted dry runs and dress rehearsals using mostly the same materials in the same quantities that it used in the formal tests.

Q3: DNDO says that ASPs will have a backup called a “gross counting” function, and this will signal the need for secondary inspections where there are high-emission levels that could cause the masking of threat materials. Does this not solve the problem of allowing hot cargo to pass undetected when there is highly emitting masking materials?

Answer: The ASPs’ backup “gross-counting” function is essentially the same function that is performed by currently deployed radiation detection equipment—detecting the presence of some type of radiation without identifying the specific isotope causing the radiation. Both should trigger a secondary inspection.

Q4: In the Government Accountability Office’s opinion, is it premature for DNDO to certify to Congress that ASPs represent a “significant increase in operational effectiveness” without finalizing the injection studies?

Yes. Until sound, unbiased testing using a larger array of radiological and nuclear materials, is completed, DHS will not know the full capabilities and limitations of the ASPs. Without this knowledge, DNDO cannot justifiably certify that these machines represent a significant increased operational effectiveness.

Q5: Do you believe that Phase I test data cannot be used for certification because the test methods allowed vendors to calibrate their algorithms in advance allowing them to better see the test materials? What should DNDO have done differently?

**Answer:** We believe that DNDO's Phase I test results are questionable for a variety of reasons, most notably the fact that it used many of the same materials in the same quantities in its dry runs, dress rehearsals, and formal tests. In doing so, DNDO provided the vendors with the information they needed to perform well during the tests. In our view, materials and their quantities should differ from those that the ASP vendors used to calibrate their ASPs in the dry runs. Testing should attempt to determine what materials the ASPs cannot identify well in addition to determining what they can identify. In addition, DNDO should have used testing procedures that would have exposed the ASPs to situations which were similar to the environment where they would be deployed. For example, there are no dress rehearsals or dry runs at US points of entry or border crossings. Furthermore, DNDO should have applied techniques such as blind tests and double blind tests that would have assured itself and others that the results of the testing were unbiased.

**Q6:** Would a two-tiered certification be a better approach than a "one size fits all" certification, which covers both primary and secondary screening?

**Answer:** In our view, certification of the ASPs, whether it is one or two-tiered, is secondary in importance to conducting unbiased, scientifically rigorous tests. The tests should clearly identify the capabilities and limitations of the ASPs before the Secretary certifies whether the ASPs are ready for deployment in primary or secondary screenings.

**Q7:** What is GAO's recommendation with respect to deployment of ASPs in secondary screening?

**Answer:** In our view, DNDO should not deploy ASPs for either secondary or primary screening until it has conducted unbiased and rigorous testing of the ASPs to ascertain their capabilities and limitations.

**Q8:** How much would it cost to properly conduct the tests, if DNDO were to do it over again?

**Answer:** We have not analyzed the costs associated with testing and therefore cannot address this question. This question would be better posed to DNDO. However, it is important to note that a cost analysis could not be completed until it was determined exactly what tests would be performed.

**Q9:** Should DNDO retest ASPs with the proper masking materials to ascertain the detection limits? Should DNDO refrain from retesting until the injection studies are completed?

**Answer:** As we noted in our testimony, injection studies are computer simulations and are not a pure substitute for actual testing. Thus, we would encourage additional testing and do not see why DNDO should delay these tests until it completes the injection studies.

**Q10:** DNDO says that GAO was notified on May 30, 2007, that Phase 3 results would be used in supporting a certification decision. GAO indicates that it first learned that Phase 3 test results would be used in support of certification on August 29, 2007. Did DNDO mislead GAO?

**Answer:** DNDO's assertion that it notified us in May 2007 that Phase 3 test

results would be used to support a certification decision is incorrect. DNDO did not tell us of its intent to use Phase 3 test results to support certification until August 29, 2007.

**Q11:** If GAO had learned that Phase 3 results would be used in support of certification on May 30, 2007, would it have changed GAO's approach to the review of the testing?

**Answer:** In its own test plan, DNDO states that Phase 3 results are not statistically valid for being used to support a certification decision. Being aware sooner that Phase 3 tests would be used to support a certification decision would not have changed the results of our review.

**Q12:** Can the sample sizes used in Phase 3 tests be deemed statistically significant with respect to probability of detection? If not, can they still be used to support a full-scale production decision?

**Answer:** In the Phase 3 test plan (March 30, 2007), DNDO acknowledges that the Phase 3 tests did not contain enough runs for the results to be statistically significant. Further, DNDO states in the test plan that the Phase 3 tests were not intended to support secretarial certification. Thus, in our view, the test results should not be used to justify certification of the ASPs.

**Q13:** You testified that without seeing Phase 3 and blind test results, it is too soon to know whether DNDO should simply retest. If the Phase 1 tests are biased, and the Phase 3 tests lack statistical significance, why should DNDO not be directed to retest?

Answer: As of December 17, 2007, despite numerous requests, DNDO has yet to provide GAO with the results from the blind tests or the Phase 3 tests. We had hoped to be able to analyze the test results by now to make a determination about the ASP's capabilities. Without this information, and because the original tests were biased, our view is that new tests may be warranted.

Q14: In the course of your investigation, you contacted both the Customs and Border Protection (CBP) and Department of Energy (DOE), and you then advised DNDO staff about their respective concerns with the testing. Was DNDO upset that you spoke independently with CBP and DOE? Was there an effort to stifle your discussions with these agencies or the national labs?

Answer: In a meeting on May 30, 2007, DNDO officials told us that they were not pleased that we contacted CBP and DOE officials without their knowledge or presence. In addition, DOE officials have told us that DNDO officials rebuked them after speaking with us about their concerns with DNDO's test methods. In one case, Pacific Northwest National Laboratory (PNNL) officials declined to speak with us over the telephone unless DNDO officials were included in the teleconference.

Q15: In your testimony, you stated that "this has not been the most transparent review we have ever worked on. We have had to fight and scrape for every piece of information we have gotten." Please provide examples where this has occurred. What specific actions could Congress take to improve transparency at DNDO?

Answer: During the course of our review, GAO made numerous requests to

DNDO, Pacific Northwest National Laboratory (PNNL), DNDO's contractors and the National Institute of Standards and Technology (NIST) for information and documentation related to the ASP program. On multiple occasions, DNDO officials attempted to block GAO from receiving information regarding the ASP program from anyone but DHS and insisted that contractors, NIST, and PNNL provide all information that we requested to DNDO for prior review. At that point, DNDO would then make the information available to GAO in the format as DNDO saw fit. During this time GAO canceled several meetings scheduled with contractors as result of DNDO's insistence in participating in all meetings.

Since the hearing, in performing follow-up for the Subcommittee, GAO's Office of General Counsel has become significantly involved in our efforts to obtain information directly from contractors, NIST, and PNNL. Our understanding is that DNDO has directed the contractors, NIST, and PNNL not to provide GAO with any documentation directly, and to turn over anything prepared in response to a GAO request directly to DNDO's Chief Counsel—who then decides what information to provide to GAO.

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ONE HUNDRED TENTH CONGRESS

**U.S. House of Representatives**  
**Committee on Energy and Commerce**  
 Washington, DC 20515-6115

JOHN D. DINGELL, MICHIGAN  
 CHAIRMAN

October 18, 2007

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Mr. Dave Huizenga  
 Assistant Deputy Administrator  
 Office of International Material Protection and Cooperation  
 National Nuclear Security Administration  
 U.S. Department of Energy  
 1000 Independence Ave., S.W.  
 Washington, D.C. 20585

Dear Mr. Huizenga:

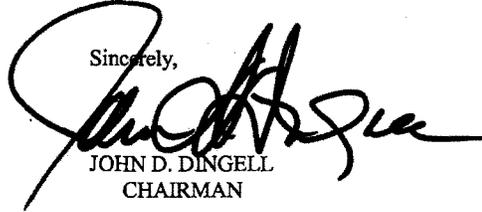
Thank you for appearing before the Subcommittee on Oversight and Investigations on Tuesday, September 18, 2007, at the hearing entitled "Nuclear Terrorism Prevention: Status Report on the Federal Government's Assessment of New Radiation Detection Monitors." We appreciate the time and effort you gave as a witness before the Subcommittee.

Under the Rules of the Committee on Energy and Commerce, the hearing record remains open to permit Members to submit additional questions to the witnesses. Attached are questions directed to you from Subcommittee Chairman Stupak. In preparing your answers to these questions, please address your response to Chairman Stupak and include the text of his questions along with your response.

In order to facilitate the printing of the hearing record, your responses to these questions should be received no later than the close of business **Wednesday, October 31, 2007**. Your written responses should be delivered to **316 Ford House Office Building** and faxed to **202-225-5288** to the attention of Kyle Chapman, Legislative Clerk. An electronic version of your response should also be sent by e-mail to Mr. Kyle Chapman at [kyle.chapman@mail.house.gov](mailto:kyle.chapman@mail.house.gov) in a single Word formatted document.

Mr. Dave Huizenga  
Page 2

Thank you for your prompt attention to this request. If you need additional information or have other questions, please contact Kyle Chapman at (202) 226-2424.

Sincerely,  
  
JOHN D. DINGELL  
CHAIRMAN

Attachment

cc: The Honorable Joe Barton, Ranking Member  
Committee on Energy and Commerce

The Honorable Bart Stupak, Chairman  
Subcommittee on Oversight and Investigations

The Honorable Ed Whitfield, Ranking Member  
Subcommittee on Oversight and Investigations



**Department of Energy**  
**National Nuclear Security Administration**  
Washington, DC 20585

October 30, 2007

The Honorable Bart Stupak  
Chairman  
Subcommittee on Oversight and Investigations,  
Committee on Energy and Commerce  
United States House of Representatives  
Washington, D.C. 20515

Dear Mr. Chairman:

On September 18, 2007, David Huizenga, Assistant Deputy Administrator, Office of International Material Protection and Cooperation, National Nuclear Security Administration, U.S. Department of Energy, testified regarding the status report on the Federal Government's assessment of new Radiation Detection Monitors (RDD).

Enclosed are the answers to questions submitted by you, for the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Renee Wilhite, on (202) 586-7597.

Sincerely,

A handwritten signature in black ink that reads "David A. Campbell".

David A. Campbell  
Director  
Office of Congressional, Intergovernmental  
And Public Affairs

Enclosures



**QUESTIONS FROM THE HONORABLE BART STUPAK**

On Radiation Detection Monitors

Q1. How many radiation portal monitors does the Department of Energy (DOE) or its partners have deployed as part of Megaports or the Second Line of Defense (SLD) program?

A1. Over the last 15 years DOE has worked with its partners in host countries to successfully deploy more than 1500 radiation portal monitors (RPMs) at over 300 facilities and border crossings in over 25 countries.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q2. Does DOE have confidence that a combination of Poly Vinyl Toulene (PVT) monitors, radioactive isotope identification devices (RIIDs), and continuous operations (CONOPS) standard operating procedures are effective for detecting nuclear materials hidden in cargo as part of the Megaports Program?
- A2. Yes, DOE has a high level of confidence that a combination of PVT monitors and RIIDs, when effectively utilized according to standard operating procedures, are effective for detecting nuclear materials hidden in cargo. The PVT-based nuclear detection technology deployed by the SLD program is proven technology, capable of operating effectively in varied, and in many instances harsh environmental conditions. This technology was developed to ensure nuclear material security at DOE weapons sites and the specific monitors that we deploy have been tested and evaluated by our National Laboratory technical experts for over three decades. Indeed, NNSA works with foreign partners to install this same type of monitor at the foreign weapons laboratories and nuclear facilities to prevent insiders from smuggling SNM out of these facilities. Our extensive experience with these monitors ensures that we can deploy them effectively and ensure their long-term sustainability.

The PVT monitors detect the presence of radiation and feeds alarm information to operators, typically customs agents or border guards, located in a local or central alarm station. The communications system graphs the gamma or neutron signal and helps the operators identify what type of alarm has occurred. At this point, the vehicle or pedestrian is retained and handheld equipment is used as part of a secondary inspection to identify the specific radioisotopes that caused the alarm. The handheld identification equipment that we currently deploy utilizes sodium-iodide or

germanium technology and is the standard commercially available technology. Determination of the specific isotopes involved and their specific location is important because a number of common materials such as ceramic tile and kitty litter, in large quantities, may signal an alarm due to their relatively high concentration of radioisotopes. We call these "NORM" alarms, for 'naturally occurring radioactive material' alarms.

Experience has shown that effective use of the hand-held equipment is highly dependent on the skill and training of the onsite officials as they try to locate the source of the alarm. To this end, the Second Line of Defense program trains those individuals who will be operating the equipment to help ensure proper use.

- b. "Once the tests and studies have been completed, evaluated, and validated, DHS should determine in cooperation with CBP, DOE, and other stakeholders including independent reviewers, if additional testing is needed."
- A3b. DOE experts believe that the upcoming injection studies should indeed allow us to determine whether additional testing is needed. The results of the injection studies may in fact answer our remaining questions. If they do not, then these studies will provide the information needed to focus further testing.
- c. "If additional testing is needed, the Secretary should appoint an independent group within DHS, not aligned with the ASP acquisition process, to conduct objective, comprehensive, and transparent testing that realistically demonstrates the capabilities and limitations of the ASP system. This independent group would be separate from the recently appointed independent review panel."
- A3c. DOE believes that we will know more about how to proceed once we determine whether and what kinds of additional testing are required. At that point, we will cooperate fully with DHS and GAO in determining what kinds of additional technical expertise is needed. As you know, there is a large body of expertise available within the DOE laboratory community from which to draw.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q4. During fiscal year (FY) 2008, does DOE plan full-scale deployment of ASP monitors in secondary screening in lieu of RIIDs (Radioisotope Identifier) Is it planning to conduct operational testing in secondary screening and continue to use RIIDs?
- A4. No, DOE does not plan full-scale deployment of ASP monitors in secondary screening in lieu of RIIDs. First, and most importantly, operational needs and constraints at this point suggest that we will need ASPs in secondary inspections at large seaports, not our land border crossings. Therefore, DOE plans to continue using RIIDs for the long term at many locations. Regarding deployment at large seaports, we anticipate using the RIIDs as back-up identification tools in conjunction with ASPs while we conduct operational testing of ASPs in secondary screening. DOE has purchased 12 Thermo Variant "C" ASPs (through an existing DNDO contract) and intends to install them at secondary inspection locations at select Megaports. The first of these units has been installed at the Port of Southampton as a pilot and is currently undergoing operational testing.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q5. Did DOE advise DNDO in November 2006 that the Phase I test plans should characterize the detection limits of ASPs with types of naturally-occurring radioactive materials that the Megaports program has observed in international commerce?
- A5. It is our understanding that DNDO had always planned to carry out injections studies at some point, but DOE advised DNDO as to the importance of conducting threat injection studies designed to be validated by Phase I test results in order to characterize ASP detection limits and NORM masking limits. The need to conduct threat injection studies was identified because it is not possible to take threat objects to the field and imbed them in cargo containers. As such, it is necessary to use data that characterizes the stream of commerce and super-impose ("inject") data that characterizes threat objects to determine performance against a wide range of threats and cargoes.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q6. Please describe the kinds of masking materials that you wanted DNDO to use. (If necessary, please provide and answer separately and mark accordingly, if sensitive law enforcement or national security information would be disclosed.)
- A6. DOE requested that NORM materials include Uranium-238 decay chain isotopes (including Ra-226) and Thorium-232 decay chain isotopes with sufficient radioactivity to represent all but the hottest 10% of cargo seen in commerce. DOE provided a list of suggested materials expected to contain these radioisotopes at representative radioactivity levels including zircon sand, monazite sand, fly ash, and ceramic tiles.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q7. Has this masking material been found in cargo bound for the U.S.?
- A7. It would be best for DOE to defer to DHS on what has been found in cargo that arrives at U.S. seaports.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

Q8. What was DNDO's response to your request? Did they undertake these particular studies in Nevada?

A8. Although these suggestions were not incorporated in the Nevada testing as far as we know, we understand from DNDO that they believed it may have been too late in the scheduling process to locate and include these materials. In any case, we believe that the injection studies, and whatever follow-on testing is determined to be necessary, have the potential to answer these questions about the impact of masking material.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q9. Did DOE laboratory staff find quantities of recommended masking materials and could these have been made available in time for the Nevada tests conducted in 2007? If this is the case, why do you think that DNDO did not accept your recommendations?
- A9. DOE laboratory staff recommended sources from which to procure some of the suggested materials which are commercially available. DOE recommended that DNDO undertake to procure samples from these sources and characterize the samples radioactivity levels before procurement. DOE did not procure materials for the DNDO testing. DOE is not in a position to speculate why DNDO did not accept our recommendations.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q10. When will the tests DOE is conducting with DNDO at Los Alamos National Laboratory be carried out?
- A10. DOE and DNDO are jointly conducting data gathering exercises to measure ASP responses to bare and shielded SNM. The data to be gathered is necessary input to the threat injection studies. This exercise is planned for late January 2008.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q11. In addition to the joint work with DNDO, DOE is also conducting its own supplemental testing at Los Alamos. Are these tests using masking materials more representative of what is found in international commerce?
- A11. The DOE tests, which are better characterized as a performance evaluation, will include NORM masking materials that are representative of those found in international commerce. This process will allow us to better understand the ASP model (Thermo-Fisher) purchased by DOE for use as a secondary inspection tool in terms of its ability to detect and identify Second Line of Defense program detection goals for HEU in masking and shielding scenarios.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q12. Is this supplemental testing necessary before DOE can begin deploying ASPs in primary screening?
- A12. DOE believes that additional testing needs to be done before ASPs can be deployed in primary screening and has no plans to deploy ASPs in primary at this time. This supplemental testing is focused on maximizing the performance of the ASPs in DOE's planned secondary deployments at large seaports.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q13. Are these tests at Los Alamos National Labs also necessary prior to deploying ASPs in secondary screening?
- A13. The Department of Energy does not believe that supplemental testing is necessary before ASPs are deployed for secondary screening as we believe that in certain types of situations these ASPs offer advantages over the RIIDS that are currently in use. As mentioned above, DOE has begun a pilot deployment of ASPs overseas for operational testing with the first unit installed in Southampton, UK. The handheld RIIDS will also be utilized as part of these deployments, according to standard procedures, while we are piloting the ASPs so that we will have comparable information about both. DOE believes that useful data will also be gathered from the performance evaluation or concept of operations testing planned at Los Alamos. This data, along with data gathered from operational testing at field deployment sites, will help DOE determine the most appropriate secondary screening methods for a variety of operational scenarios (e.g., the maximum speed at which the container can pass through the portal monitors). DOE would then deploy the appropriate secondary screening technology based on the specific operational needs of the given port.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q14. How many ASPs has DOE purchased for use in the Megaports program? How many are operational?
- A14. DOE has purchased 12 Thermo Variant "C" ASPs (through an existing DNDO contract) and intends to install them at secondary inspection locations at select Megaports. The first of these units has been installed at the Port of Southampton and is currently undergoing operational testing. DOE is currently in the process of identifying ports for ASP installation in FY 2008.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

Q15. How does DOE detect threat materials that may be shielded inside of lead or other shielding materials? Where equipment has been deployed in the Megaports Program that can detect shielded threat materials? What are DOE's plans in FY2008 to install such equipment?

A15. The neutron channels of the portals deployed by the Megaports program can detect shielded plutonium based on the significant neutron signature. Shielded HEU remains a difficult material to detect using any type of passive detection.

Initial Secure Freight Initiative (SFI) deployments use x-ray and gamma-ray Non-intrusive Inspection systems in an effort to detect shields that could be used to mask SNM. The effectiveness of the combination of passive radiation portal monitors with x-ray and/or gamma-ray radiography systems to detect shielded threats will be evaluated as field data becomes available.

**QUESTIONS FROM THE HONORABLE BART STUPAK**

- Q16. Your testimony discusses the interception of enriched uranium at the Georgia-Armenian border. How did the Second Line of Defense Program catch the smuggling activity? For what purpose was this being smuggled and by whom?
- A16. In 2003, Georgian border guards at Sadakhlo, using U.S.-provided portal monitor equipment, detected and seized approximately 173 grams of highly enriched uranium carried by an Armenian national. The smuggler was tried in Armenia. Additional questions on the details of this case should be referred to the Governments of Georgia and Armenia.

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 BARON P. HILL, INDIANA

DENNIS R. FITZGERIBONS, CHIEF OF STAFF  
 GREGG A. ROTHCHILD, CHIEF COUNSEL

The Honorable Paul A. Schneider  
 Under Secretary for Management  
 U.S. Department of Homeland Security  
 c/o Office of Legislative Affairs  
 Mailstop 0150  
 Washington, D.C. 20528

Dear Under Secretary Schneider:

Thank you for appearing before the Subcommittee on Oversight and Investigations on Tuesday, September 18, 2007, at the hearing entitled "Nuclear Terrorism Prevention: Status Report on the Federal Government's Assessment of New Radiation Detection Monitors." We appreciate the time and effort you gave as a witness before the Subcommittee.

Under the Rules of the Committee on Energy and Commerce, the hearing record remains open to permit Members to submit additional questions to the witnesses. Attached are questions directed to you from Subcommittee Chairman Stupak. In preparing your answers to these questions, please address your response to Chairman Stupak and include the text of his question along with your response.

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ONE HUNDRED TENTH CONGRESS  
**U.S. House of Representatives**  
**Committee on Energy and Commerce**  
**Washington, DC 20515-6115**

JOHN D. DINGELL, MICHIGAN  
 CHAIRMAN

October 19, 2007

JOE BARTON, TEXAS  
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 TIM MURPHY, PENNSYLVANIA  
 MICHAEL C. BURDICK, TEXAS  
 MARSHA BLACKBURN, TENNESSEE

The Honorable Paul A. Schneider  
Page 2

Thank you for your prompt attention to this request. If you need additional information or have other questions, please contact Kyle Chapman at (202) 226-2424.

Sincerely,  
  
JOHN D. DINGELL  
CHAIRMAN

Attachment

cc: The Honorable Joe Barton, Ranking Member  
Committee on Energy and Commerce

The Honorable Bart Stupak, Chairman  
Subcommittee on Oversight and Investigations

The Honorable Ed Whitfield, Ranking Member  
Subcommittee on Oversight and Investigation

<b>Question#:</b>	1
<b>Topic:</b>	independent review
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** What is the date for the delivery of the report related to the independent review?

**Answer:**

A draft report has been received.

**Question:**

Have you issued anything in writing which sets forth this date?

**Answer:**

No.

<b>Question#:</b>	2
<b>Topic:</b>	Reference Memo
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** Has the "Terms of Reference Memo" which was issued on August 3 been modified?

**Answer:**

No.

<b>Question#:</b>	3
<b>Topic:</b>	GAO
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** Do you agree with the three Government Accountability Office (GAO) recommendations outlined below? If not, please identify specific disagreements and explain why.

a. "DHS [Department of Homeland Security] delay Secretarial certification and full-scale production decisions of the ASPs until all relevant tests and studies have been completed and limitations to these tests and studies have been identified and addressed. Furthermore, results of these tests and studies should be validated and made fully transparent to DOE, CBP [Customs and Border Protection], and other relevant parties."

**Answer:**

As stated in an earlier response, the Secretary of Homeland Security has indicated that he intends to withhold his certification until the system has met all of CBP's operational requirements for secondary inspection. Certification and the KDP-3 decision (permission to enter full rate production) for deployment of ASP in secondary will follow the delivery of software that meets CBP's requirements and any additional testing that is required to validate these requirements have been achieved. There will be additional data collecting, testing, injection studies, and software or hardware upgrades as necessary to the ASP system to achieve the necessary functionality for primary screening. These additional activities will not be prerequisites to Certification or the secondary screening KDP-3 decision.

DNDO is already working collaboratively with CBP and DOE-Second Line of Defense Program (SLD) to share existing test results and jointly develop any additional data collection and test campaigns. At the 27 June 2007 Technical Summit, subject matter experts from DNDO, CBP, and DOE-SLD agreed that no further performance testing was required prior to proceeding with the deployment of ASP units to secondary inspection stations in the field. Participants also agreed that further testing and analysis would be necessary before a decision could be made about deploying ASP for primary inspections at specific locations.

DNDO convened a second Technical Summit on October 23, 2007. The subject matter experts agreed that the overall strategy for data collection and testing of the ASP systems,

<b>Question#:</b>	3
<b>Topic:</b>	GAO
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

including threat injection studies, data collection of bare sources at Los Alamos National Lab (LANL), data collection of challenging naturally occurring radioactive material (NORM) cases to support primary algorithm development, and a final performance test at the Nevada Test Site (NTS) was a sufficient and scientifically defensible basis for validating primary screening applications. The group further agreed that Threat Injection Studies, in conjunction with benchmark measurements, is a scientifically rigorous and well recognized methodology.

**Question:**

b. "Once the tests and studies have been completed, evaluated, and validated, DHS should determine in cooperation with CBP, DOE, and other stakeholders, including independent reviewers, if additional testing, is needed."

**Answer:**

This is already an integral part of the Test and Evaluation Strategy. DNDO is currently working collaboratively with DOE-SLD and CBP to plan all additional data collection and test activities. DOE is leading some of these efforts.

**Question:**

c. "If additional testing is needed, the Secretary should appoint an independent group within DHS, not aligned with the ASP acquisition process, to conduct objective, comprehensive, and transparent testing that realistically demonstrates the capabilities and limitations of the ASP system. This independent group would be separate from the recently appointed independent review panel."

**Answer:**

DHS disagrees that another independent group needs to perform ASP testing.

<b>Question#:</b>	4
<b>Topic:</b>	independent review
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** On August 3, 2007, you tasked Dr. Peter Nanos at the Defense Threat Reduction Agency (DTRA) to head an independent review and supplied a "Terms of Reference Memo."

On what date did Dr. Nanos begin work on the independent review?

**Answer:**

On July 20, 2007, a letter was sent to Dr. Nanos requesting him to form a team of experts to conduct this review.

**Question:**

On what date did he terminate his work on the independent review?

**Answer:**

Dr. Nanos terminated his work on the independent review the week of August 20, 2007.

**Question:**

When did you begin searching for a replacement for Dr. Nanos?

**Answer:**

We began searching for a replacement for Dr. Nanos shortly before Dr. Nanos withdrew from the effort.

<b>Question#:</b>	5
<b>Topic:</b>	Dr. Nanos
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** In your August 20, 2007 letter to Chairman Dingell, you stated that Dr. Nanos would assist in heading up an appropriate team of experts. On August 21, 2007, the Committee was informed that John Higbee was appointed to head up the independent review. Is there a reason that you did not disclose that Dr. Nanos was leaving the independent review team in your August 20, 2007 letter?

**Answer:**

No.

**Question:**

Please describe the actual work performed by Dr. Nanos during his brief tenure.

**Answer:**

During his brief tenure, Dr. Nanos began the search for and coordination of the panel members.

**Question:**

Why was Dr. Nanos removed as the head of this team only 3 weeks after he was appointed?

**Answer:**

Defense Threat Reduction Agency (DTRA) leadership requested him to withdraw from the review.

**Question:**

Was Dr. Nanos removed by you, or did he resign on his own initiative?

**Answer:**

DTRA leadership requested him to withdraw from the review.

<b>Question#:</b>	5
<b>Topic:</b>	Dr. Nanos
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:**

Please explain any potential conflict of interest that may have led to his resignation.

**Answer:**

There were not any potential conflicts of interest.

**Question:**

Please provide DTRA or Domestic Nuclear Detection Office (DNDO) correspondence, which discusses the termination of Dr. Nanos on this review.

**Answer:**

There is none.

**Question:**

How much did DNDO expend for the services of Dr. Nanos on this particular review?

**Answer:**

DNDO did not expend any resources for Dr. Nanos' service.

**Question:**

Has DTRA provided support services for the independent review? Is that support function still ongoing? Please provide a copy of this tasking order or interagency agreement.

**Answer:**

Yes, DTRA has and continues to provide support to the review. The Interagency Agreement is attached.

ACCEPTANCE OF MIPR					
1. TO (Requiring Activity Address) (Include ZIP Code) Department of Homeland Security, Chief Procurement Officer 245 Murray Lane, SW, Bldg. 410, Washington, DC 20528			2. MIPR NUMBER HSHQDC07X00788		3. AMENDMENT NO. Basic
			4. DATE (MIPR Signature Date) 27 Sept. 2007	5. AMOUNT (As Listed on the MIPR) \$75,000.00	
6. The MIPR identified above is accepted and the items requested will be provided as follows: (Check as Applicable)					
a. <input checked="" type="checkbox"/> ALL ITEMS WILL BE PROVIDED THROUGH REIMBURSEMENT (Category I) b. <input type="checkbox"/> ALL ITEMS WILL BE PROCURED BY THE DIRECT CITATION OF FUNDS (Category II) c. <input type="checkbox"/> ITEMS WILL BE PROVIDED BY BOTH CATEGORY I AND CATEGORY II AS INDICATED BELOW d. <input type="checkbox"/> THIS ACCEPTANCE, FOR CATEGORY I ITEMS, IS QUALIFIED BECAUSE OF ANTICIPATED CONTINGENCIES AS TO FINAL PRICE. CHANGES IN THIS ACCEPTANCE FIGURE WILL BE FURNISHED PERIODICALLY UPON DETERMINATION OF DEFINITIZED PRICES, BUT PRIOR TO SUBMISSION OF BILLINGS.					
7. <input type="checkbox"/> MIPR ITEM NUMBER(S) IDENTIFIED IN BLOCK 13. "REMARKS" IS NOT ACCEPTED (IS REJECTED) FOR THE REASONS INDICATED.					
8. TO BE PROVIDED THROUGH REIMBURSEMENT CATEGORY I			9. TO BE PROCURED BY DIRECT CITATION OF FUNDS CATEGORY II		
ITEM NO. <small>a</small>	QUANTITY <small>b</small>	ESTIMATED PRICE <small>c</small>	ITEM NO. <small>a</small>	QUANTITY <small>b</small>	ESTIMATED PRICE <small>c</small>
Basic		\$75,000.00			
d. TOTAL ESTIMATED PRICE		\$75,000.00	d. TOTAL ESTIMATED PRICE		
10. ANTICIPATED DATE OF OBLIGATION FOR CATEGORY I ITEMS			11. GRAND TOTAL ESTIMATED PRICE OF ALL ITEMS \$75,000.00		
12. FUNDS DATA (Check if Applicable)					
a. <input type="checkbox"/> ADDITIONAL FUNDS IN THE AMOUNT OF \$ _____ ARE REQUIRED (See Justification in Block 13) b. <input type="checkbox"/> FUNDS IN THE AMOUNT OF \$ _____ ARE NOT REQUIRED AND MAY BE WITHDRAWN					
13. REMARKS 7RD07XB000D2007RD0700203000ASPROSDASAMEMU20000000000 2531					
14. ACCEPTING ACTIVITY (Complete Address) Defense Threat Reduction Agency 8725 John J. Kingman Rd. MSC 6201 Fort Belvoir, VA 22060			15. TYPED NAME AND TITLE OF AUTHORIZED OFFICIAL Andrea S. Nwosime, Chief Managerial Accounting		
			16. SIGNATURE <i>Andrea S. Nwosime</i>	17. DATE 9/28/07	

TRPFR03 AS OF: 070928 17:07 CUSTOMER ORDER INPUT TRANS CODE: PR10  
SOURCE DOCUMENT ID: HSHQDC0700788 FY: 07 AMEND NR: 00  
ORDER DATE: 07 / 09 / 28 CUSTOMER ORDER AMOUNT: 75000.00  
AMEND DATE: 07 / 09 / 28 AMENDMENT AMOUNT: 75000.00  
FUND SOURCE: DHSC  
DOCUMENT TYPE: M NEW/ADJ AMOUNT: 75000.00  
RSC: 870  
BPN:

PAC	RCC	APE	DRC
RMC: B	R400	469D	R

..... NOTE: DATES ARE IN FORMAT OF YY/MM/DD.....

ENTER: INQUIRE CUSTOMER ORD/AMEND PF5: ORDER/CASE DESC. SCREEN  
PF1: CANCEL INPUT PF6: ADD AMENDMENT  
PF2: ADD INITIAL CUSTOMER ORDER PF8: RETURN TO CALLING PROGRAM  
PF3: CHANGE

MESSAGE: 043 RECORD ADDED SUCCESSFULLY

TRPFR04 AS OF: 070928 17:14 CUSTOMER ORDER DESCRIPTION TRANS CODE: FR09  
 SOURCE DOC ID: HSHQDC0700788 AMENDMENT NR: 00  
 RMC: B469DRR400 AMOUNT: 75000.00 ORDER DATE: 07 / 09 / 28  
 CUSTOMER NAME: DEPT. OF HOMELAND SECURITY D A T E S  
 PNT OF CONTACT: AURELIA BARFI BEGIN: / /  
 DEPT: 70 FY: 07 BASIC SYMBOL: 0010 LIMITATION: 0000 EXPIR: / /  
 OTHER DATA 1: 7RDO7XB000D2007RD0700203000ASPROSDASAMEM COMPL: / /  
 2: U20000000000 2531  
 3:  
 FSN: CROSS DISBURSE: N DNA WUM:  
 BILLING ADDR1: DEPT. HOMELAND SECURITY ORD STAT:  
 2: CHIEF PROCUREMENT OFFICER CASE LN#:  
 3: 245 MURRAY LANE, SW, BLDG. 410 PROG CD#:  
 4: WASHINGTON, DC 20528  
 5:  
 FROM ADDR 1:  
 2:  
 3:  
 4:  
 PF3: PROCESS DESCR. INFO PF7: RETURN CUST/FMS/DARPA SCREEN  
 PF6: TRANSFER TO SYSTEM MAINTENANCE PF8: RETURN TO FUNDING MASTER MENU  
 MESSAGE: 044 RECORD CHANGED SUCCESSFULLY

INTERAGENCY AGREEMENT		1. AWARD NO.	2. PRICE		
		HSHQOC-07-X-00788	1	1	
7. ORDER NO.		3. REQUESTION NO.	4. SOLICITATION NO.		
		RUPC-07-00087			
5. EFFECTIVE DATE		6. AWARD DATE	7. PERIOD OF PERFORMANCE		
09/25/2007		09/25/2007	09/10/2007 TO 12/09/2007		
8. ORDERING AGENCY		9. DELIVER TO			
DEFENSE THREAT REDUCTION AGENCY ALC: DUNS: 106646503 ++: 0000 8725 JOHN J KINGMAN RD STOP 6201 FORT BELVOIR VA 220606201  POC: Rebecca Cobb TELEPHONE NO: 703-767-2869		Department of Home. Security Chief Procurement Officer Attn: Page Glennie 245 Murray Lane, SW, Bldg 410 Washington DC 20528			
10. ORDERING AGENCY		11. WORKS OFFICE			
Department of Homeland Security-OPO ALC: 7003-1512 DUNS: 052368391 ++: 0000 Department of Homeland Security Chief Procurement Officer 245 Murray Lane, SW, Bldg 410 Washington DC 20528  POC: Page Glennie TELEPHONE NO: 202-447-5492		DUNO Coast Guard Finance Center DUNO Invoices PO Box 4141 Chesapeake VA 23327			
12. ISSUING OFFICE		13. REGULATIVE AUTHORITY			
Department of Homeland Security Office of Procurement Operations Departmental Operations Division Room 1523-10, Attn: Paula Nussbaum 245 Murray Lane, SW, Bldg 410 Washington DC 20528		Economy Act, 31 U.S.C. 15.			
14. PROJECT ID		15. PROJECT TITLE			
16. ACCOUNTING DATA					
7RDQ7XB000D2007RD0700203000ASPROSDASAMEMU2000000000000000 2531					
17. ITEM NO.	18. SUPPLIES/SERVICES	19. QUANTITY	20. UNIT	21. UNIT PRICE	22. AMOUNT
0001	Tax ID Number: 52-1700691  ASP Independent Review Contracting Fee: 0  Attached are the following documents: DHS Inter/Intra Agency Agreement Terms and Conditions, DHS HSAR Clauses, Statement of Work, and Terms of Reference.  The total amount of award: \$75,000.00. The obligation for this award is shown in box 24.				75,000.00
23. PAYMENT INSTRUCTIONS		24. TOTAL AMOUNT			
		\$75,000.00			
25. SIGNATURE OF GOVERNMENT REPRESENTATIVE (SERVICES)		26. SIGNATURE OF GOVERNMENT REPRESENTATIVE (SUPPLIES)			
		[Signature]			
27. NAME AND TITLE		28. DATE	29. CONTRACTING OFFICER		
			[Signature] Victoria D. Short		
			30. DATE		
			6/25/07		

**INTER/INTRA AGENCY AGREEMENT TERMS AND CONDITIONS**

**1. General**

The Payable Interagency Agreement (IA) Form, these Terms and Conditions, the Statement of Work (SOW), and any attachments constitute a Payable IA between the requesting agency, the Department of Homeland Security, and the servicing agency, the Defense Threat Reduction Agency (DTRA). This agreement shall be effective on the date of the final signature by authorized officials of both agencies, and shall remain in effect for the period(s) stated on the form, or until terminated in accordance with Cancellation/Termination provision of this document.

**2. Definitions**

COTR/POC: the requesting agency's Contracting Officer's Technical Representative/Point of Contact.

Requesting Agency: the Department of Homeland Security, or any duly authorized representative.

Servicing Agency: the federal agency or DHS Agency that is performing services or providing goods under this agreement named in 1 above, or any duly authorized representative.

**3. Competition Requirements for the Servicing Agency**

All acquisitions awarded by the servicing agency in performance of this Payable IA shall comply with the Competition in Contracting Act (CICA), Public Law 98-369.

**4. Funding and Reimbursement**

The servicing agency is limited to recovery of actual costs only. The servicing agency shall notify the requesting agency's COTR/POC in writing when the costs incurred and outstanding commitments equal 80% percent of the estimated total costs.

The servicing agency shall make no other commitments or expenditures beyond 100% of funds obligated and shall be excused from further performance of the work unless and until the requesting agency's Contracting Officer (CO), or other authorized official, increases the total obligation under this agreement by modification.

Special Terms for One-year Funding:

The total amount to be reimbursed shall not exceed the total amount obligated for the current fiscal year. If this agreement is issued under the authority of the Economy Act (31 U.S.C. 1535 and 1536) and the servicing agency uses in-house resources to perform part or all of the agreement, work must stop on September 30<sup>th</sup> of the current fiscal year and any unexpended funds must be de-obligated. In-house work to continue in the next fiscal year must be funded effective October 1<sup>st</sup> with the new fiscal year's funds. If the servicing agency obligates the annualized funds by awarding a contract or delivery/task order prior to the expiration of the fiscal year, the funds will be protected and do not need to be de-obligated after September 30.

Special Terms for Greater Than One-year Funding:

For longer than one-year (e.g., two-year, no-year) funding availability, the dates are extended appropriately.

#### **5. Billing Instructions/Support Documentation for Expenditures**

Billing and reimbursement may be handled through the Intra-governmental Payment and Collection (IPAC) system, or the servicing agency may submit invoices when the work is completed or as otherwise authorized. The Payable IA number, the Agency Locator Codes, appropriate accounting code(s), and associated dollar amounts must be referenced on all IPAC transactions or invoices.

If IPAC is used, the servicing agency shall provide documentation supporting all charges to the requesting agency's COTR/POC. In the event that advance payment is requested and authorized, the servicing agency shall furnish expenditure reports to the COTR/POC on a monthly basis.

If invoices are used, the invoices, along with supporting documentation, shall be submitted to the requesting agency's payment office as shown on the Payable IA form, with a copy furnished to the COTR/POC. Per the Economy Act and Federal Acquisition Regulation 17.505, bills or requests for advance payment will not be subject to audit or certification in advance of payment.

Both agencies agree to promptly discuss and resolve issues and questions regarding payments. The servicing agency will promptly initiate year-end and closeout adjustments once final costs are known.

#### **6. Travel**

All travel under this Payable IA shall be in accordance with the Federal Travel Regulations.

#### **7. Prompt Payment**

The servicing agency shall not assess the requesting agency for any prompt payment interest charged to the servicing agency.

#### **8. Modifications**

When appropriate, a unilateral administrative modification will be issued by the requesting agency, e.g., to add funds with no change to the SOW, to change a COTR/POC name. A written bilateral modification (i.e., agreed to and signed by authorized officials of both parties) will be issued to change the Payable IA, modify the SOW, etc.

#### **9. Program Office/COTR Responsibilities**

The requesting agency COTR/POC and the servicing agency program office shall be responsible for technical oversight of the specified product or service, as set forth in the SOW of this agreement. In carrying out these responsibilities, they will operate within the scope of applicable regulations, specifically delegated authorities, and the program authorities and funding limitations of the Payable IA. The COTR/POC has no authority to make changes to the terms of the Payable IA.

#### **10. Property**

Non-expendable property purchased from funds supplied under this agreement shall become an asset of the requesting agency unless otherwise agreed to in writing by both agencies. Purchase of equipment required for performance of the work must be authorized under this Payable IA.

**11. Third Party Liability**

With respect to third-party liability for acts arising out of the performance of official duty by a government employee of the servicing agency, the servicing agency undertakes responsibilities for the investigation, adjudication, settlement, and payment of any claim asserted against the United States; except that, in all cases, the responsibility for the investigation, adjudication, settlement, and payment of any claim with respect to third-party liability arising out of the use, damage, or destruction of loaned personal property shall be the responsibility of the particular agency that has custody and control of the said personal property. In addition, the servicing agency representative shall have the duty of investigating and reporting, in accordance with the servicing agency's regulations and policies, incidents occurring on, or involving that servicing agency's real property, and the requesting agency agrees to cooperate fully in such investigations.

**12. Disputes**

Nothing in this agreement is intended to conflict with current requesting agency directives. However, should disagreement arise as to the interpretation of the provisions of this agreement that cannot be resolved between the servicing agency program office and the requesting agency COTR/POC, the area(s) of disagreement will be reduced to writing by each agency and presented to the authorized officials at both agencies for resolution. If settlement cannot be reached at this level, the disagreement will be raised to next level in accordance with servicing agency and requesting agency procedures for final resolution.

**13. Cancellation/Termination**

This agreement is subject to cancellation or termination, with at least 60 calendar days (unless the Statement of Work specifies a different period) advance written notice by either party. The servicing agency shall be reimbursed for the cost of all completed and partially completed work (up to the Payable IA ceiling) as of the effective date of cancellation.

**14. Project Completion and Closeout**

When the requesting agency has accepted all deliverables related to the SOW, the servicing agency will provide a written project evaluation and final accounting of project costs to the requesting agency CO. The servicing agency account will then be closed and any remaining funds will be returned to the requesting agency immediately. After final accounting, the remaining balance in the project account will be de-obligated by Payable IA modification.

**15. Accessibility of Electronic and Information Technology**

Each Electronic and Information Technology (EIT) product or service furnished under this agreement shall comply with the Electronic and Information Technology Accessibility Standards (36 CFR 1194), which implements section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794d).

**Department of Homeland Security  
HSAR Clauses**

**HSAR 3052.204-71 Contractor Employee Access (Jun 2006)**

(a) *Sensitive Information*, as used in this Chapter, means any information, the loss, misuse, disclosure, or unauthorized access to or modification of which could adversely affect the national or homeland security interest, or the conduct of Federal programs, or the privacy to which individuals are entitled under section 552a of title 5, United States Code (the Privacy Act), but which has not been specifically authorized under criteria established by an Executive Order or an Act of Congress to be kept secret in the interest of national defense, homeland security or foreign policy. This definition includes the following categories of information:

(1) Protected Critical Infrastructure Information (PCI) as set out in the Critical Infrastructure Information Act of 2002 (Title II, Subtitle B, of the Homeland Security Act, Public Law 107-296, 196 Stat. 2135), as amended, the implementing regulations thereto (Title 6, Code of Federal Regulations, Part 29) as amended, the applicable PCI Procedures Manual, as amended, and any supplementary guidance officially communicated by an authorized official of the Department of Homeland Security (including the PCI Program Manager or his/her designee);

(2) Sensitive Security Information (SSI), as defined in Title 49, Code of Federal Regulations, Part 1520, as amended, "Policies and Procedures of Safeguarding and Control of SSI," as amended, and any supplementary guidance officially communicated by an authorized official of the Department of Homeland Security (including the Assistant Secretary for the Transportation Security Administration or his/her designee);

(3) Information designated as "For Official Use Only," which is unclassified information of a sensitive nature and the unauthorized disclosure of which could adversely impact a person's privacy or welfare, the conduct of Federal programs, or other programs or operations essential to the national or homeland security interest; and

(4) Any information that is designated "sensitive" or subject to other controls, safeguards or protections in accordance with subsequently adopted homeland security information handling procedures.

(b) "Information Technology Resources" include, but are not limited to, computer equipment, networking equipment, telecommunications equipment, cabling, network drives, computer drives, network software, computer software, software programs, intranet sites, and internet sites.

(c) Contractor employees working on this contract must complete such forms as may be necessary for security or other reasons, including the conduct of background investigations to determine suitability. Completed forms shall be submitted as directed by the Contracting Officer. Upon the Contracting Officer's request, the Contractor's employees shall be fingerprinted, or subject to other investigations as required. All contractor employees requiring recurring access to Government facilities or access to sensitive information or IT resources are required to have a favorably adjudicated

background investigation prior to commencing work on this contract unless this requirement is waived under Departmental procedures.

(d) The Contracting Officer may require the contractor to prohibit individuals from working on the contract if the government deems their initial or continued employment contrary to the public interest for any reason, including, but not limited to, carelessness, insubordination, incompetence, or security concerns.

(e) Work under this contract may involve access to sensitive information. Therefore, the Contractor shall not disclose, orally or in writing, any sensitive information to any person unless authorized in writing by the Contracting Officer. For those contractor employees authorized access to sensitive information, the contractor shall ensure that these persons receive training concerning the protection and disclosure of sensitive information both during and after contract performance.

(f) The Contractor shall include the substance of this clause in all subcontracts at any tier where the subcontractor may have access to Government facilities, sensitive information, or resources.

(End of Clause)

**HSAR 3052.209-70 Prohibition on Contracts with Corporate Expatriates (Jun 2006)**

(a) Prohibitions.

Section 835 of the Homeland Security Act, 6 U.S.C. 395, prohibits the Department of Homeland Security from entering into any contract with a foreign incorporated entity which is treated as an inverted domestic corporation as defined in this clause, or with any subsidiary of such an entity. The Secretary shall waive the prohibition with respect to any specific contract if the Secretary determines that the waiver is required in the interest of national security.

(b) Definitions. As used in this clause:

*Expanded Affiliated Group* means an affiliated group as defined in section 1504(a) of the Internal Revenue Code of 1986 (without regard to section 1504(b) of such Code), except that section 1504 of such Code shall be applied by substituting "more than 50 percent" for "at least 80 percent" each place it appears.

*Foreign Incorporated Entity* means any entity which is, or but for subsection (b) of section 835 of the Homeland Security Act, 6 U.S.C. 395, would be, treated as a foreign corporation for purposes of the Internal Revenue Code of 1986.

*Inverted Domestic Corporation.* A foreign incorporated entity shall be treated as an inverted domestic corporation if, pursuant to a plan (or a series of related transactions)—

(1) The entity completes the direct or indirect acquisition of substantially all of the properties held directly or indirectly by a domestic corporation or substantially all of the properties constituting a trade or business of a domestic partnership;

(2) After the acquisition at least 80 percent of the stock (by vote or value) of the entity is

held

(i) In the case of an acquisition with respect to a domestic corporation, by former shareholders of the domestic corporation by reason of holding stock in the domestic corporation; or

(ii) In the case of an acquisition with respect to a domestic partnership, by former partners of the domestic partnership by reason of holding a capital or profits interest in the domestic partnership; and

(3) The expanded affiliated group which after the acquisition includes the entity does not have substantial business activities in the foreign country in which or under the law of which the entity is created or organized when compared to the total business activities of such expanded affiliated group.

*Person, domestic, and foreign* have the meanings given such terms by paragraphs (1), (4), and (5) of section 7701(a) of the Internal Revenue Code of 1986, respectively.

(c) *Special rules.* The following definitions and special rules shall apply when determining whether a foreign incorporated entity should be treated as an inverted domestic corporation.

(1) *Certain Stock Disregarded.* For the purpose of treating a foreign incorporated entity as an inverted domestic corporation these shall not be taken into account in determining ownership:

(i) Stock held by members of the expanded affiliated group which includes the foreign incorporated entity; or

(ii) stock of such entity which is sold in a public offering related to the acquisition described in subsection (b)(1) of Section 835 of the Homeland Security Act, 6 U.S.C. 395(b)(1).

(2) *Plan Deemed In Certain Cases.* If a foreign incorporated entity acquires directly or indirectly substantially all of the properties of a domestic corporation or partnership during the 4-year period beginning on the date which is 2 years before the ownership requirements of subsection (b)(2) are met, such actions shall be treated as pursuant to a plan.

(3) *Certain Transfers Disregarded.* The transfer of properties or liabilities (including by contribution or distribution) shall be disregarded if such transfers are part of a plan a principal purpose of which is to avoid the purposes of this section.

(d) *Special Rule for Related Partnerships.* For purposes of applying section 835(b) of the Homeland Security Act, 6 U.S.C. 395(b) to the acquisition of a domestic partnership, except as provided in regulations, all domestic partnerships which are under common control (within the meaning of section 482 of the Internal Revenue Code of 1986) shall be treated as a partnership.

(e) *Treatment of Certain Rights.*

(1) Certain rights shall be treated as stocks to the extent necessary to reflect the present value of all equitable interests incident to the transaction, as follows:

- (i) warrants;
- (ii) options;
- (iii) contracts to acquire stock;
- (iv) convertible debt instruments; and
- (v) others similar interests.

(2) Rights labeled as stocks shall not be treated as stocks whenever it is deemed appropriate to do so to reflect the present value of the transaction or to disregard transactions whose recognition would defeat the purpose of Section 835.

(f) *Disclosure.* The offeror under this solicitation represents that [Check one]:

it is not a foreign incorporated entity that should be treated as an inverted domestic corporation pursuant to the criteria of (HSAR) 48 CFR 3009.104-70 through 3009.104-73;

it is a foreign incorporated entity that should be treated as an inverted domestic corporation pursuant to the criteria of (HSAR) 48 CFR 3009.104-70 through 3009.104-73, but it has submitted a request for waiver pursuant to 3009.104-74, which has not been denied; or

it is a foreign incorporated entity that should be treated as an inverted domestic corporation pursuant to the criteria of (HSAR) 48 CFR 3009.104-70 through 3009.104-73, but it plans to submit a request for waiver pursuant to 3009.104-74.

(g) A copy of the approved waiver, if a waiver has already been granted, or the waiver request, if a waiver has been applied for, shall be attached to the bid or proposal.

(End of Provision)

**3052.209-72 Organizational Conflict of Interest (Jun 2006)**

(a) Determination. The Government has determined that this effort may result in an actual or potential conflict of interest, or may provide one or more offerors with the potential to attain an unfair competitive advantage. The nature of the conflict of interest and the limitation on future contracting ["contracting officer shall insert description here"]

(b) If any such conflict of interest is found to exist, the Contracting Officer may (1) disqualify the offeror, or (2) determine that it is otherwise in the best interest of the United States to contract with the offeror and include the appropriate provisions to avoid, neutralize, mitigate, or waive such conflict in the contract awarded. After discussion with the offeror, the Contracting Officer may determine that the actual conflict cannot be avoided, neutralized, mitigated or otherwise resolved to the satisfaction of the Government, and the offeror may be found ineligible for award.

(c) Disclosure. The offeror hereby represents, to the best of its knowledge that:

(1) It is not aware of any facts which create any actual or potential organizational conflicts of interest relating to the award of this contract, or

\_\_\_\_ (2) It has included information in its proposal, providing all current information bearing on the existence of any actual or potential organizational conflicts of interest, and has included a mitigation plan in accordance with paragraph (d) of this provision.

(d) Mitigation. If an offeror with a potential or actual conflict of interest or unfair competitive advantage believes the conflict can be avoided, neutralized, or mitigated, the offeror shall submit a mitigation plan to the Government for review. Award of a contract where an actual or potential conflict of interest exists shall not occur before Government approval of the mitigation plan. If a mitigation plan is approved, the restrictions of this provision do not apply to the extent defined in the mitigation plan.

(e) Other Relevant Information: In addition to the mitigation plan, the Contracting Officer may require further relevant information from the offeror. The Contracting Officer will use all information submitted by the offeror, and any other relevant information known to DHS, to determine whether an award to the offeror may take place, and whether the mitigation plan adequately neutralizes or mitigates the conflict.

(f) Corporation Change. The successful offeror shall inform the Contracting Officer within thirty (30) calendar days of the effective date of any corporate mergers, acquisitions, and/or divestitures that may affect this provision.

(g) Flow-down. The contractor shall insert the substance of this clause in each first tier subcontract that exceeds the simplified acquisition threshold.

(End of Provision)

**INTER/INTRA AGENCY REIMBURSABLE AGREEMENT  
REVIEW OF THE  
DOMESTIC NUCLEAR DETECTION OFFICE (DNDO)  
ADVANCED SPECTROSCOPIC PORTAL (ASP) PROGRAM**

**Background**

The Department of Homeland Security (DHS) Chief Procurement Office (CPO) examines a variety of issues of strategic importance to the Department to include independent assessments of the Department acquisition programs performance and overall health. The CPO conducts independent reviews to examine and determine whether an acquisition program is operating effectively to deliver on its commitments by focusing on high risk, high cost areas of development or on specific areas of interest to DHS leadership. Independent reviews determine if a program is appropriately managed, defined, documented, and executed to obtain the approved cost, schedule, and performance requirements. An independent review is a multifaceted/multidisciplinary analysis that addresses all aspects of an acquisition program, identifies problem areas, and provides actionable corrective recommendations.

The terms of reference for the Advanced Spectroscopic Portal (ASP) program independent review are enclosed.

**Statement of Work:**

The Defense Threat Reduction Agency (DTRA) will provide support the independent review of the ASP program as follows:

1. Perform analysis on Advanced Spectroscopic Portal (ASP) documentation (to include but not be limited to test plans, testing data, and test reports; ASP Performance Specification; other documentation as pertinent).
2. Analyze briefings and material provided by organizations involved in the ASP program, to include but not be limited to Domestic Nuclear Detection Office (DNDO); Customs and Border Patrol (CBP); and contractors involved in the ASP program.
3. Conduct visits to, and gather information from, sites involved in the ASP program, to include but not be limited to Ports of Entry (POE) involved in the ASP Field Validation effort.
4. Provide nuclear weapon material detection and security subject matter experience at the domestic and international levels.
5. Provide technical and administrative support the ASP Group Co-Chairs in the development of the deliverables (briefing and report).

**Deliverables:**

The review report and briefings documenting the review team, time and place of the review, all findings, major issues, and actionable recommendations. All documentation shall acknowledge that is produced from DHS funding: "The U.S. Department of Homeland Security (DHS) is acknowledged as the sponsor of this work." All documentation shall be marked "Pre-Decisional for Official Use Only."

**Organizational Conflict of Interest:**

Distribution is authorized to U.S. government agencies only. Contains information that may be exempt from public release under the Freedom of Information Act. Before this SOW is released to the public, approval is required by the Department of Homeland Security Directorate of Science and Technology.

All participants engaged in the independent assessment of the ASP Program will be required to sign non-disclosure and conflict of interest agreements prior to beginning this review. Additionally, all participants must possess the requisite technical qualifications to perform the functions as set forth in the attached Statement of Work and Terms of Reference.

**Security Requirements:**

All unclassified "Official Use Only" work is expected to occur at the "medium" level per the NIST 800-60 (FIPS Security Categorization) and the Federal Information Security Management Act (FISMA). Any work at the "high" For Official Use Only level per the FISMA, or any work at the classified level, shall be performed on a stand-alone computer system accredited in accordance with the FISMA and applicable DHS policies. If classified work is required under this SOW, DHS will provide specific guidance to Homeland Security Institute (HSI) as to which work will be conducted in a classified manner and at which classification level.

**Points of Contact**

DHS Technical POC:  
W. Page Glennie  
OCPO  
202-447-5492  
[page.glennie@dhs.gov](mailto:page.glennie@dhs.gov)

DHS Financial POC:  
Pat Wallis  
OCPO  
202-447-5303  
[pat.wallis@dhs.gov](mailto:pat.wallis@dhs.gov)

Terms of Reference  
Advanced Spectroscopic Portal (ASP) Independent Review

**1. Background**

- The Radiation Portal Monitor (RPM) Project was established in January 2002 to design, acquire, deploy, maintain and operate RPM Systems at the U.S. Customs and Border Protection (CBP) ports of entry (POEs).
- The Domestic Nuclear Detection Office (DNDO) in coordination with CBP is deploying systems at:
  - International Mail and Express Consignment Courier Facilities (ECCF)
  - Seaport Terminals
  - International Airports
  - Land Crossings
  - Rail Crossings
- The program goal is to screen 100 percent of the cargo and privately owned vehicles entering the U.S. while minimizing the impact to legitimate commerce.
- These advanced systems are not only meant to provide enhanced detection capabilities, but also to improve the efficiency of the scanning process
- The ASP program is designed to automatically distinguish between naturally occurring radioactive material and dangerous nuclear material that actually poses a threat.
- The ASP is needed to improve the radiation detection performance of the first generation RPMs.

**2. Status**

- First generation Polyvinyl Toluene (PVT) systems started to be deployed in March 2003. The need for the second generation, Advanced Spectroscopic Portal became apparent due to the large burden on the port secondary screening process and perceived inadequacies in the systems. This led to a development effort that proceeded through engineering development, Low Rate Initial Production (LRIP), field testing and initial deployment of two vendor's ASPs.
- The FY07 Homeland Security appropriation states that:
  - "None of the funds appropriated under this heading shall be obligated for full scale procurement of Advanced Spectroscopic Portal Monitors until the Secretary of Homeland Security has certified through a report to the Committees on Appropriations of the Senate and the House of

Representatives that a significant increase in operational effectiveness will be achieved.”

- This certification is referred to in the context of DHS Management Directive 1400 as a Key Decision Point Three (KDP-3) decision, which is a decision to proceed into full rate production.

### **3. Purpose and Scope of the Review**

- The purpose of the review is to provide the Secretary of Homeland Security an independent assessment of the demonstrated performance of the ASP as one additional input to the decision making process that will ultimately lead to the required congressional certification and procure production decision.
- The Independent Team shall review the following:
  - ASP Performance Specifications.
  - Defined Critical Operational Issues (COIs), Technical Objectives and Measures of Effectiveness.
  - ASP contractor testing; Nevada test site production testing, operational testing at New York Container Terminal, deployment readiness testing at Pacific Northwest National Laboratory, and field validation testing at Ports of entry.
  - The developed Cost Benefit Analysis (CBA) which will evaluate the probability of success to detect and identify radiation and nuclear threats and an assessment of the performance of the ASP compared to the performance of the first generation systems.
- Make an assessment of the testing approach, from contractor testing through operational testing, processes employed, specifications, test procedures, and analysis methods.
- Evaluate the probability of success to detect and identify radiation and nuclear threats and assess the performance of the ASP compared to the performance of the first generation systems.
- Prepare a report of findings and recommendations.

### **4. DHS Interfaces**

- The Under Secretary for Management is the sponsor of this study and will provide overall and direction for the effort. He will provide supplemental subject matter expertise as requested by the Team Leader.
- Domestic Nuclear Detection Office and Customs and Border Protection liaison is Julian Hill, the lead systems engineer, (o) 202-254-7440, (c) 202-746-0396.

**4. End Product**

- A written report and a briefing to DHS leadership

**5. Schedule**

- Report is to be submitted by September 17, 2007.

**Statement of Work (SOW)  
for DTRA Support to the Advanced Spectroscopic Portal (ASP)  
Independent Review Team (IRT) Effort**

Assist the Co-Chairs of the ASP-IRT by performing the following tasks:

Task 1. Perform analysis on Advanced Spectroscopic Portal (ASP) documentation (to include but not be limited to test plans, testing data, and test reports; ASP Performance Specification; other documentation as pertinent)

Task 2. Analyze briefings and material provided by organizations involved in the ASP program, to include but not be limited to Domestic Nuclear Detection Office (DNDO); Customs and Border Patrol (CBP); and contractors involved in the ASP program.

Task 3. Conducts visits to, and gather information from, sites involved in the ASP program, to include but not be limited to Ports of Entry (POE) involved in the ASP Field Validation effort

Task 4. Support the ASP Group Co-Chairs in the development of the deliverables (briefing and report).

<b>Question#:</b>	6
<b>Topic:</b>	John Higbee
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** On what date did you appoint John Higbee of the Defense Acquisition University to lead the review team? On what date was he terminated?

**Answer:**

Mr. Higbee was appointed during the week of August 20, 2007, and terminated during the week of September 14, 2007.

**Question:**

On what date did you learn that Mr. Higbee was interested in seeking a senior position at DHS?

**Answer:**

In early Summer of 2007 I learned that Mr. Higbee was interested in seeking a senior position at DHS.

**Question**

Did he discuss this with you at any point in time prior to the date he was appointed as the head of the independent review?

**Answer:**

Yes.

**Question:**

On what date did you learn Mr. Higbee might be offered a position at DHS?

**Answer:**

I learned that Mr. Higbee might be offered a position at DHS during the week of August 20, 2007 or very shortly before I learned that Mr. Higbee was a finalist for a position in DHS.

<b>Question#:</b>	7
<b>Topic:</b>	Mr. Higbee
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** What specific due diligence was performed before hiring Mr. Higbee to ensure he had no potential conflict of interest?

**Answer:**

Mr. Higbee is a government employee and was already performing work in support of DHS.

**Question:**

Which office within DHS is considering hiring Mr. Higbee?

**Answer:**

The Office of the Chief Procurement Officer is considering hiring Mr. Higbee.

**Question:**

Would that activity fall under your responsibility as Under Secretary?

**Answer:**

Yes.

<b>Question#:</b>	8
<b>Topic:</b>	conflict of interest
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** You testified that Mr. Higbee had no conflict of interest in performing work for DHS on this independent review, even though he was seeking employment from DHS at the same time.

**Answer:**

The position Mr. Higbee has accepted is to manage DHS acquisition oversight. The position specifically includes review all DHS acquisition programs, and a component of the job is to coordinate and oversee the Deep Dive process.

**Question:**

Please explain why this did not present an actual or appearance of conflict of interest?

**Answer:**

Mr. Higbee is a government employee. The position Mr. Higbee has accepted covers DHS headquarters non-advocate oversight of acquisition programs. A critical aspect of the position is to provide an unvarnished assessment. If he were to do otherwise (i.e., provide an assessment that was biased, massaged, incomplete, misleading, inaccurate, or "varnished" in any other way), he would be demonstrating his inability to serve in the position, and this would jeopardize his selection.

<b>Question#:</b>	9
<b>Topic:</b>	services
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** How much did DNDO expend on the services of Mr. Higbee for the independent review?

**Answer:**

DNDO did not expend any resources on the services of Mr. Higbee for the independent review. The Independent Review was arranged for and funded by the DHS Under Secretary for Management, without input or funds from DNDO.

<b>Question#:</b>	10
<b>Topic:</b>	HSI
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** Your testimony states that George Thompson, Deputy Director of the Homeland Security Institute (HSI) will replace Mr. Higbee as the chair of the independent review and you will be issuing a Task Order to fund this work. Further, you testified, "We worked with HSI in reviews of other DHS programs. And I was pleased—I've been pleased to date with the type of support we have got."

Please provide a list of the activities with which you have personally worked with HSI, and list those projects where you have been pleased with the work they have completed.

**Answer:**

I personally worked with the HSI on a recent SBInet program assessment. I witnessed first-hand the high quality of their work and was pleased with the technical and analytic support they provided. In addition, I carefully reviewed the HSI's most recent annual report to Congress and discussed their accomplishments and capabilities with the DHS Under Secretary for Science and Technology, RADM (ret) Jay Cohen, who is the Institute's Primary Sponsor.

**Question:**

Please provide the names of the two individuals who were provided by HSI as candidates to lead the independent review team?

**Answer:**

On September 13, 2007 the HSI Director, Dr. Phil Anderson, suggested two individuals as possible candidates for the role of ASP independent review chair: Dr. Robert August and Mr. George Thompson. We concluded that Mr. Thompson was the best choice and was well-qualified to lead this effort.

**Question:**

What due diligence have you conducted on HSI and the HSI operating contractor Analytical Services Inc. (ANSER) to ensure they are technically qualified to head up this particular review? What due diligence have you performed on HSI and ANSER to assess whether or not there are conflicts of interest?

<b>Question#:</b>	10
<b>Topic:</b>	HSI
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Answer:**

By way of clarification, the Homeland Security Institute (HSI) and ANSER are two separate business units operated by Analytic Services, Inc.

To supplement my own personal experience with the HSI and its capabilities (see above), I have performed additional due diligence.

Regarding the qualifications of the HSI, please refer to my letter of October 3, 2007: "we are using HSI in other areas to support individual programs, and they appear to be doing a good job." For example, from September 2005 through June 2007, HSI supported the Office of Program Analysis and Evaluation (PA&E) within the DHS Management Directorate. This support included assessments of DHS programs with respect to their compliance with applicable directives, soundness of business case analysis, completeness and accuracy of budget justifications, and documentation and reasonableness of costs. For the period September 2005 through April 2006, the DHS official responsible for overseeing HSI's performance on that task rated the quality of their work as Satisfactory with respect to all applicable evaluation criteria. For the most recent evaluation period, May 2006 through June 2007, their work was rated "Outstanding" with respect to nine of the eleven evaluation criteria and "Satisfactory" with respect to the other two.

Regarding conflict of interest, I again refer you to my letter of October 3, 2007: "HSI was established strictly in accordance with Federal Regulation Acquisition Regulation (FAR) Part 35, through a competitive award to [Analytic Services Inc.] in order to operate an FFRDC in the public interest... You should also be aware that HSI has a unique, Congressionally mandated charter as set forth in Section 312 of the Homeland Security Act of 2002. It is subject to Congressional oversight not typical of private sector companies, not-for-profit organizations or even other FFRDCs working in DHS. HSI has a statutory requirement to report their activities to Congress every year. HSI is also bound contractually to the Department to operate in a manner which ensures its objectivity and independence... HSI, like other FFRDCs, has sharp restrictions on its ability to obtain any commercial work and HSI's parent organization is similarly contractually prohibited from obtaining work which leverages activities which they perform in operating the FFRDC." This latter prohibition is specifically designed to ensure that there are no real or perceived conflicts of interest associated with the potential generation of work for the ANSER business unit as a result of HSI activities.

**Question:**

Are there any individuals employed at HSI or by ANSER who have any conflicts of interest with respect to this independent review?

<b>Question#:</b>	10
<b>Topic:</b>	HSI
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Answer:**

Analytic Services, Inc., ANSER, and HSI collectively employ approximately 600 staff. Each of them is required to complete annual training on ethics and proper business practices, and each signs an overarching employee disclosure and conflict of interest agreement. No attempt has been made to screen all 600 individuals for perceived or real conflict of interest with respect to this independent review, and it would be unwarranted to do so. Only selected individuals (see below) have access to the data collected and/or influence over the analysis products generated as a result of this effort. All those individuals are required to complete an additional Conflict of Interest (COI) certification and Non-Disclosure Agreement (NDA) specific to this independent COI/NDA form has been provided to the Committee.

**Question:**

Which HSI employees will be authorized to work on this independent review? Please provide their names and titles.

**Answer:**

The following HSI individuals are authorized to work on the review, in the specific capacities indicated:

**Analysis and Task Management:**

- Mr George Thompson; Deputy Director, HSI Plans and Programs (HSPP). Mr. Thompson is serving as chair of the independent review.
- Dr. Gerald Diaz; HSI Fellow. Dr. Diaz is the designated HSI task lead for the task order under which the work is being performed.

**Oversight and Management Review:**

- Mr. Shelby Syckes; Manager, HSPP Program Analysis Division. Mr. Syckes is the HSI manager with designated oversight responsibilities for all work that HSI performs under the aforementioned task order.
- Dr. Greg Swider; Research Director, HSI. Dr. Swider is responsible for the Institute's Quality Assurance program. He routinely reviews HSI products to ensure that they meet the Institute's standards of quality.
- Dr. Phil Anderson; Director, HSI. Dr. Anderson is responsible for ensuring that the HSI's work fulfills the Institute's mission and achieves its vision: providing high-quality, independent, and objective analysis that

<b>Question#:</b>	10
<b>Topic:</b>	HSI
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

helps decision makers address homeland security problems of significant complexity and importance.

In addition, the following ANSER individuals are authorized to work on the review under reach-back support procedures approved by DHS.

- Ms. Georganne John, Principal Analyst. Ms. John is providing technical and analysis support to the review team including information management, configuration control, and research support.
- Mr. Bruce Shelton, Senior Analyst. Mr. Shelton is providing systems engineering analysis support to the team.

All the above named individuals are required to execute COI/NDA forms. The report writing process also includes graphics and technical editing support. Individuals performing those services will be required to execute COI/NDA forms, since they will have access to the content of the report.

Finally, there are other HSI and Analytic Services, Inc. staff personnel providing support services such as contract administration, invoicing, and so on. Those individuals will not have access to the content of the report.

**Question:**

Please provide the name of the Federal official(s) who have vetted the members of the independent review team and the HSI staff for conflicts of interest. What specific conflict of interest criteria were used? How far back in time will you examine with respect to potential for conflicts of interest? Please provide the conflict of interest disclosure statements and any waivers.

**Answer:**

Federal officials do not vet HSI team members for COI<sup>1</sup>; that is an HSI function, per the terms of the Institute's Sponsoring Agreement. HSI is required by that agreement to execute overarching COI agreements for all its staff, subcontractors, and consultants, through processes approved by DHS. The criteria for the additional COI certifications specific to this independent review are contained in the COI/NDA form that has already been provided to the Committee. As the form indicates, the time frame for disclosure is an individual's entire professional career. Regarding financial interests, the form requires

<sup>1</sup> As part of the Sponsoring Agreement, DHS S&T approves the use of consultants and contractors. That review is focused on whether the consultants/subcontractors possess the requisite qualifications, whether the project is properly balanced between HSI employees and others, and whether the costs are reasonable.

<b>Question#:</b>	10
<b>Topic:</b>	HSI
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

disclosure of any current financial interest or connection, or any past relationship that included a continuing obligation of confidentiality or other responsibility to the entities. To preserve the essential character of HSI as an FFRDC which is objective and independent of direct government influence in the conduct of its analysis, we believe this is the best approach to ensure an absence of COI. Obviously, if DHS has evidence that a COI situation exists, it retains the contractual ability to hold HSI accountable.

**Question:**

What is the maximum value of this Task Order for this independent review?

**Answer:**

This task is being accomplished under HSI task number 07-37 titled, "DHS Office of Chief Procurement Officer (OCPO) Deep Dive Acquisition Program Assessment Reviews." Task number 07-37 is structured to accomplish many such reviews, of which the ASP independent review is only one. A copy of the task execution plan for task 07-37 has been provided to the Committee. The overall task is valued at approximately \$2.673 million. The ASP independent review is an effort of greater-than-average complexity; it is currently estimated at approximately \$425,000, although that number may change depending on requirements for follow-on analysis.

**Question:**

Who will do the actual drafting of the independent review report on ASP testing? Will it be George Thompson, or the subject matter experts who are on the review team? Will Ruth David, the director of ANSER, be permitted to review and comment on the independent review or will she be excluded from any participation in this review?

**Answer:**

The subject matter experts on the review team will draft individual report chapters and sections, as assigned by the chair. Mr. Thompson will also draft some chapters and sections. In addition, he will integrate the separate drafts to produce the final report. Before the report is delivered, it will be circulated among the members of the review team to ensure that they endorse any and all changes that have been made to their original submissions and that the report fully and fairly reflects their own assessment.

<b>Question#:</b>	10
<b>Topic:</b>	HSI
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

For clarification, Dr. Ruth David is not “the director of ANSER.” She is the President and Chief Executive Officer of Analytic Services, Inc. and Executive Advisor to the Homeland Security Institute. Dr. David will not be participating in the review of this report.

**Question:**

Will each independent review team member have the authority to withhold their approval of the final report if it does not fully and fairly capture their views? Will the final technical and editorial judgments be reserved to HSI staff? Will the report provide for differing professional opinions?

**Answer:**

As indicated above, we anticipate that the report will be a consensus product that reflects the views of all the team members; however, in the event that a consensus is not reached, dissenting views will be included as an Appendix.

<b>Question#:</b>	11
<b>Topic:</b>	HSI
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** Does HSI have any of its employees detailed or embedded in the Office of the Under Secretary for Management or in DNDO?

If individuals were embedded in DNDO, could this connectivity have any impact on HSI's independence?

Please explain.

**Answer:**

HSI has no employees detailed or embedded in the DNDO or in the office of the Under Secretary for Management.

<b>Question#:</b>	12
<b>Topic:</b>	directors
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** Are you aware that HSI has had four directors in the last 3 years?

**Answer:**

Yes. It is important to note that George Thompson, who was selected to lead the ASP assessment team, has been part of the senior leadership of HSI since its inception in 2004.

<b>Question#:</b>	13
<b>Topic:</b>	ANSER
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** Are you aware that the DHS contract with ANSER, the company running the Homeland Security Institute, expires in 2009, and a decision will be made by DHS in fiscal year (FY) 2008 on whether to recompute their contract?

**Answer:**

ANSER is not "the company running the Homeland Security Institute." DHS' contract is with Analytic Services, Inc., which operates two separate business units: ANSER and the Homeland Security Institute.

The question regarding the expiration of that contract was answered in a letter from Mr. Paul A. Schneider, then DHS Under Secretary for Management, addressed to the Chairman, dated October 3, 2007: "The base contract does in fact expire at the end of December 2008. The Department is currently conducting a comprehensive review in accordance with the FAR 35.017-4 pertaining to extension of the current Federally Funded Research and Development Center (FFRDC) contract. No decision has been made regarding future action in this regard."

**Question:**

Could ANSER's economic interest in avoiding a recompute affect their independence or otherwise affect their ability to give an unvarnished assessment?

**Answer:**

Presumably, the question refers to Analytic Services, Inc., which operates two separate business units: ANSER and the Homeland Security Institute.

In response to your question regarding any potential impact this contract extension could have on the ASP independent review, I would again reiterate my comments on the fundamental nature of FFRDCs and the fact the HSI was chartered by Congress to be an independent source of analysis for the Department.

In other words, the charter and mission statement require HSI to provide an unvarnished assessment. If the Institute were to do otherwise (i.e., provide an assessment that was biased, massaged, incomplete, misleading, inaccurate, or "varnished" in any other way) it would be failing to serve the purpose for which it was created, and this would actually jeopardize the economic interests of Analytic Services, Inc. with respect to a recompetition of the contract.

<b>Question#:</b>	14
<b>Topic:</b>	performance
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** Are you aware that the Senate Homeland Security Appropriations Act for FY 2008 has noted lackluster performance by HSI, cutting their core funding by 50 percent?

**Answer:**

DHS is familiar with the Senate Homeland Security Appropriations Committee language, per S.1644; however, that language does not note any lackluster performance by HSI. My research leads me to conclude that the Senate language was written before HSI's most recent annual report to Congress was delivered to key members and staff and this, does not appear to be based on up-to-date information. Furthermore, the Senate Appropriations Committee Professional Staff indicated to S&T Budget and finance officials that the primary reason for the cut (and this is reflected in the language in the Senate Report (110-84)) was that it believed HSI activities could be better funded through individual task orders with DHS customers versus a large core program. Also, the cuts to the HSI core program were rationalized as a "bill payer" for other very high priority programs such as Improvised Explosive Device (IED) detection. Many S&T programs sustained similar cuts. DHS has opposed the Senate cut and looks forward to progress on this particular issue when the Senate and House Appropriations Committees meet in conference to reconcile their versions of the Fiscal Year 08 Appropriations Act.

**Question:**

How confident are you that HSI is able to provide a high quality work product for DHS?

**Answer:**

The Federally Funded Research and Development Center (FFRDC) contract provisions of HSI were heavily modeled after those in use by the Department of Defense. In the administration of HSI, we instituted the concept of a core program to enable the FFRDC to hire the talent necessary to have a first-class analytic organization. We are using HSI in other areas to support individual programs, and they appear to be doing a good job. I would refer you to HSI's most recent annual report to Congress. It lays out in some detail their activities and contributions over the past year. Beyond their charter as an FFRDC,

<b>Question#:</b>	14
<b>Topic:</b>	performance
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

this is precisely the reason why I selected them to lead this investigation into the ASP program.

**Question:**

Given the connectivity between HSI and DHS, is it fair to say that HSI meets the test for full independence?

**Answer:**

HSI was established strictly in accordance with Federal Regulation Acquisition Regulation (FAR) Part 35 through a competitive award to ANSER Corporation in order to operate an FFRDC in the public interest. This would help satisfy DHS' long-term research and development needs as well as transition those research findings into Departmental Programs. You should also be aware that HSI has a unique, Congressionally mandated charter as set forth in Section 312 of the Homeland Security Act of 2002. It is subject to Congressional oversight not typical of private sector companies, not-for-profit organizations or even other FFRDCs working in DHS. HSI has a statutory requirement to report their activities to Congress every year. HSI is also bound contractually to the Department to operate in a manner which ensures its objectivity and independence. It is also important to note that FFRDCs came into being to provide support that is not readily available in the sponsoring agency or the private sector. FFRDCs by definition produce independent analysis not biased to favor commercial interests or to endorse the position of a client. HSI is the DHS' single FFRDC focused solely on providing analytic support to all DHS Components in support of the broader homeland security mission. Congress envisioned that HSI would provide long-term strategic support the DHS. HSI, like other FFRDCs, has sharp restrictions on its ability to obtain any commercial work and HSI's parent organization is similarly contractually prohibited from obtaining work which leverages activities which they perform in operating the FFRDC.

<b>Question#:</b>	15
<b>Topic:</b>	protocol
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** Is there a protocol for the work carried out by the independent review team?

**Answer:**

If “protocol” refers to the technical analysis approach, that approach will be documented in the assessment report prepared by the IRT.

If “protocol” refers to the procedures governing selection of team members, handling of data, and so forth, the following is applicable:

The ASP-IRT study chair is responsible for the selecting the team members and ensuring their independence and freedom from conflict of interest (COI). All team members are required to submit COI certifications and non-disclosure agreements (NDAs); copies of these forms have already been provided to the Committee.

The initial draft of the assessment report will undergo technical, editorial, and management review. Technical review addresses completeness, accuracy and clarity. Editorial review addresses grammar, usage, and style. Management review fulfills HSI contractual obligations to ensure that all work performed under its contract with DHS meets the Institute’s standards of quality. All changes suggested by technical, editorial, and management reviewers are accepted or rejected at the discretion of the ASP-IRT chair. All reviewers are required to submit COI certifications and NDAs.

All ASP-IRT data/information requests are coordinated through the IRT chair. DNDO and CBP have identified points of contact for this purpose. All documents and other data provided to the IRT are subject to the distribution and handling restrictions implied by document markings (e.g., Pre-Decisional Draft Working Papers – Business Sensitive – For Official Use Only) or imposed by the providing organization. The team is conducting its work in accordance with applicable DOE and DHS security classification guidance.

ASP-IRT interactions with the DHS Management Directorate are for the purpose of providing periodic updates on actual and planned activity, as well as for communicating general progress toward meeting the team’s goals.

Please provide a copy of the protocol.

<b>Question#:</b>	15
<b>Topic:</b>	protocol
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Answer:**

There is no documented protocol outside of those requirements of the task order previously provided.

<b>Question#:</b>	16
<b>Topic:</b>	independent review
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** What specific data sets will the independent review team examine?

Please indicate whether this will include:

Phase 1 data and test plan

Phase 3 data and test plan

Special test (red team) and test plan

**Answer:**

The Independent Review Team (IRT) has examined the following:

- o The ASP Performance Specification
- o Test Plans (NTS Phase I and Phase III, NYCT, and Integration tests)
- o Analysis Plans (NTS Phase I, NYCT tests)
- o Test Reports (NTS Phase I, NYCT, and Contractor Verification tests)
- o Data Assessment Reports (Field Validation tests)
- o Subsets of raw NTS Phase I and Field Validation test data
- o Various briefings and spreadsheets provided by DNDO and PNNL
- o Briefings from Raytheon, Thermo-Fisher, and Canberra describing each of their ASP systems
- o Open-source information and technical reports on such topics as nuclear smuggling, nuclear detection, energy windowing, injection testing, and the performance of first-generation systems.

In early November, the IRT received and began examining the following:

- o Additional Test Reports (Integration and Field Validation tests)
- o Additional raw NTS Phase I test data, including measured spectra
- o Additional raw data from the NYCT tests
- o Additional technical reports from PNNL
- o The National Radiation Portal Monitoring Directive

**Answer:**

The IRT is not aware of any existing data sets reporting the results of injection studies, nor is the IRT aware of the existence of a documented injection study plan. The IRT has

<b>Question#:</b>	16
<b>Topic:</b>	independent review
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

discussed the topic of injection studies with DNDO to determine what their approach would likely entail.

**Question:**

Does this independent review panel have the independence to withhold a recommendation until the injection studies have been completed and submitted to the panel for their review?

**Answer:**

DNDO estimates that a program of injection studies will take approximately one year to complete. As a matter of good investment management and oversight, we have asked the IRT to provide an assessment now, based on the information that is available. We expect that assessment will indicate clearly the information on which it was based, along with any associated limitations or caveats that may apply. The IRT has complete independence with respect to the scope of any conclusions it may draw.

<b>Question#:</b>	17
<b>Topic:</b>	ASPs
<b>Hearing:</b>	Nuclear Terrorism Prevention; Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** Even though the detection limits of the ASPs are not known at this time, DNDO says they do not need the results of the injection studies to proceed with a recommendation for certification. Do you agree? Should the recommendation for certification to the Secretary wait until the injection studies are completed?

**Answer:**

Since the date of this question, the change in program schedule makes this issue overtaken by events.

<b>Question#:</b>	18
<b>Topic:</b>	certification
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** DNDO says it plans to use the Phase 3 test data in support of certification; however, the test plan says that Phase 3 studies were not designed for a Key Decision Point-3 decision in support of full-scale production. Further, the Phase 3 test plan says the sample sizes are not large enough to provide a high confidence level regarding probability of detection.

Given these limitations, is it your view that DNDO should be using Phase 3 studies in support of certification?

**Answer:**

Yes. Even though the Phase 3 test was not originally planned to support "Certification," data collected from this test event provides information that may be relevant to the performance differences between the current Rad/Nuc interdiction system and the proposed ASP systems. It is prudent for the Secretary to consider all potentially relevant information in making his "Certification" decision.

<b>Question#:</b>	19
<b>Topic:</b>	GAO
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:** William R. Knocke, spokesman for DHS, wrote an e-mail to a reporter at the Washington Post, which was included in an August 16, 2006 article. It states:

“There is ample reason to be concerned that the GAO lacks the critical experience and expertise necessary for a project of this magnitude. We want to involve the very best experts in the field...that is why the department has asked the Defense Threat Reduction Agency for an independent review of the Advanced Spectroscopic Portal System.”

Is Mr. Knocke authorized to speak for DHS?

**Answer:**

Yes.

**Question:**

Did you review this quote before it was issued? If not, who drafted and approved this quote?

**Answer:**

No. As the Department’s press secretary and spokesman, Mr. Knocke is expected to respond to media queries on behalf of the department based on information he has available.

**Question:**

Is it your view that GAO is unqualified to undertake a review of the management of the testing of ASPs?

**Answer:**

GAO would probably have to rely on outside experts as DHS did to conduct an independent review.

<b>Question#:</b>	19
<b>Topic:</b>	GAO
<b>Hearing:</b>	Nuclear Terrorism Prevention: Status Report on the Federal Governments Assessment of New Radiation Detectors
<b>Primary:</b>	The Honorable Bart Stupak
<b>Committee:</b>	ENERGY & COMMERCE (HOUSE)

**Question:**

Is GAO's perceived lack of expertise on the part of DHS the reason that DHS has asked for an independent review of ASPs?

**Answer:**

No. Upon reviewing the status of the ASP program in conjunction with my 40-years of experience in this field, I determined that this program would benefit from an independent review to analyze the technical data. I made this recommendation to the Secretary and he concurred. My approach was to select a team leader and request him to assemble a team of qualified people to conduct a review of limited scope focusing on the testing part of the program.

**Question:**

Will GAO have full and unfettered access to observe the independent review process carried out by HSI?

**Answer:**

No.

**Question:**

Will the results of this independent review be provided to the Committee and GAO?

**Answer:**

Yes, at an appropriate time after it is reviewed and considered by the Secretary.

**Homeland  
Security**

October 3, 2007

The Honorable Bart Stupak  
Chairman  
Subcommittee on Oversight and Investigations  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, DC 20515

Dear Mr. Chairman:

This letter is in response to the questions you asked concerning the Homeland Security Institute (HSI) during the September 18<sup>th</sup> hearing on "Nuclear Terrorism Prevention."

HSI was established by statute in the Homeland Security Act of 2002 as a Federally Funded Research and Development Center (FFRDC). Consistent with that congressional direction, the Department of Homeland Security (DHS) competitively selected Analytic Services, Inc. (ANSER) in April of 2004 to operate the HSI on behalf of DHS. The FFRDC contract provisions were heavily modeled after those in use by the Department of Defense. Moreover, in the administration of HSI, we instituted the concept of a core program to enable the FFRDC to hire the talent necessary to have a first-class analytic organization and to conduct foundational analytic work for the Department. Much of this "start up" period also involved establishing a program office within the Science and Technology Directorate (S&T) to work with various components in the Department to identify how the FFRDC could meet the Department's basic analytic needs. In addition, the program office identified sponsors of potential task-ordered work to ensure that HSI was only assigned work that is strictly appropriate for an FFRDC. Furthermore, considerable management attention during the foundational period has been spent in ensuring that HSI tasks are well defined analytically and reflect rigorous quality control throughout the execution of both core and task-ordered work.

**Please provide the Committee with the agreement by which work is assigned to HSI as DHS' FFRDC.**

Enclosed is the agreement requested.

**Does HSI get 100 percent of its funding from DHS?**

That is correct; HSI does receive 100 percent of its funding from DHS. This is to be expected, however, since HSI is a FFRDC sponsored by DHS. With very few exceptions, FFRDCs in the federal government receive their total funding from their primary government

“sponsor” and other government customers who contract with the sponsor for work with that FFRDC on a “task order” basis.

**Does HSI have some of its employees detailed or embedded at the Domestic Nuclear Detection Office (DNDO)?**

HSI does not have any detailees to the Department nor do they have an “embedded analyst” in DNDO. At the direction of the Department, HSI established a “Forward Analyst Program” which allows them to deploy analysts to select DHS functions to provide onsite analytic support on a short fuse basis and enable DHS to access HSI’s broader capabilities. Prior to establishment, principles governing the Forward Analyst Program were reviewed and approved by DHS legal counsel to ensure that it operates within FFRDC policy as well as the HSI contract. Also, the Forward Analyst Program is modeled on similar highly effective integrating programs in other agencies, most notably the Department of Defense. Currently, HSI forward analysts are deployed to the Federal Emergency Management Agency, Office of Counter Narcotics Enforcement, Office of National Capital Region Coordination, U.S. Coast Guard (USCG), DHS Office of Policy, Office of the Secretary’s Chief of Staff, and the USCG Deployable Operations Group. Up until June of 2007, HSI did have a part-time forward analyst deployed to DNDO. HSI’s current support to DNDO includes two additional small tasks: a multi-stage study that involves helping DNDO evaluate Concept of Operations (CONOPS) for Mobile detection systems; and a small study to assist DNDO in assessing the benefit of pairing passive detection systems with active analytical techniques. Neither of these forward analysts are involved with the Advanced Spectroscopic Portal (ASP) program.

**Do you believe that analysts, who are deployed at DNDO, could have an impact on HSI’s independence?**

HSI was established strictly in accordance with Federal Acquisition Regulations (FAR) Part 35 through a competitive award to ANSER Corporation in order to operate a FFRDC in the public interest. This would help satisfy DHS’ long-term research and development needs as well as transition those research findings into Departmental Programs. You should also be aware that HSI has a unique, Congressionally mandated charter as set forth in Section 312 of the Homeland Security Act of 2002. It is subject to Congressional oversight not typical of private sector companies, not-for-profit organizations or even other FFRDC’s working in DHS. HSI has a statutory requirement to report their activities to Congress every year. HSI is also bound contractually to the Department to operate in a manner which ensures its objectivity and independence. It is also important to note that FFRDCs came into being to provide support that is not readily available in the sponsoring agency or the private sector. FFRDCs by definition produce independent analysis not biased to favor commercial interests or to endorse the position of a client. HSI is the DHS’ single FFRDC focused solely on providing analytic support to all DHS Components in support of the broader homeland security mission. They were envisioned by Congress to provide long-term strategic support to DHS. HSI, like other FFRDCs, has sharp restrictions on its ability to obtain any commercial work and HSI’s parent organization is similarly contractually prohibited from obtaining work which leverages activities which they perform in operating the FFRDC.

**Are any HSI employees deployed to your office?**

I can confirm that there are no HSI forward analysts deployed to my office. However, if there were a forward analyst in my office, it would be irrelevant to the task at hand based on the standard to which we hold HSI as the Department's FFRDC.

**Does your office provide funding to HSI or has the HSI leadership, specifically Mr. Thompson or Mr. Anderson, lobbied your office for work?**

My office provides funding to HSI for work that is appropriate for an FFRDC and is not the result of lobbying activity. DHS has made a significant investment in HSI and I and Under Secretary Cohen want HSI actively working with all of the Department's components to apply its analytic expertise to solve the Department's problems. I am not aware of any lobbying effort on the part of Mr. Thompson or Mr. Anderson.

**In your due diligence, have you examined the work performed by HSI to ensure they were the appropriate agency to make recommendations?**

I responded that we are using them in other areas to support reviews of individual programs, and they appear to be doing a good job. I would refer you to HSI's most recent annual report to Congress that I have enclosed for your information. It lays out in some detail their activities and contributions over the past year. Beyond their charter as an FFRDC, this is precisely the reason why I selected them to lead this investigation into the ASP program.

**Are you aware of the Senate Homeland Security Appropriations Committee's concerns, per S.1644, with HSI?**

My research leads me to conclude that the Senate language was written before HSI's most recent annual report to Congress was delivered to key members and staff and thus, does not appear to be based on up-to-date information. Furthermore, the Senate Appropriations Committee Professional Staff indicated to S&T budget and finance officials that the primary reason for the cut (and this is reflected in the language in the Senate Report (110-84)) was that it believed HSI activities could be better funded through individual task orders with DHS customers versus a large core program. Also, the cuts to the HSI core program were rationalized as a "bill payer" for other very high priority programs such as Improvised Explosive Device (IED) detection. Many S&T programs sustained similar cuts. DHS has opposed the Senate cut and looks forward to a progress on this particular issue when the Senate and House Appropriations Committees meet in conference to reconcile their versions of the Fiscal Year 08 Appropriations Act.

**Are you aware of the turnover in HSI's leadership, particularly having four Directors in the last three years?**

I can confirm that is in fact the case but do not think that the turnover reflects a lack of commitment by DHS or ANSER Corporation to stand-up a first class analytic support

FFRDC. It is important to note that George Thompson, who was selected to lead the ASP assessment team, has been part of the senior leadership of HSI since its inception in 2004.

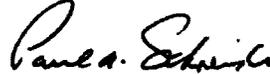
**Does DHS' contract with ANSER, an independent public-service research institute and not-for-profit corporation, who currently operates HSI, expire in Fiscal Year 2009?**

The base contract does in fact expire at the end of December 2008. The Department is currently conducting a comprehensive review in accordance with the FAR 35.017-4 pertaining to extension of the current FFRDC contract. No decision has been made regarding future action in this regard. In response to your follow-on question, regarding any potential impact this contract extension could have on the ASP independent review, I would again reiterate my comments on the fundamental nature of FFRDCs and the fact that HSI was chartered by Congress to be an independent source of analysis for the Department.

In closing, you made it very clear that you were concerned about the connectiveness between HSI and Department of Homeland Security. I would suggest that both the Department and the Congress should be evaluating HSI based on the quality and objectivity of their work—how well they fulfill their role as a FFRDC.

Thank you for your continued support of the Department of Homeland Security, should you have any further questions please contact Mr. Jeffrey Readinger, in the Office of Legislative Affairs at (202) 447-5462.

Sincerely,



Paul A. Schneider  
Under Secretary for Management

Enclosure

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**U.S. House of Representatives**  
**Committee on Energy and Commerce**  
 Washington, DC 20515-6115

JOHN D. DINGELL, MICHIGAN  
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March 11, 2008

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The Honorable Michael Chertoff  
 Secretary  
 Department of Homeland Security  
 1300 Pennsylvania Ave., N.W.  
 Washington, D.C. 20229

Dear Secretary Chertoff:

We are writing to request a public version of the Homeland Security Institute's (HSI) review of the testing and performance of the Advance Spectroscopic Portal (ASP) monitors being developed by the Domestic Nuclear Detection Office (DNDO). The HSI review was requested by Under Secretary Paul A. Schneider as part of an anticipated Secretarial certification to determine whether ASPs provide a significant increase in operational effectiveness. We are also writing to obtain information on the Department of Homeland Security (DHS) process to decide whether to compete or extend the contract to operate HSI. The Committee on Energy and Commerce has held five hearings since 2002 on the Government's efforts to prevent nuclear smuggling, including a September 18, 2007, oversight hearing on the DNDO testing program for ASPs.

The entire 178-page HSI review of the ASP testing program, which is dated February 20, 2008, is designated Official Use Only (OUO). In view of the significant public interest in combating nuclear terrorism, the prominence given to this review by the Under Secretary, the recommendations made by HSI to improve the validity of the testing program within DHS, and the candid responses provided by DNDO, there is significant value in permitting taxpayers to have access to a public version of this report. We are confident the Department can redact sensitive information that would aid and abet our adversaries, while informing the public on what HSI found and the bases of their conclusions.

Thus, this letter formally requests the following documents relating to HSI's review of the ASP testing program:

1. A non-OUO version of the report; and

The Honorable Michael Chertoff

Page 2

2. Any correspondence, memoranda, or e-mails between HSI and any DHS element—including DNDO—between September 1, 2007, and March 5, 2008, regarding this report.

In addition, we understand that DHS has been evaluating whether to compete or extend the HSI contract. DHS advised the Committee that it commenced a review pursuant to FAR 35.017-4—this rule governs whether to extend the sponsorship of a Federally Funded Research and Development Center (FRDC). This letter formally requests the following information in connection with that review:

1. Is the Department planning to re compete the contract—which expires at the end of December 2008—with Analytic Services, Inc. to operate HSI or will the contract be extended? If DHS plans to extend the contract, what is the duration of the extension?
2. If the decision referenced in question one has not yet been made, when is a decision expected?
3. Please provide a copy of the evaluation by DHS in connection with FAR 35.017-4 pertaining to the extension of sponsorship of this FRDC and evaluations on whether to extend the current contract or re compete.
4. Please provide any and all communications between and within your office, the Science and Technology Directorate or other DHS elements (such as procurement), HSI (or representatives of Analytical Services, Inc, the entity which operates HSI), the White House, Congress, and Advisory Boards or other parties (including contractors) concerning the extension or re competition of the HSI contract covering the period January 1, 2007, through March 6, 2008.

Please provide answers to the questions outlined above and deliver copies of the documents requested within 3 weeks of receipt of this letter. Thank you for your cooperation in this matter.

Should you have any questions, please contact us or have your staff contact Richard Miller with the Committee staff at (202) 226-2424.

Sincerely,



John D. Dingell  
Chairman



Bart Stupak  
Chairman  
Subcommittee on Oversight and Investigations

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J. Sepko

J. Seth

JUL 02 2008

The Honorable John Dingell  
Chairman  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, DC 20515

Dear Mr. Chairman:

This letter provides additional information, as requested in your March 11, 2008 letter to Secretary Chertoff, on the review of the Advanced Spectroscopic Portal testing and performance. As you requested, we are providing a redacted (non-For Official Use Only) version of the Advanced Spectroscopic Portal (ASP) Independent Review Team (IRT) Report, and a copy of the e-mails pertinent to the ASP IRT, as attachments to this letter.

With respect to the questions you asked concerning the recompetition of the Homeland Security Institute (HSI) contract, the Department of Homeland Security (DHS) is providing the following information:

***1. Is the Department planning to recomplete the contract - which expires at the end of December 2008 - with Analytic Services, Inc. to operate HSI or will the contract be extended? If DHS plans to extend the contract, what is the duration of the extension?***

The Department's contract with Analytic Services, Inc. to operate HSI expires at the end of December 2008. The contract includes Federal Acquisition Regulation (FAR) 52.217-8 (Option to Extend Services), which enables DHS to extend the period of performance for up to six months past the expiration date of the contract. Because the HSI contract will terminate in April 2009 in accordance with its statutory authorization (please see Section 312(g) of the Homeland Security Act of 2002, as amended by P.L. 108-334 *Making Appropriations for the Department of Homeland Security for the Fiscal Year Ending September 30, 2005 and For Other Purposes*), DHS will extend the period of performance for Analytic Services, Inc. to operate the HSI only until the April 2009 statutorily-prescribed termination date.

DHS intends to issue a solicitation to conduct a full and open competition for the renewal of the sponsoring agreement for the HSI. If Congress does not extend the authorization for the HSI past its current termination date in April 2009, DHS has the option of using its statutory authority under Section 305 of the Homeland Security Act of 2002 (P.L. 107-296). This enables the Under Secretary for Science and Technology to establish or contract with one or more federally funded research and development centers to provide independent analysis of homeland security issues and to carry out other responsibilities under the Homeland Security Act.

**2. If the decision referenced in question one has not yet been made, when is a decision expected?**

Because the HSI contract will terminate in April 2009 in accordance with its statutory authorization (please see Section 312(g) of the Homeland Security Act of 2002, as amended by P.L. 108-334 *Making Appropriations for the Department of Homeland Security for the Fiscal Year Ending September 30, 2005 and For Other Purposes*), DHS will extend the period of performance for Analytic Services, Inc. to operate the HSI only until the April 2009 statutorily-prescribed termination date.

**3. Please provide a copy of the evaluation by DHS in connection with FAR 35.017-4 pertaining to the extension of sponsorship of this FFRDC and evaluations on whether to extend the current contract or recompetete.**

DHS has not completed the Federally Funded Research and Development Center comprehensive review required by FAR 35.017-4. This review is in progress and will be completed prior to renewal of the sponsoring agreement for the HSI. The renewal of the sponsoring agreement for the HSI will be conducted utilizing full and open competition procedures as set forth in the Federal Acquisition Regulation.

**4. Please provide any and all communications between and within your office, the Science and Technology Directorate or other DHS elements (such as procurement), HSI (or representatives of Analytical Services, Inc., the entity which operates HSI), the White House, Congress and Advisory Boards or other parties (including contractors) concerning the extension or recompetition of the HSI contract covering the period January 1, 2007, through March 6, 2008.**

Please find the enclosed e-mail communications arising within the Science and Technology Directorate concerning the extension or recompetition of the HSI contract covering the period January 1, 2007, through March 6, 2008 are provided as an attachment to this letter. Please note that these e-mails are pre-decisional in nature and therefore do not accurately reflect the Department's current strategy concerning the extension or recompetition of the HSI contract. The Department's current strategy is outlined in the response to Question 1 above.

We appreciate your interest in the Department of Homeland Security and look forward to working with you in the future. If you have further questions, please do not hesitate to contact the Office of Legislative Affairs at (202) 447-5890. An identical letter has been sent to the Chairman of the Subcommittee on Oversight and Investigations, Committee on Energy and Commerce.

Sincerely,



Elaine C. Duke  
Acting Under Secretary for Management

Enclosures

cc: The Honorable Joe Barton, Ranking Member, Committee on Energy and Commerce  
The Honorable John Shimkus, Ranking Member, Subcommittee on Oversight and Investigations  
The Honorable Paul A. Schneider, Deputy Secretary  
The Honorable Jay Cohen, Under Secretary for Science and Technology

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**U.S. House of Representatives**  
**Committee on Energy and Commerce**  
 Washington, DC 20515-6115

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September 21, 2007

The Honorable Michael Chertoff  
 Secretary  
 U.S. Department of Homeland Security  
 1300 Pennsylvania Avenue, N.W.  
 Washington, D. C. 20229

Dear Secretary Chertoff:

As a result of a Government Accountability Office (GAO) assessment and a September 18, 2007, hearing before the Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, we are writing to urge you to delay certification of Advanced Spectroscopic Portals (ASPs) and instruct the Domestic Nuclear Detection Office (DNDO) to immediately commence a set of genuinely blind tests of ASPs in order to determine the precision, capability, and detection limits of these radiation portal monitors.

Earlier this year, DNDO conducted tests of ASPs at the Nevada Test Site (NTS), which according to an assessment by GAO, were biased and fundamentally flawed. DNDO has awarded three development and production contracts, and is planning to deploy ASPs at seaports and border crossings. Expenditures may not, however, be made on full-scale production of these new machines until the Secretary certifies, pursuant to a requirement in the fiscal year 2007 Homeland Security Appropriations Act (Public Law 109-699), that ASPs provide a "significant increase in operational effectiveness" relative to the current generation of detection equipment.

GAO's review, which was requested by the Committee on Energy and Commerce, found:

- During Phase 1 tests, which were designed to support certification and subsequent deployment, DNDO used biased test methods that enhanced the performance of ASPs. Specifically, DNDO conducted numerous preliminary runs of almost all of the materials and combinations of materials that were used in the formal tests and then allowed ASP contractors to collect test data and adjust their systems to identify these materials. It is

The Honorable Michael Chertoff

Page 2

highly unlikely that such favorable circumstances would exist under real world conditions;

- DNDO's NTS tests were not designed to test the limitations of the detection capabilities of the ASPs—a critical oversight in DNDO's original test plan. DNDO did not use a sufficient amount of the type of materials that would mask or hide dangerous sources that ASPs would likely encounter at ports of entry. The Department of Energy (DOE) and national laboratory officials raised these concerns with DNDO in November 2006. DNDO officials, however, rejected their suggestion of including additional and more challenging masking materials because, according to DNDO, there would not be sufficient time based on DNDO's self-imposed June 26, 2007, certification deadline. By not collaborating with DOE until late in the test planning process, DNDO missed an important opportunity to procure a broader, more representative set of well-vetted and characterized masking materials; and
- Because of concerns that DNDO did not sufficiently test the limitations of ASPs, DNDO is attempting to compensate for weaknesses in the original test plan by conducting "injection" studies—essentially computer simulations. In GAO's view, and those of other experts, computer simulations may provide additional useful information; however, they must be validated with real world testing with nuclear and masking materials.

Although DNDO also conducted a small number of "blind tests" and additional developmental tests (known as Phase 3), neither of these were designed to support Secretarial certification nor a production decision. For example, the sample sizes in these tests were small and lack statistical power to prove the probability of detection with a high degree of confidence. Nonetheless, DNDO has informed this Committee that it intends to use blind test and Phase 3 data in its recommendation for certification.

GAO recommended that DHS delay certification until all studies are completed and validated, until key stakeholders and independent experts have reviewed these data, and until additional studies have been completed.

In response to GAO's assessment, the Committee received testimony on September 18, 2007, from two Department of Homeland Security officials. Vayl Oxford, DNDO Director, conceded that further tests are required to understand the detection limits of ASPs. Nonetheless, he rejected GAO's recommendation to delay "certification," which, if approved, would allow funds to be expended on full-scale deployment. He indicated that DNDO plans to deploy ASPs in secondary screening, but does not intend to deploy ASPs for primary screening at this time. Oxford affirmed that DNDO intends to use blind and Phase 3 test data even though these data lack statistical power, and he rejected GAO's finding that Phase 1 tests were biased. DNDO's position amounts to stonewalling in the face of patently flawed testing results that cannot credibly support a Secretarial certification.

The Honorable Michael Chertoff  
Page 3

Mr. Paul A. Schneider, DHS Under Secretary for Management, testified that he commissioned an independent program review. While we support his effort to conduct an independent review, we were troubled to learn that he had recently selected an entity, which receives 100 percent of its funding from DHS—the Homeland Security Institute. This extensive and intimate working relationship appears to lack the requisite independence that, for example, might be found with the National Academy of Sciences.

ASPs hold out potential for improving the flow of commerce and reducing nuisance alarms, while reducing uncertainties associated with secondary screening; however, they are not ready for deployment. We respectfully urge you to direct DNDO to take the following steps prior to providing you with any recommendations for certification:

- (1) Promptly plan and implement genuinely blind tests to determine the precision, capabilities, and detection limits of ASPs with a full range of threat, masking, and shielding materials. DNDO should only proceed with its tests after it receives concurrence from CBP and DOE regarding test plans. DNDO should ensure quality control through red teaming;
- (2) Vendors should be instructed to set up their machines and leave the test site. Vendors should not be provided with a copy of the test plan, nor be advised what threat, masking, or shielding material will be used. ASP software and algorithms should not be adjusted or otherwise modified in connection with dry runs and dress rehearsals or as part of the blind tests;
- (3) Permit GAO to review test plans in advance, observe all tests, and evaluate these data; and
- (4) While testing is proceeding, we support CBP continuing field evaluation with ASPs under a variety of environmental conditions and exposure to the full range of cargo types found at different ports of entry and border crossings.

Nothing is more important than preventing terrorists from smuggling radioactive materials or a nuclear device into the U.S. We have to be right 100 percent of the time, whereas terrorists only have to be right once. Given this shared goal, we respectfully urge you to ensure that there is credible, unbiased testing under real world conditions to make sure that Federal officials fully understand the capability, precision, and detection limits of ASPs.

The Honorable Michael Chertoff  
Page 4

If you have any questions, please contact us or have your staff contact Richard Miller or  
Chris Knauer with the Committee on Energy and Commerce staff at (202) 226-2424.

Sincerely,



John D. Dingell  
Chairman



Bart Stupak  
Chairman  
Subcommittee on Oversight and Investigations

cc: The Honorable Joe Barton, Ranking Member  
Committee on Energy and Commerce

The Honorable Ed Whitfield, Ranking Member  
Subcommittee on Oversight and Investigations

The Honorable Paul A. Schneider, Under Secretary for Management  
U.S. Department of Homeland Security

The Honorable Samuel W. Bodman, Secretary  
U.S. Department of Energy

The Honorable Vayl Oxford, Director  
Domestic Nuclear Detection Office  
U.S. Department of Homeland Security

Mr. Jayson P. Ahern, Deputy Commissioner  
U.S. Customs and Border Protection  
U.S. Department of Homeland Security

07-7536

MAR 10 2008

*rest*Secretary  
U.S. Department of Homeland Security  
Washington, DC 20528cc:  
Richard Mills  
C. Krauer  
D. Sapka  
K. ChapmanHomeland  
Security

February 25, 2008

The Honorable John Dingell  
Chairman  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, D.C. 20510

Dear Chairman Dingell:

Thank you for your September 21, 2007 letter expressing continued interest in the efforts of the Department of Homeland Security (DHS) to prevent a nuclear terrorist attack and the Domestic Nuclear Detection Office's (DNDO) Advanced Spectroscopic Portal (ASP) program.

I share your concern over the threat of nuclear terrorism and consider countering this threat to be one of the Department's top priorities. We face an enormous challenge at our ports and borders as we balance the flow of goods and commerce with the need to sufficiently scan cargo entering our Nation for radiological or nuclear threats. The technologies that we are pursuing in the ASP program are a critical component in addressing that challenge.

I also recognize the unique role that the Government Accountability Office (GAO) plays by providing investigative support to the Congress, and I take to heart the issues that GAO raised in the hearing of September 18, 2007. With that said, the combination of evaluations undertaken by DNDO and U.S. Customs and Border Protection (CBP), the oversight and evaluation provided by the Under Secretary for Management, and the independent review panel that he commissioned represent a substantial and sufficient level of assessment necessary to meet the legislative requirements included in the FY 2007 Homeland Security Appropriations Act (P.L. 109-295). In addition, we will also be consulting the National Academy of Sciences pursuant to the requirements of the *Consolidated Appropriations Act 2008*, P.L. 110-161. The Department will continue down a methodical and reasoned path towards improving our capabilities in the field. Even after the conclusion of the most recent test campaign and the decision that I ultimately make regarding ASP performance, I will continue to challenge DNDO and CBP to develop incremental improvements to our technical and operational capabilities.

It is understandable why the Committee and GAO are concerned with determining the "detection limits" of ASP systems. However, it is important to note that the appropriations language requires the certification of ASP systems relative to the performance of current systems, rather than in the absolute. While the final limits of ASP performance may not be known to absolute precision, I assure you that any decision I make regarding improvements in ASP performance will be based on a full understanding of the limits of current systems.

As was always planned, injection studies, based on data collected under real world conditions and against actual threat materials will be used to continue to explore the performance limits of ASP systems. Injection studies provide an effective and economical way to evaluate systems against a wide range of scenarios, assuming that the studies are periodically validated against additional data points and will be used to inform additional tests as required. As limits become known and understood, we will continue to improve the systems through a standard modeling, development, and testing cycle.

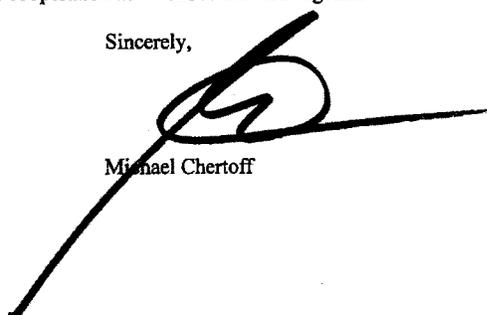
As part of the process leading to a certification decision, CBP, which is the eventual operator of ASP systems, conducted a series of field validations at ports of entry. Review of the status of field validation testing led to the determination that additional functional capability is needed to meet operational requirements.

Based on these results and because certification was originally scheduled to be made prior to the major production decision, the Department decided it was prudent to instead couple the certification decision more closely with a larger production and deployment decision. Therefore, my certification will now signify not only that the next-generation ASP system demonstrates significant improvement in operational effectiveness, but that the system also fully meets the functional requirements of the operator, i.e., CBP. As such, the certification will communicate the Department's final position prior to both full-scale production and deployment.

To ensure that I will have all information necessary to make this certification, ASP systems will undergo an additional period of development, testing, and evaluation. Development efforts in FY 2008 will be focused primarily on meeting the final functional requirements identified by CBP as necessary prior to larger deployment. Additional testing will be done to validate that functional improvements do not adversely affect the detection and identification capabilities of the systems. Finally, DNDO will collect data to provide benchmark spectra for injection studies. These studies will allow DNDO to further assess the performance of ASP systems against a wider range of threats and cargo loads.

In response to your concern regarding the use of the Homeland Security Institute (HSI), I have attached a letter addressing the questions that arose during the September 7, 2007 hearing concerning the independence of HSI. I assure you that the decision I make whether to proceed with ASP production and deployment or not will be taken with the greatest care and consideration. I welcome and appreciate your active engagement with this program, and look forward to continuing our cooperation as we move forward together.

Sincerely,



Michael Chertoff

Enclosure

Ex. #	Description	Date
1	Subcommittee on Oversight and Investigations Witness List	09/18/07
2	O&I Hearing Memo; subject: "Nuclear Terrorism Prevention: Status Report on the Federal Government's Assessment of New Radiation Detection Monitors"	
3	Hearing Terms Sheet	
4	Witness Biographies	
5	List of Incidents Involving the Smuggling of Highly Enriched Uranium and Plutonium, confirmed to the International Atomic Energy Agency	1993-2006
<b>Current Government Accountability Office (GAO) Documents</b>		
6	Briefing presentation to the Subcommittee staff, "GAO Concerns Regarding the Testing of Advanced Spectroscopic (ASP) Monitors Conducted by the Domestic Nuclear Detection Office, Department of Homeland Security."	09/05/07
7	GAO Timeline for DNDO's ASP Program and Pictures	09/14/07
<b>Historical Government Accountability Office (GAO) Documents</b>		
8	GAO Testimony of Gene Aloise before the Committee on Homeland Security, "Combating Nuclear Smuggling: DHS's Decision to Procure and Deploy the Next Generation of Radiation Detection Equipment is Not Supported by its Cost-Benefit Analysis."	03/14/07
<b>Domestic Nuclear Detection Office (DNDO) Documents</b>		
9	Phase 1, "Test Plan in Support of ASP Production Decision Conducted at the Nevada Test Site."	01/12/07
10	Phase 3, "Test Plan for the Conduct of Data Collection at the Nevada Test Site in Support of Development of ASP Systems."	03/30/07
11	DNDO presentation, "ASP Test Campaign: Responding to the GAO Statement of Facts." (non "Official Use Only" version)	09/07/07
12	Document, "ASP Special Testing" (Blind Test).	
13	Chart, "Path Forward to Secretarial Certification of ASP."	
14	Venn Diagram, subject: "Source Configurations for NTS Test Cases."	
<b>Department of Homeland Security (DHS) Documents</b>		

15	List of ASP Review Team Members	
16	Biographies of ASP Review Team Members	
17	Memo to Secretary Chertoff and Deputy Secretary Jackson from Under Secretary Schneider, re: Announcing Postponement of Certification.	08/30/07
<b>Department of Energy (DOE) Documents</b>		
18	Document, "Planned Advanced Spectroscopic Portal (ASP) Data Gathering at LANL" (non-OUO version).	
<b>Correspondence</b>		
19	Letter to Vayl Oxford, Director of DNDO from Reps. Dingell, Stupak, Barton and Whitfield.	01/19/07
20	Response Letter to Rep. Stupak from Vayl Oxford, regarding 01/19/07 Correspondence	02/15/07
21	Letter to Rep. Stupak from Secretary Michael Chertoff, Department of Homeland Security (DHS), re: Announcement of Independent Review.	07/20/07
22	Letter to Pete Nanos, Defense Threat Reduction Agency, from Paul Schneider, DHS Under Secretary for Management, re: Appointment of Nanos to Independent Review Panel, with Terms of Reference Memo.	08/03/07
23	Letter to Under Secretary Schneider from Rep. Dingell	08/10/07
24	Response Letter to Rep. Dingell from Under Secretary Paul Schneider, re: 08/10/07 Letter.	08/20/07
25	Follow up Response Letter to Rep. Dingell from Under Secretary Paul Schneider, re: 08/10/07 Letter.	09/14/07
26	Response to Committee Questions from Raytheon regarding ASPs	09/17/07
<b>News Articles</b>		
27	USA Today article by Mimi Hall, subject: "Radiation Detectors Tested in Nevada."	02/14/06
28	GovernmentExecutive.com article by Jon Fox, subject: DHS Official Pushes Launch of New Nuclear Detectors."	04/12/07
29	Washington Post article by Robert O'Harrow, subject: "Radiation-Monitor Study Sought."	08/01/07
30	Washington Post article by Robert O'Harrow, subject: "Review of Radiation Detectors Questioned."	08/16/07
31	Washington Post article by Robert O'Harrow, subject: "Nukes, Monitors and Questions Continued."	08/23/07
32	HSToday.us article by Mickey McCarter, subject: "DHS Awards Advanced Radiation Detector Contracts."	09/13/07

<b>DHS Documents Marked "Official Use Only" (OUO)</b>		
33	Slide presentation excerpts from DNDO, subject: "ASP Test Campaign: Responding to the GAO Statement of Facts."	09/07/07
<b>Legislation</b>		
34	Excerpt from House Report 109-699, "Making Appropriations for the DHS for the FY ending Sept. 30, 2007, and for Other Purposes."	
<b>Additional Documents</b>		
35	Response to Minority Staff Member Dwight Cates from GAO, re: Investigation of ASP.	
36	Minority Submitted "Revised Statement of Facts" from DHS.	09/05/07

**EXHIBIT 3**

**Hearing Terms Sheet**

**ASP (Advanced Spectroscopic Portal)** – a large drive through radiation detection device using Sodium Iodide crystals that is able to detect types of radioactive material and specific isotopes.

**ASP Vendors tested at the Nevada Test Site –**

Thermo	ASP	using Sodium Iodide
Raytheon	ASP	using Sodium Iodide
Canberra	ASP	using Germanium

**PVT (Polyvinyl Toluene)** – A large drive through radiation detection device used in Primary screening of cargo. PVTs can detect radioactivity, but not specific materials or isotopes.

**RIID (Radiation Isotope Identification Device)** – a small handheld device used in Secondary screening of cargo that is able to decipher different types of radioactive material and isotopes. RIIDs use Sodium Iodide (NaI) crystals.

**LSS (Laboratory and Scientific Services) Reach Back** – data base that the RIIDs or ASPs can access if there is inconclusive results. If a RIID still cannot identify an element or isotope, it will download its data into the LSS system which will attempt to identify the isotope.

**NORM (Naturally Occurring Radioactive Materials)** – materials seen in the usual course of business that have radioactive materials in them. Such materials include kitty litter, bananas, and roofing tiles.

**SNM (Special Nuclear Material)** – Nuclear material that can be used in weapons production. SNM includes **HEU (Highly Enriched Uranium)**, **WGP (Weapons Grade Plutonium)**, and **Neptunium**.

**NTS (Nevada Test Site)** – Location where Phase 1, Phase 3, and Blind Tests were done (Phase 2 was report writing, not testing).

**GAO (Government Accountability Office)**

**CBP (Customs and Border Protection)**

**DOE (Department of Energy)**

**DHS (Department of Homeland Security)**

**DNDO (Domestic Nuclear Detection Office)** located within DHS

**EXHIBIT 4**

**Miller, Richard**

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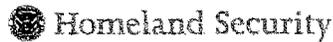
**From:** Keith A Rhodes [rhodesk@gao.gov]  
**ent:** Thursday, September 13, 2007 12:34 PM  
**To:** F James Shafer Jr, Miller, Richard  
**Subject:** RE: Fwd: Keith Rhodes

Richard,

here is my official biography:

Keith A. Rhodes

Keith Rhodes is currently the Chief Technologist of the U. S. General Accounting Office and Director of the Center for Technology & Engineering. In this capacity, he provides assistance throughout the Legislative Branch on issues requiring significant technical expertise. He has been the senior adviser on a range of assignments covering non-proliferation, continuity of government & operations, export control, computer security & privacy, e-commerce & e-government, voting systems, and various unconventional weapons systems. He has served as a Commissioner on the Independent Review of the National Imagery and Mapping Agency. Before joining GAO, he was a supervisory scientist leading weapons and intelligence programs at the Lawrence Livermore National Laboratory. His other work experience includes national security projects at Northrop Corporation and Ohio State. He holds degrees in computer engineering and engineering physics from the Ohio State University and the University of California (Los Angeles), respectively. Throughout his career, he has garnered numerous awards and citations, including a Distinguished Service Award and the 1st Arthur Flemming Medal for Applied Science. He is a Professional Engineer, a Certified Computing Professional, and a member of the New York Academy of Science. He holds patents in automated control systems and has authored numerous articles and taught courses on computational modeling, computer security, performance modeling and computer architecture for several technical journals.



### Under Secretary Management Paul A. Schneider



*SCHNEIDER BIO*

Paul A. Schneider was sworn in January 3, 2007, as the Department of Homeland Security's (DHS) Under Secretary for Management. He is responsible for all the department's budget, appropriations, expenditure of funds, accounting and finance; procurement; human resources and personnel; information technology systems; facilities, property, equipment, and other material resources; and identification and tracking of performance measurements.

Prior to coming to DHS, Schneider served as a defense and aerospace consultant where he led a congressionally directed study for NASA on the costs, risks and benefits of human space flight and a study of open architectures for the U.S. Navy. He led an independent review of the presidential helicopter replacement program, played a role in the administration's effort to develop the plan for the Next Generation Air Transportation System and led reviews of Defense network centric warfare and interoperability programs.

Schneider served as the Senior Acquisition Executive of the National Security Agency (NSA) from October 2002 to September 2003, where he was responsible for oversight and execution of signals intelligence and information security development and acquisition programs.

Schneider served as the Principal Deputy Assistant Secretary of the Navy for Research, Development and Acquisition from July 1998 to September 2002. He was responsible for the oversight and execution of Navy and Marine Corps research, development and acquisition programs with an annual budget in excess of \$30 billion. During the administration transition he served as the acting Assistant Secretary of the Navy for 8 months.

From October 1994 to June 1998 Schneider served as the Executive Director and Senior Civilian of the Naval Sea Systems Command, the Navy's largest shore organization. In this position, he was responsible for the day-to-day operations of an \$18 billion a year, 70,000-person organization, including shipyards, laboratories, and engineering and test facilities.

Schneider began his career in 1965 at the Portsmouth Naval Shipyard as a Project Engineer in the Submarine Propulsion and Auxiliary Machinery systems branch.

From 1966 to 1981 he served in several positions in submarine design, construction and overhaul programs. His last assignment was managing the Trident ship design and the integration of weapons and combat systems. He also served as Program Manager for a Submarine Advanced Technology Program.

He was appointed to the Senior Executive Service in 1981, when he served as the Deputy Director of NAVSEA'S Auxiliary Systems Sub-Group in the Engineering Directorate.

From March 1986 to March 1981, he was the Executive Director of the Amphibious, Auxiliary, Mine and Sealift Ships Directorate, responsible for ship design, acquisition, maintenance, modernization and life cycle support of these ships. During this period, he also served as Program Manager for two classified programs. From March 1991 to October 1994, he was the Executive Director of the Surface Ship Directorate with expanded responsibilities to include aircraft carriers and in-service surface combatants, combat systems, security assistance and foreign military sales and the Navy's diving and salvage program.

Schneider holds a degree in nuclear engineering and is a member of the American Society of Naval Engineers (ASNE), Armed forces Communications and Electronics Association (AFCEA), Association of Scientists and Engineers (ASE), Navy League, Association of Old Crows and the Naval Institute.

During his service with the Federal Government, Schneider has been the recipient of the Department of the Navy Superior Civilian Service Award and the Distinguished Civilian Service Award; the Department of Defense Distinguished Civilian Service Award (twice) and the President's Award for Distinguished Civilian Service. He also received three Presidential Rank Awards.

This page was last modified on February 5, 2007



- Ranking  
21%
- #143 of 180 Items
- How is ranking calculated?
- User Reviews Not Rated

## John J. Higbee Bio

### Related Information

#### Long Description

#### Biography: John J. Higbee Executive-In-Residence / Professor, Program Management Defense Acquisition University

John J. Higbee, a native of St. Louis, Missouri, graduated from the United States Naval Academy in 1974, where he majored in Physics. A nuclear submariner, his early service included tours on USS SPADEFISH (SSN 668) as Weapons Officer, Seventh Company Officer at the Naval Academy, USS JOHN MARSHALL (SSN 611) as Engineer Officer, and USS STURGEON (SSN 637) as Navigator/ Operations Officer.

LCDR Higbee reported for duty in July 1985 as Head, Torpedo and Launcher Section, in the office of the Deputy Chief of Naval Operations (Submarine Warfare). During this tour, he participated as Program Sponsor/Coordinator in the successful effort to complete development and begin production of the Mark 48 Advanced Capability (ADCAP) Torpedo. From February 1988 to March 1990, he served as Executive Officer, USS ALASKA (SSBN 732) (GOLD), completing four strategic deterrent patrols.

In December 1990, CDR Higbee took command of USS VON STEUBEN (SSBN 632) (GOLD) and completed four strategic deterrent patrols. From April 1993 to July 1995, he was attached to the New Attack Submarine (NSSN) Program (PHD450/PHD401), serving as Combat System Design Manager, NSSN Command, Control, Communications and Intelligence (C3I) System. During his tour, he led the NSSN C3I team that won the 1996 David Packard Excellence in Acquisition Award for its groundbreaking work in designing and procuring the first open architected, COTS-based submarine C3I system. He then served as Deputy Program Manager, Submarine Regional Warfare Program (PMO 415) from August 1995 to July 1996, where he was integral to the successful development/production of submarine defensive warfare systems.

In November 1996, CAPT Higbee relieved as Program Manager, Navy Undersea Weapons Program (PMS404). During his tour, PMS404 achieved fleet introduction of the Mark 48 Mod 5 (ADCAP MOD5) Torpedo, began development of the Mark 54 Lightweight Hybrid Torpedo, initiated a program to develop improved acoustic torpedo capability (also laying the groundwork to partner with Australia in this effort), and began a radical restructuring and outsourcing of Undersea Weapons Intermediate Maintenance Activities. His program office won the 1999 Defense Acquisition Executive Certificate of Achievement for pioneering an innovative asset exchange partnership with industry that has DoD-wide applicability.

CAPT Higbee assumed duties as Acting Deputy Assistant Secretary of the Navy (DASN (C4I/EW/Space)) in June 1999, and as Military Deputy to the DASN in September 1999. During his tour, he was a key player in the effort that took the Navy Marine Corps Intranet (NMCI) from a concept to contract award in thirteen months. NMCI, which established a single DoN-wide network provided as a contractor service, is the largest (~\$7.0B) Information Technology outsourcing effort ever conducted within the Department of Defense. Additionally, CAPT Higbee led critical studies that determined program plans and approaches for two vital C4I systems (the Mobile Users Objective System, and the DOD Teleport System), and co-chaired the team that authored the DoN input to the FY2001 DOD Network-Centric Report to Congress. Upon retirement from the Navy in early 2002, Mr. Higbee assumed duties as Executive-In-Residence / Professor, Program Management at Defense Acquisition University, Ft. Belvoir, VA.

Mr. Higbee holds a Master of Science in Engineering from Catholic University. He is also a graduate of the DAU Advanced and Executive Program Management Courses, and the Cornell University Executive Development Program.

In addition to the acquisition awards listed above, Mr. Higbee's personal awards include the Legion of Merit (two awards), the Meritorious Service Medal (five awards), the Navy and Marine Corps Commendation Medal, and the Navy and Marine Corps Achievement Medal (four awards).

**Back**

#### Details

Benefit/Value  
Benefit of Value

Creation Date  
Tuesday, October 7, 2003 9:02 PM

Modified Date  
Saturday, June 17, 2006 8:49 AM

#### Discussions

<https://acc.dau.mil/CommunityBrowser.aspx?id=54317>

9/12/2007



**Vayl S. Oxford**  
*Director*



**Homeland  
Security**

Reporting directly to Secretary Chertoff, Mr. Vayl Oxford was appointed Director of the Domestic Nuclear Detection Office (DNDO) by the President in December 2006. Mr. Oxford is responsible for DNDO's jointly staffed office, which serves as the primary entity in the United States Government to improve the Nation's capability to detect and report unauthorized attempts to import, possess, store, develop, or transport nuclear or radiological material for use against the Nation, and to further enhance this capability over time.

Prior to his appointment to the Department of Homeland Security (DHS), Mr. Oxford served as Director for Counterproliferation (CP) on the White House National Security Council (NSC). His responsibilities included establishing national policy and priorities for CP, which have been codified into the National Strategy for Combating Weapons of Mass Destruction. Before assignment to the White House, Mr. Oxford was Deputy Director for Technology Development at the Defense Threat Reduction Agency, where he was principally involved in the Research and Development vision for future-year programs.

From 1993 to 1998, Mr. Oxford worked for the Defense Nuclear Agency and was then Director for Counterproliferation at the Defense Special Weapons Agency. He also served in the United States Air Force in aircraft and weapons development positions; and as Assistant Professor of Aeronautics at the United States Air Force Academy. Mr. Oxford is a graduate of the United States Military Academy and the Air Force Institute of Technology, and the recipient of numerous military awards. He received the Department of Defense Advanced Concept Technology Demonstration Technical Manager of the Year Award in 1997. He received the Meritorious Executive Presidential Rank Award in 2002.

**Huban A. Gowadia**

Dr. Huban Gowadia serves as Assistant Director of the Mission Management Directorate in the Department of Homeland Security's (DHS), Domestic Nuclear Detection Office (DNDO). In this capacity, Dr. Gowadia is responsible for ensuring an effective link between user requirements, operational support, and technology development across the nuclear detection architecture.

Before becoming the Assistant Director for the Mission Management Directorate, Dr. Gowadia served DNDO as the Assistant Director for Assessments where she was responsible for DNDO Test and Evaluation programs, the administration of Pilot Programs that demonstrate technology and operational concepts, and conducting independent Red Teaming and Net Assessments of the deployed nuclear detection architecture.

Previously, Dr. Gowadia served as Program Executive for DHS's Science & Technology Countermeasures Test Beds. Here, state-of-the-art and next-generation technologies for detection and identification of threat devices were evaluated in conjunction with operational requirements and response protocols.

In 2001 Dr. Gowadia joined the Technology Integration Division in the Federal Aviation Administration's Office of Civil Aviation Security Policy & Planning in Washington, D.C., which was then transitioned to the Office of Security Technologies in the Transportation Security Administration (TSA). As Checkpoint Program Manager, she led TSA's initiative to replace all walk-through metal detectors at airports with enhanced systems in the nine months after September 11, 2001.

Dr. Gowadia's doctoral work at Pennsylvania State University investigated the fluid mechanics, heat/mass transfer, and aerobiology of sampling traces emitted by explosives concealed upon the human body to develop an explosives detection portal for security screening. Dr. Gowadia received a Bachelor of Science in Aerospace Engineering from the University of Alabama in 1993; her Ph.D. in Mechanical Engineering in 2000.

Dr. Gowadia was appointed to Senior Executive Service (SES) in 2006.

**EXHIBIT 5**

Incidents involving HEU and Pu confirmed to the ITDB, 1993-2006			
Date	Location	Material Involved	Incident Description
1993-05-24	Vilnius, Lithuania	HEU/ 150 g	4.4 t of beryllium including 140 kg contaminated with HEU were discovered in the storage area of a bank.
1994-03	St.Petersburg, Russian Federation	HEU/ 2.972 kg	An individual was arrested in possession of HEU, which he had previously stolen from a nuclear facility. The material was intended for illegal sale.
1994-05-10	Tengen-Wiechs, Germany	Pu/ 6.2 g	Plutonium was detected in a building during a police search.
1994-06-13	Landshut, Germany	HEU/ 0.795 g	A group of individuals was arrested in illegal possession of HEU.
1994-07-25	Munich, Germany	Pu/ 0.24 g	A small sample of PuO <sub>2</sub> -UO <sub>2</sub> mixture was confiscated in an incident related to a larger seizure at Munich Airport on 1994-08-10.
1994-08-10	Munich Airport, Germany	Pu/ 363.4 g	PuO <sub>2</sub> -UO <sub>2</sub> mixture was seized at Munich airport.
1994-12-14	Prague, Czech Republic	HEU/ 2.73 kg	HEU was seized by police in Prague. The material was intended for illegal sale.
1995-06	Moscow, Russian Federation	HEU/ 1.7 kg	An individual was arrested in possession of HEU, which he had previously stolen from a nuclear facility. The material was intended for illegal sale.
1995-06-06	Prague, Czech Republic	HEU/ 0.415 g	An HEU sample was seized by police in Prague.
1995-06-08	Ceske Budejovice, Czech Republic	HEU/ 16.9 g	An HEU sample was seized by police in Ceske Budejovice.
1999-05-29	Rousse, Bulgaria	HEU/ 10 g	Customs officials arrested a man trying to smuggle HEU at the Rousse customs border check point.
2000-12	Karlsruhe, Germany	Pu/ 0.001 g	Mixed radioactive materials including a minute quantity of plutonium were stolen from the former pilot reprocessing plant.
2001-07-16	Paris, France	HEU/ 0.5 g	Three individuals trafficking in HEU were arrested in Paris. The perpetrators were seeking buyers for the material.
2003-06-26	Sadahlo, Georgia	HEU/ ~170 g	An individual was arrested in possession of HEU upon attempt to illegally transport the material across the border.
2005-03 to 2005-04	New Jersey, USA	HEU/ 3.3 g	A package containing 3.3 g of HEU was inadvertently disposed of.
2005-06-24	Fukui, Japan	HEU/ 0.0017 g	A neutron flux detector was reported lost at an NPP.
2006-02-01	Tbilisi, Georgia	HEU/ 79.5 g	A group of individuals was arrested trying to illegally sell HEU.
2006-03-30	Hennigsdorf, Germany	HEU/ 47.5 g	Authorities discovered trace amounts of HEU on a piece of tube found amidst scrap metal entering a steel mill.

**EXHIBIT 6**



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**Briefing to the Subcommittee on Oversight  
and Investigations,  
House Committee on Energy and Commerce  
September 5, 2007**

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182

**GAO Concerns Regarding the Testing of  
Advanced Spectroscopic Portal Monitors  
Conducted by the Domestic Nuclear Detection  
Office, Department of Homeland Security**

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## Objective

- The Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, asked us to review and analyze the Domestic Nuclear Detection Office's (DNDO) testing of advanced spectroscopic portal (ASP) monitors conducted at the Nevada Test Site (NTS) between February and March 2007.



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## Summary

- The tests conducted by DNDO at the Nevada Test Site between February and March 2007, in support of Secretarial Certification and the full-scale production of the next generation of radiation detection equipment, raise concerns.
- DNDO's test methods did not provide a fair and balanced evaluation of the ASPs' capabilities. Instead, DNDO's NTS tests were a demonstration of ASP performance under controlled conditions.
- We believe that the results do not demonstrate a "significant increase in operational effectiveness" relative to the current generation of detection equipment, and should not be relied upon to make a full-scale production decision.

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## Summary

- 
- Our concerns with the tests include:
    - DNDO pre-tested the ASPs' abilities to identify a majority of the materials that the monitors were tested against during formal testing. Specifically, DNDO conducted numerous preliminary runs of radiological, nuclear, masking, and shielding materials, as well as empty cargo containers, so that ASP contractors could collect test data and adjust their systems accordingly.
    - DNDO did not use a sufficient amount of the type of materials that would mask or hide dangerous sources and that ASPs would likely encounter at ports of entry.
    - DNDO did not use the complete set of standard operating procedures that support the use of the handheld detectors, or radioactive isotope identification devices (RIIDs) that are part of the currently deployed radiation detection system.
-

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## Summary

- As a result of concerns raised about DNDO's NTS tests, DNDO now plans to conduct computer-simulated testing which will focus on an important missing piece of information—the limits of the ASPs' capabilities. However, in our view and that of other national laboratory experts, these computer simulations are not as good as testing with actual nuclear and masking materials.
- On August 29, 2007, we briefed DNDO, Customs and Border Patrol (CBP), and Department of Energy (DOE) officials regarding our audit results. On August 30, 2007, the DHS Undersecretary for Management recommended that the Secretary of Homeland Security delay Secretarial Certification of ASPs for an additional two months.

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## Definitions

- Background radiation: The amount of radiation naturally present in the environment.
- Detection: Determination of the presence of radiation above background levels.
- Identification: The ability of a detection system to determine specific radioactive isotopes.
- NORM: Naturally Occurring Radioactive Material is non-threatening radioactive material (such as potassium-40 that is present in bananas) that may nonetheless cause portal monitors to alarm.
- Threat Material: Radioactive material that could pose a danger through its use in a nuclear weapon or dirty bomb. It is the material that radiation detection equipment attempts to detect and identify.

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## Definitions

- Radiological Emissions: The amount of radioactivity given off by radioactive sources. Some sources emit considerably more radiation than others.
- Masking: Using a mix of radioactive materials, such as NORM, to hide threat materials. The stronger the energy emission, the better it may be in masking the presence of threat material.
- Shielding: The absorption of radiological emissions before they reach a detector. This reduces the probability that such emissions will be detected.
- Injection Study: A computer simulation in which a threat spectrum is superimposed onto benign sources as a means to measure the performance of detection and identification algorithms.

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## Background

- Preventing nuclear and radioactive material from being smuggled into the United States—perhaps to be used by terrorists in a nuclear weapon or in a radiological dispersal device (a "dirty bomb")—has become a key national security objective.
- DNDO was established within DHS in April 2005 to prevent the unauthorized import, transport, possession, or storage of nuclear or radiological materials intended for illicit use.
- DNDO is responsible for the development, testing, acquisition and deployment of a system of equipment and technology used to detect radiation at U.S. ports of entry (POE).
- A critical component of DNDO's radiation detection system involves the deployment of radiation portal monitors (RPMs) used to screen cargo container shipments and trucks as they enter the United States.

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## Background

- U.S. Customs and Border Protection (CBP) is responsible for managing U.S. POEs, including, among other things, operating radiation detection equipment.
- To screen commerce for radiation, CBP uses several types of detection equipment, including large stationary first generation RPMs that use polyvinyl toluene plastic scintillators, known as PVTs, and a system of standard operating procedures.
- PVTs can detect gamma radiation (emitted by all of the materials of greatest concern) and neutrons (emitted by only a limited number of materials, including plutonium—a material that can be used to make a nuclear weapon).
- CBP's standard procedures direct vehicles, containers, and people coming into the country to pass through PVTs to screen for the presence of radiation.

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## Background

- This "primary inspection" serves to alert CBP officers that a radioactive threat might be present.
- All traffic that causes an alarm during primary inspection is to undergo a "secondary inspection" that consists of screening with another PVT to confirm the presence of radiation, and includes CBP officers using RIIDs to determine the source of radiation being emitted.
- If CBP officers identify a nuclear or radiological threat during a secondary inspection, then officers are to establish a safe perimeter around the nuclear material and contact scientists in CBP's Laboratories and Scientific Services (LSS) for further guidance.
- Typically, if CBP officers find irregularities, physical examinations are conducted.

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## Background

- DNDO believes the current radiation detection system has several weaknesses:
  - PVTs are able to detect, but unable to identify, radioactive isotopes and, therefore, cannot distinguish between dangerous (e.g., highly enriched uranium) and benign (e.g., ceramic tile) materials.
  - RIIDs have limited identification abilities and in 2006 were estimated, under certain testing conditions, to effectively identify radioactive isotopes about 40 to 50 percent of the time.
  - As handheld devices, RIIDs are subject to user error.
- DNDO also asserts that the number of secondary RIID inspections required to further investigate primary inspections—especially at high-volume POEs—results from too many false alarms that impede the flow of commerce.

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## Background

- Furthermore, according to CBP officials, secondary inspections significantly increase the CBP officers' inspection workload. These officials believe that if the number of secondary inspections could be reduced, CBP could devote more resources to its other border enforcement responsibilities, such as drug interdiction and immigration.
- While CBP officials recognize the limits of the currently deployed system and would like to reduce the number of secondary inspections, these officials told us that they believe that, when used together with other standard operating procedures, the system of PVT and RIID screening provides the best possible radiological and nuclear screening coverage available with current technology.

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## Background

- According to DNDO, a new generation of portal monitors, known as advanced spectroscopic portal (ASP) monitors will address the weaknesses of the currently deployed PVT and RIID system.
- ASPs use sodium iodide or high-purity germanium crystals, similar to those contained in a RIID, to detect and identify radiological signatures.
- Whereas RIIDs contain a single, small crystal, ASPs contain multiple large crystals within multiple portal panels.
- According to DNDO, the ASP spectroscopic ability to differentiate between threat and innocent radioactive materials will reduce the number of false alarms, or “nuisance alerts” and, in the process, reduce the workload in secondary inspections.
- According to CBP officials, the ASPs will eventually reduce the number of CBP officers needed to conduct radiation screening.

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## Background

- In March 2006, we recommended that, to ensure that DHS' substantial investment in radiation detection technology yielded the greatest possible level of detection and identification capability at the lowest possible cost, no new equipment be purchased until DNDO fully understood the performance capabilities of ASPs.
- Moreover, we recommended that DNDO conduct an analysis of the benefits and costs of deploying ASPs—specifically, the extent to which the additional detection and identification capabilities of the new monitors were worth the additional cost.

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## Background

- In response to our recommendation, in May 2006, DNDO issued a cost-benefit analysis (CBA) for the acquisition and deployment of new portal monitors.
- In July 2006, DHS announced that it had awarded contracts to three vendors to develop and purchase up to \$1.2 billion worth of ASP monitors over 5 years.
- In October 2006, GAO concluded that DNDO's CBA did not justify DHS' plan to spend \$1.2 billion to purchase and deploy ASPs and recommended that DNDO conduct further testing of ASPs and PVTs before spending additional funds to purchase ASPs.

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## Why the Tests at the Nevada Test Site Were Conducted

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- The FY 2007 Homeland Security appropriation bill states that “none of the funds appropriated...shall be obligated for full scale procurement of (ASP) monitors until the Secretary of Homeland Security has certified...that a significant increase in operational effectiveness (over the current system) has been achieved.”
  - DNDO stated that its request for Secretarial Certification of ASPs would be presented in the context of DHS Management Directive 1400 (MD 1400) Key Decision Point Three (KDP-3), which details DHS guidelines for the review and approval of complex developmental acquisition investments to move from the “Capability Development and Demonstration” phase to the “Production and Deployment” phase.
  - Further, MD 1400 states that “With approval at KDP 3, the [acquisition] investment is authorized to commence the Production and Deployment Phase and the future years program plan must be fully funded.”
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## Why the Tests at the Nevada Test Site Were Conducted

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- To meet the legislative requirement to certify the “significant increase in operational effectiveness,” and DHS Acquisition requirements, DNDO, with input from subject matter experts, developed a series of test campaigns intended to demonstrate, among other things, ASP performance and deployment readiness.
- The tests were conducted at several venues, including NTS, the New York Container Terminal (NYCT), the Pacific Northwest National Laboratory, ASP contractor facilities, and eight operational sites, including five POEs.
- To guide the test operations, DNDO defined a set of Critical Operational Issues that outlined the tests’ technical objectives and provided the baseline to measure demonstrated effectiveness.
- DNDO stated that its request for KDP-3 approval would be based upon completed and documented results of these tests.
- To meet the Secretary’s goal of deploying 225 ASPs by the end of calendar year 2008, Secretarial Certification was scheduled for the end of June 2007.

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## Why the Tests at the Nevada Test Site Were Conducted

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- The purpose of Critical Operational Issue One (COI 1) is to “verify operational effectiveness” of ASPs and determine whether “ASP systems significantly increase operational effectiveness relative to the current generation detection and identification system.”
- In February-March 2007, DNDO conducted a series of tests at NTS, the single focus of which, according to DNDO, was resolution of COI 1.
- DNDO’s NTS test plan, identified three primary test objectives comparing the operational effectiveness of the ASP systems with existing detection and identification systems at current high-volume operational thresholds.

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## Why the Tests at the Nevada Test Site Were Conducted

- Specifically, DNDO sought to determine the ASPs' probability to
  - detect and identify nuclear and radiological threats (probability to detect special nuclear material (SNM) and radiological dispersion device (RDD) threats),
  - discriminate threat and non-threat radionuclides in primary [screening positions], and
  - detect and identify threat radionuclides in the presence of non-threat radionuclides.

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See Appendix I for a detailed description of DNDO Critical Operational Issues.

## How the Tests at the Nevada Test Site Were Conducted

- According to the NTS test plan, dated January 12, 2007, to the greatest extent possible, PVT, ASP, and RIID handheld devices would be operated consistent with approved CBP standard operating procedures.
- Testing at NTS was designed to compare the current system—using PVTs in primary inspections and a PVT and RIID combination in secondary inspections—to other configurations including PVTs in primary and ASPs in secondary, as well as ASPs in both primary and secondary inspection positions.
- DNDO tested three ASPs and four PVTs positioned in one row along the NTS test track.
  - ASP vendors were Thermo, Raytheon, and Canberra.
  - PVT vendors were SAIC, TSA, and Ludlum.
- Trucks carrying various configurations of threat, masking, and shielding materials were driven through each of the portal monitors at 5 miles per hour and then at 2 mph. After driving through the portal monitors, trucks stopped and test personnel used RIIDs to further scan containers.

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## How the Tests at the Nevada Test Site Were Conducted

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- The NTS test plan had two key components:
  - DNDO developed guidelines for basic test operations and procedures, including, test goals and expectations; test tasks and requirements; and roles and responsibilities of personnel involved in the testing, including the ASP contractors.
  - The National Institute of Standards and Technology (NIST) developed test protocols that defined, among other things, how many times a container carrying test materials would be driven through portal monitors in order to obtain statistically relevant results.

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## How the Tests at the Nevada Test Site Were Conducted

- According to the NTS test plan, prior to “formal” collection of the data that would be used to support the resolution of COI 1, DNDO conducted the following tests:

- “Dry Runs”

Purpose: To, among other things, verify ASP systems’ software performance against representative test materials and allow test teams and system contractors to identify and implement software and hardware improvements to ASP systems.

According to the test plan, a notable portion of “dry run” testing was devoted to supporting future test campaigns.

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## How the Tests at the Nevada Test Site Were Conducted

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- “Dress Rehearsals”

Purpose: To observe the ASPs in operation against representative test scenarios and allow the test team to, among other things,

- develop confidence in the reliability of the ASP system so that operators and data analysts would know what to expect and what data to collect during the formal test,
- collect sample test data, and
- determine what errors were likely to occur in the data collection process and eliminate opportunities for error.

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## How the Tests at the Nevada Test Site Were Conducted

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- According to the NTS test plan, in addition to improving ASP performance through dry runs and dress rehearsals conducted prior to “formal” data collection, ASP contractors were also significantly involved in the NTS test processes.
  - Specifically, the NTS test plan stated that “[ASP] contractor involvement was an integral part of the NTS test events to ensure the systems performed as designed for the duration of the test.”
  - Furthermore, ASP contractors were available on site to repair their system at the request of the test director and to provide quality control support of the test data through real time monitoring of available data.
- DNDO stated that PNNL representatives were also on site to provide the same services for the PVT systems.

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## How the Tests at the Nevada Test Site Were Conducted

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- DNDO conducted formal testing in two phases:
  - Phase 1 focused primarily on testing against special nuclear materials, such as plutonium and highly enriched uranium (HEU), and radiological sources, such as medical isotopes.
  - Phase 3 focused on many of the same materials as well as additional radiological sources.
- According to DNDO, only Phase 1 of the 2007 test was designed to support resolution of COI 1 with high statistical confidence and that only data collected during Phase 1 would be included in the final report presented to the Secretary to request ASP certification.
- As recently as August 23, 2007, DNDO told GAO that Phase 3 testing solely sought to provide data for algorithm development which targeted specific and known areas in need of work and to provide data to aid in the development of secondary screening operations and procedures. A broad range of test cases was more important than high statistics.

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## How the Tests at the Nevada Test Site Were Conducted: “Special Testing”

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- On May 30, 2007, following the formal tests and the scoring of their results, DNDO told GAO that it had conducted additional tests that they termed “Special Testing.”
  - The details of the special tests were not explicitly outlined in the NTS test plan.
  - On June 20, 2007, DNDO provided GAO with a test plan document entitled “ASP Special Testing” which described the test sources used but did not say when the tests took place.
  - According to DNDO, special testing was conducted throughout the formal testing process and included 12 combinations of threat, masking, and shielding materials that differed from “dry run,” “dress rehearsal,” and formal tests.
  - DNDO also stated that the tests were “blind,” meaning that neither DNDO nor the ASP vendors knew what sources would be included in the tests.
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## How the Tests at the Nevada Test Site Were Conducted: “Special Testing”

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- According to DNDO, the special tests were recommended by subject matter experts outside the ASP program to address the limitations of the original NTS test plan, including
  - available time and funding resources;
  - special nuclear material sources; and
  - the number of test configurations that could be incorporated in the plan for test configurations, including source isotope and activity, shielding materials and thicknesses, masking materials, vehicle types, and measurement conditions.
- Special testing consisted of 161 test runs, compared with the more than 2,000 runs included in the formal COI 1 data collection tests.



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## **DNDO's Test Methods Raise Concerns Regarding the Reliability of Test Results: Dry Runs and Dress Rehearsals**

- Based on our analysis of DNDO's test plan, the test results, and discussions with experts from four national laboratories, we are concerned that DNDO's test methods may have favorably impacted the performance of the ASPs.
- In the dry runs and dress rehearsals, DNDO conducted many preliminary runs of radiological, nuclear, masking, and shielding materials so that ASP contractors could collect data on the radiation being emitted, and modify their software accordingly.
- Almost all of the materials, and combinations of materials, DNDO used in the formal tests were identical to those that the ASP contractors had specifically set their ASPs to identify from the dry runs and dress rehearsals.



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## **DNDO's Test Methods Raise Concerns Regarding the Reliability of Test Results: Dry Runs and Dress Rehearsals**

- According to our analysis, six of the seven source materials (and all of the masking and shielding materials) used in the tests were shown to the ASP contractors for data collection and ASP modification in the dry runs and dress rehearsals.
- Similarly, according to DNDO, 9 of 16 total configurations used the same combinations used in the dry runs and dress rehearsals.
- One ASP contractor that participated in the tests acknowledged that informing the contractors of the background NORM and masking materials makes it easier for ASPs to identify threat sources.



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## **DNDO's Test Methods Raise Concerns Regarding the Reliability of Test Results: Masking Materials**

- A key component of the NTS tests was to test the ASPs' ability to detect and identify dangerous materials, specifically when that material was masked or "hidden" by benign radioactive materials.
- After reviewing a draft of the NTS test plan, DOE national laboratory officials raised concerns to DNDO in November 2006 that the masking materials DNDO planned to use in its tests did not emit enough radiation to mask the presence of nuclear materials in a container.
- DOE noted that many of the materials that DOE program officials regularly observe passing through international ports emit significantly higher levels of radiation than the masking materials DNDO used for its tests.
- They emphasized that it is important to know what radiation levels and masking agents are able to "fool" the ASPs, and therefore miss the presence of real threat materials.



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## **DNDO's Test Methods Raise Concerns Regarding the Reliability of Test Results: Masking Materials**

- Based on our analysis, the masking materials used at NTS did not sufficiently test potential ASP performance limitations.
- DNDO officials told us that the masking materials used at NTS represented the average emissions seen in the stream of commerce at NYCT.
- The problem with this approach is that, according to data accumulated as part of DOE's program to secure international ports (the Megaports program), 35 percent of the cargo passing through one European port potentially on its way to the United States, had emission levels 5 times greater than the average radiation level for cargo that typically sets off radiation detection alarms. It is this higher-radiation cargo that could mask SNM from the sight of an ASP.
- DNDO officials told us that the masking materials used at NTS were not intended to provide insight into the limits of ASP detection capabilities. However, DNDO's test plan for "ASP Special Testing," states, "The DNDO ASP NTS Test Plan was designed to... measure capabilities and limitations in current ASP systems."



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**DNDO's Test Methods Raise Concerns Regarding the Reliability of Test Results: Complete Set of CBP Standard Procedures Were Not Used**

- After analyzing test results and procedures used at NTS, CBP officials determined that DNDO had not used the complete set of CBP standard operating procedures.
  - In particular, when RIIDs cannot conclusively identify radioactive material detected during primary inspections, CBP procedures require officers to contact DHS's LSS for further assistance.
- DNDO did not include this step in its final tests.
- Furthermore, in May 2007, we met with CBP officials and discussed DNDO's preliminary test results. They noted that the RIIDs results were inconsistent with what they have experienced in the field.



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## **DNDO’s Test Methods Raise Concerns Regarding the Reliability of Test Results: “Special Testing”**

- Although we asked for more detailed documentation regarding the special or blind tests conducted by DNDO, to date, we have not received any information beyond the test plan and we have not seen the results of the tests.
- Based on what DNDO has told us about the special tests, and our own evaluation of the special test plan, we note the following:
  - Because the tests consisted of 161 test runs, compared to the formal tests, which consisted of approximately 2,000, and because DNDO did not consult NIST on the design of the blind tests, we do not know the statistical significance of the results.
  - The tests were not entirely blind because some of the nuclear materials used in the blind tests were also used to calibrate the ASPs on a daily basis.



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## **GAO Concerns Discussed with DNDO Officials and Other Stakeholders**

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- On multiple occasions, GAO, CBP, and DOE have discussed concerns with NTS testing with DNDO.
  - On May 30, 2007, DNDO briefed GAO and CBP on the results of its NTS tests. At that time, we raised several concerns about DNDO's test methods, including many of those that DOE and CBP had raised with us earlier.
  - On June 22, 2007, DNDO conducted another briefing on test results that included GAO, CBP, DOE, and select congressional staff. We again brought to DNDO's attention many of the concerns that subject matter experts had discussed with us.
  - Finally, during a June 26, 2007 meeting with DNDO, DOE, and congressional staff, we again discussed our concerns regarding DNDO's NTS testing.
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## **GAO Concerns Discussed with DNDO Officials and Other Stakeholders**

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- In response to key stakeholder concerns, specifically those posed by DOE, on June 27, 2007, DNDO convened a conference of technical experts to discuss the NTS test results and DNDO's test methods.
- As a result of discussions held during that meeting, subject matter experts agreed that injection studies could help determine the ASPs' ability to detect threats in the presence of highly radioactive masking material. In addition, senior DNDO officials said that further testing could be scheduled, if necessary, to fully satisfy DOE concerns. According to DNDO, however, it was the consensus opinion of the subject matter experts that the results of the injection studies were not necessary for Secretarial Certification.



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## **GAO Concerns Discussed with DNDO Officials and Other Stakeholders**

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- According to a PNNL report submitted to DNDO in December 2006, injection studies are particularly useful for measuring the relative performance of algorithms, but their results should not be construed as a measure of (system) vulnerability. To assess the limits of portal monitors' capabilities, the PNNL report states that actual testing should be conducted using threat objects immersed in containers with various masking agents, shielding, and cargo.



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## **DHS Secretary Chertoff announces an independent review of the ASP testing process**

- On July 20, 2007, DHS Secretary Chertoff notified certain members of the Congress of his plans to convene an independent expert panel to review DNDO's test procedures, test results, associated technology assessments, and cost-benefit analyses to support the final decision to deploy ASPs.
- In making this announcement, Secretary Chertoff noted the national importance of developing highly effective radiation detection and identification capabilities as one of the main reasons for seeking an independent review of DNDO's actions.
- On August 29, 2007, we briefed DNDO, CBP, and DOE officials regarding our audit results. On August 30, 2007, the DHS Undersecretary for Management recommended that the Secretary of Homeland Security delay Secretarial Certification of ASPs for an additional two months.

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## Conclusions

- Effectively detecting and identifying radiological or nuclear threats at U.S. borders and ports of entry is a vital matter of national security and the development of new and advanced technology is critical to U.S. efforts to prevent a potential future attack.
- However, also critical to that effort is a full understanding of the strengths and weaknesses of any next generation radiation detection technology before it is deployed in the field and to know, to the greatest extent possible, when or how that equipment may fail.
- In our view, the tests conducted by DNDI at the Nevada Test Site between February and March 2007 used biased test methods and were not an objective assessment of the ASPs' performance capabilities.
- We believe that DNDI's test methods—specifically, conducting dry runs and dress rehearsals with contractors prior to formal testing—enhanced the performance of the ASPs.

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## Conclusions

- DNDO contends that the NORM packages used at NTS to test the ASPs' ability to detect and identify masked, or hidden, dangerous threat materials, were never intended to provide insight into the limits of ASP detection capabilities.
- By not collaborating with DOE until late in the test planning process, DNDO missed an important opportunity to procure a broader, more representative set of well-vetted and characterized masking materials.
- Instead, DNDO now asserts that it will use "injection studies" or computer simulations with data collected from tests conducted at NYCT to "explore the limits of detecting threats in the stream of commerce."
- However, we believe, and DOE national laboratory experts have reported, that simulated tests of this kind do not sufficiently represent the possible limitations of radiation detection systems and should not be considered a substitute for actual testing.

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## Conclusions

- We believe that the test methods used by DNDO at NTS raise concerns, and that the tests were not a rigorous evaluation of the ASPs' capabilities, but rather a developmental demonstration of ASP performance under controlled conditions.
- Furthermore, as a result of DNDO's test methods and the limits of the tests—including an accelerated schedule to meet secretarial certification deadlines and the limited configurations of special nuclear material sources, masking, and shielding materials used—we believe that the results of the NTS tests do not demonstrate a “significant increase in operational effectiveness” relative to the current generation of detection equipment, and cannot be relied upon to make a full-scale production decision.

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## Scope and Methodology

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- To review DNDO's methods for testing of ASP portal monitors we:
    - Analyzed the agency's test plans and procedures by comparing DNDO practices with generally accepted national standards and DHS guidance for testing the performance of radiation detection equipment. Specifically, we reviewed
      - The Defense Acquisition Guidebook to assess the testing standards developed by DOD;
      - DHS's acquisition regulations, guidelines, and management directives;
      - Open source literature on the appropriate methods to test radiation detection equipment;
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## Scope and Methodology

- Discussed test methods that would have been appropriate for DNDO's ASP testing campaign with experts at DOE, NIST, the private sector, national laboratories, as well as our chief technologist.
- Observed DNDO's tests conducted in 2007 at the Nevada Test Site and New York Container Terminal. In doing so, we viewed the actual execution of DNDO's test plan.
- Analyzed all three ASP vendor contracts to develop, test, and produce ASPs. We reviewed:
  - DNDO's specifications for ASP performance;
  - the timeframes for project completion; and
  - vendor responsibilities during the testing process.



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## Scope and Methodology

- Met with relevant equipment end users and testing experts to obtain their views on the efficacy of DNDO test methods. Specifically, we consulted
  - National laboratory officials to help determine whether DNDO's test methods could produce reliable results; and
  - CBP and DOE program officials, as the main end users of portal monitor equipment, to ascertain whether they considered these tests adequate to support ASP certification and deployment.

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## Scope and Methodology

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- Obtained relevant information on DNDO's test methods from National Institute of Standards and Technology (NIST) officials. Among other things, NIST
    - analyzed many of the test results from the Nevada Test Site; and
    - provided detailed support to DNDO by developing the test protocols to ensure that test results were statistically reliable.
  - Reviewed, with our chief technologist, all of the test results DNDO made available to us, as well as conducted our own secondary analysis of DNDO's test results.
  - We conducted our work from March 2007 to September 2007, in accordance with Generally Accepted Government Auditing Standards (GAGAS).
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**Appendix I: DNDO Critical Operational Issues**

The table below describes each critical operational issue, its purpose, and the location and description of the associated test.

<b>Issue</b>	<b>Purpose</b>	<b>Test Venue</b>	<b>Description</b>
COI 1	Verify operational effectiveness (CBA performance assumptions)	NTS and NYCT	Do the ASP systems significantly increase operational effectiveness relative to the current generation detection and identification system?
COI 2	Demonstrate deployment readiness	Integration Lab at PNNL, and Field Validation	Do the ASP systems meet the necessary integration requirements associated with their deployment in secondary screening and are they suitable for operator use?
COI 3	Demonstrate interoperability	Manufacturer's Site, Integration Lab at PNNL, and Field Validation	Is the ASP system interoperable with users/stakeholders to execute the nuclear detection and reporting mission?
COI 4	Demonstrate system suitability	Manufacturer's Site, Integration Lab at PNNL, and Field Validation	Is the ASP system suitable and deployable within the existing nuclear detection architecture?

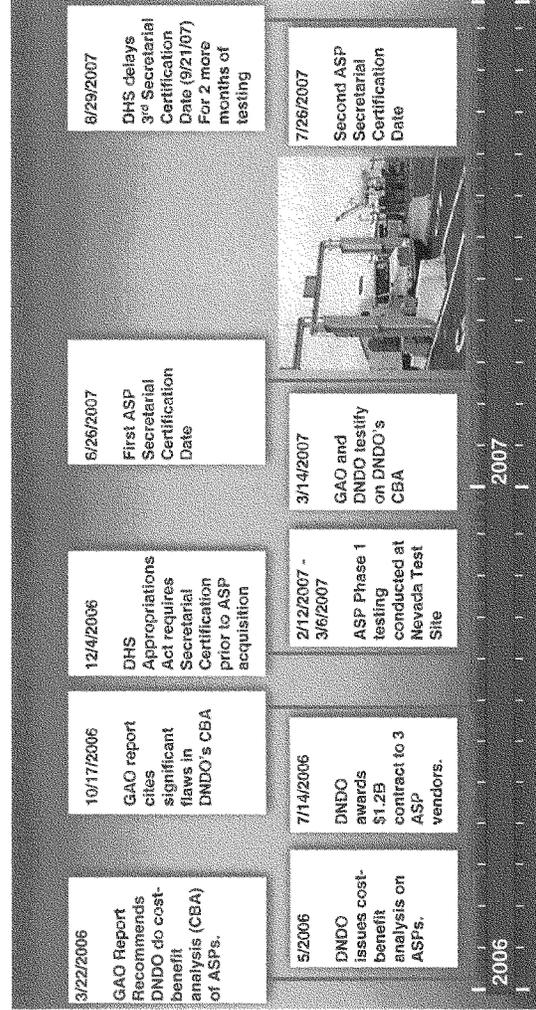
Source: DNDO

**Note: During the course of analyzing the results of completed tests conducted at NTS, DNDO added a fifth critical operational Issue, COI 5, as follows:**

Issue: COI 5  
 Purpose: Demonstrate System Availability  
 Venue: Field Testing  
 Description: Do the ASP systems provide sufficient availability to deploy within the existing nuclear detection architecture?

**EXHIBIT 7**

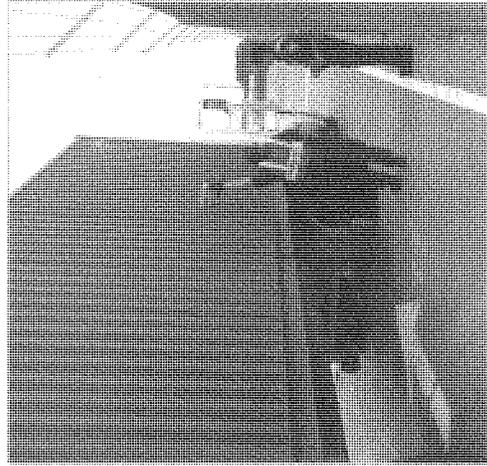
# Timeline for DNDO's ASP Program



Source: GAO.



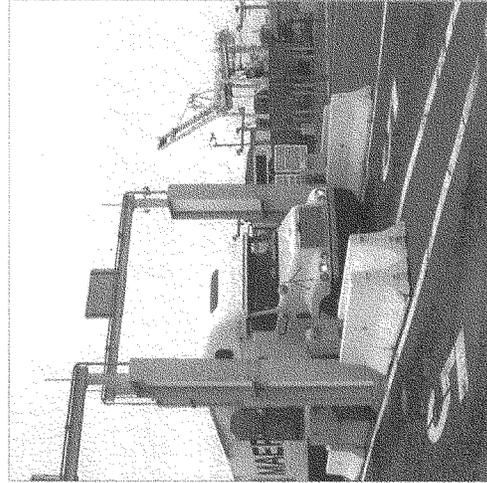
## CBP Officers Conducting a Secondary Inspection with a RIID



Source: GAO.  
CBP officers conducting a secondary inspection with a RIID.  
Seaport at Oakland, CA.



# Truck Passing Through Portal Monitor



Source: GAO.  
Truck passing through a PVT portal monitor.  
Seaport at Los Angeles/Long Beach, CA.

## Several Trucks Entering U.S. Through PVT Portal Monitors



Source: GAO.

Several trucks entering the U.S. through PVT portal monitors.  
Land Border Port of Entry at Blaine, WA.

**EXHIBIT 10**

U.S. Department of Homeland Security  
Domestic Nuclear Detection Office (DNDO)



**Homeland  
Security**

**Test Plan for the Conduct of Data Collection  
at the Nevada Test Site  
in Support of Development of  
Advanced Spectroscopic Portal Systems**

March 30, 2007

**Document Number 200-TPNTS-000030v3.00**

Reviewed by:

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Approved by:

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VAYL S. OXFORD  
Director  
Domestic Nuclear Detection Office

In February and March 2007, DNDO conducted testing at the Nevada Test Site (NTS) to evaluate the current state of performance of the ASP EDM systems. The results from this test campaign will be used by DNDO to request Key Decision Point Three (KDP-3) approval within the acquisition framework of DHS Management Directive 1400.

### ***1.2 Test Purpose***

This NTS test campaign supports development of an ASP secondary screening Concept of Operations (CONOPS) and algorithm development to evaluate instrument performance for sources not previously tested. DNDO will use the results of this data collection to improve (or in some cases implement new) secondary screening CONOPS for ASP systems at POEs. This testing will also yield information to improve ASP detection and identification algorithms against a wide range of isotopes, shielding, and cargo configurations. This phase of testing is not in support of the KDP-3 production decision.

### ***1.3 System Description***

DNDO installed three ASP EDMs (one from each manufacturer), four PVT RPMs, and obtained five GR-135 RIIDs from CBP for use in this campaign. Two of the ASP EDMs (Raytheon and Thermo Fisher) use NaI sensor materials for gamma-ray detection, while the third ASP EDM (Canberra) uses HPGe gamma-ray sensors for the purpose of gamma-ray detection. The four PVT RPMs include one Ludlum system (Model 4500-6000), two SAIC systems (Model RPM8), and one TSA system (Model VM-250AGN) for comparison testing at NTS. These PVT units represent currently deployed systems. Up to five SAIC handheld GR-135 RIIDs will be used for secondary screening scenarios. All of the detection systems use He-3 tubes for the detection of neutrons.

A portal consists of a planar array of Radiation Sensor Panels (RSP), each containing gamma and neutron detectors, a power supply, and an electronics package, mounted on a support structure. In this test, the trucks/cargo containers pass between two upright columns, each of which consists of two RSPs. RSP outputs, consisting of radiation intensity and spectroscopy data, go to a Portal Computer located on the portal itself or to a remote station. This computer analyzes the portal data and characterizes a detected radiation source as either harmless or potentially threatening. It provides the analysis results to the Supervisory Computer, co-located with local operator stations, and actuates an alarm. It is notable that the annunciator on a PVT portal has red, blue, white, and amber lights indicating a neutron alarm, a gamma alarm, "occupancy," and "system error," respectively. ASP EDM units will have six lights: red, blue, orange, white, green, and amber, indicating a neutron alarm, gamma alarm, "innocent alarm," "occupancy," "pass," and "system error," respectively. The ASP LRIP systems will have an upgraded alarm light scheme (See Table 1).

#### ***A.1.4 Trucks***

During testing, there will be periods during which two trucks may be on the ASP test track at the same time. To cover all test scenarios and optimize testing time, testers require tractor-plus-trailer trucking rigs (18-wheelers).

Color placards will mark vehicles for visual tracking of configured trucks during ASP T&E. The placards are solid color 12 inches by 12 inches magnetic markers. The colors correlate to test articles on a status board at the testing trailer and maintained by the test track coordinator.

An autonomous speed measurement and documentation system operates on each truck tractor. This radar system will detect and record the truck speed throughout the test runs. In addition, it will provide the driver with real-time readout of the truck speed. Speed should be within  $\pm 0.5$  mph at 2 mph and  $\pm 1$  mph at 5 mph.

A stake bed truck will be the vehicle used for particular configurations (noted where required in each test case description).

#### ***A.1.5 Software and Hardware Configuration Control***

As a general rule, the TD will not permit changes to software or hardware settings during the test. Any changes required due to repairs, etc., will be approved by the TD and documented via the TOR process. If the TD determines that system changes must be made for testing to proceed, testers will document any software or hardware modifications made, implementing the documentation per the TOR process. The intent is to only fix problems that influence quality data collection.

#### ***A.1.6 Testing Methods***

##### ***A.1.6.1 Sample Size Methodology***

This testing consists of relatively small sample sizes since the data will not support attaining an estimate of probability of detection ( $P_d$ ) with a high confidence level. This test will provide information about the general instrument performance and inputs for algorithm optimization.

Measurement probabilities and confidence levels vary depending on the number of passes and failure rates. When testing involves 10 passes, the maximum possible detection probability (without failures) will be 80% with 90% confidence level. For tests involving 5 passes, the maximum possible detection probability will be 75% for a 68% (1-sigma) confidence level.

##### ***A.1.6.2 Method 1 (Pass through mode)***

Testers will transport radioactive sources through the portal monitors' detection zones on a vehicle at a constant speed. Each test case table identifies the number of passes, the pass-through speed, and the truck configuration.

Valid Run Criteria: Collect at least the specified number of valid passes for all ASP and PVT systems during a given test case. Collect tablet data for each occupancy. Transfer occupancy files for each run from the supervisory computer to the NSTec database. See the ASP NTS DQMP and Analysis Plan for more detail.

**EXHIBIT 11**

# *Domestic Nuclear Detection Office (DNDO)*

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## *ASP Test Campaign*

Responding to the GAO Statement of Facts

07 September 2007

*Domestic Nuclear Detection Office  
Department of Homeland Security*



## *How Radiation Portal Monitors Work*

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- Background Signals
- Threshold Settings
- Alarm Signals
- Suppression of Signals
- Added Information in Spectroscopic Systems
- The Role of Algorithms

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## ***Test Methodology***

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- Five Critical Operational Issues developed with the end-user (CBP)
- Test plan developed with large community of technical and operational subject matter experts
- Test executed to plan; Deviations from plan noted

## ***Purpose and Evolution of NTS Testing***

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- Phase 1
  - To inform Critical Operational Issue 1
- Phase 3
  - Not originally intended for use in Secretary's Certification
  - Revised this decision; Reported to GAO on 30 May 2007
- "Blind" or "Special" test
  - To examine the ASP NTS test plan for vulnerabilities in either ASP systems performance or DNDO test processes



## *Extensive Breadth & Depth of the Test Campaign*

Test Event	Scope of NTS Testing				ASP Vendor Totals			Event Tests	NTS Total
	Number of Test Cases	Number of Sources	Systems Tested	Other Tests	Canberra	Raytheon	Thermo-Fisher		
NTS Phase I	16	9	7	Daily Calibration	1,401	1,399	1,397	Of 3 ASPs Of 7 Vendors 4197	
NTS Phase III	51	17	7	Daily Calibration	~650	~650	~650	2000 3600	
NTS "Blind"	14				149	149	146	444	6,641
								1029	14,286



## *Extensive Breadth & Depth of the Test Campaign*

*Grand total of trials conducted at NYCT is approximately 80,057*



## ***Breadth and Depth of ASP Test Campaign SMEs***

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- **Technical Subject Matter Experts**
  - NIST scientist and statisticians
    - Test design, statistical analysis, reporting
  - DHS and DOE National Lab scientists from SNL, PNNL, LANL, ORNL, BNL, EML, NSTec
    - Modeling, algorithms, test design, test execution, analysis, injection studies
  - DNDO staff & System Engineering Support
    - Test execution, COI design, analysis, reporting
- **Operational Subject Matter Experts**
  - Customs and Border Patrol – Office of Field Operations
    - CONOPS, SOP's, field operations, COI Design
  - Customs and Border Patrol - Laboratory and Scientific Services
    - Field support, spectral analysis



# ***GAO & DNDO Differences – RIID Test Data***

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## **GAO Statements of Fact:**

- RIIDs have limited identification abilities and in 2006 were estimated, under certain conditions, to effectively identify radioactive isotopes about X% of the time.
- ... we met with CBP officials and discussed DNDO's preliminary test results. They noted that the RIIDs results were inconsistent with what they have experienced in the field.
- In contrast, during tests conducted by DNDO earlier in 2007, RIIDs were able to correctly identify X% of the sources presented.

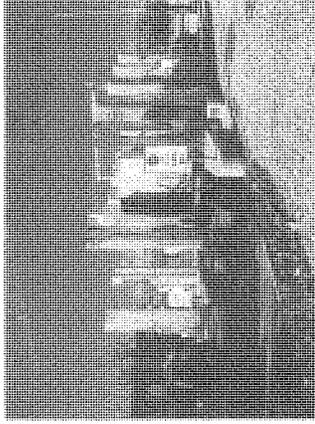
## **▪ DNDO Rebuttal:**

- It is inadvisable to compare and contrast test results without context.
- Four different test campaigns are compared here without any reference to the test sources, source configurations, geometries, scoring logic, or if the tests were conducted in the field or in a controlled environment.
- In comparison to the other referenced controlled tests, the ASP test campaign used sources, configurations and geometries that are more difficult to detect and identify, and used a far more conservative scoring logic.



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# *Stream-of-Commerce Testing at NYCT*



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## ▪ Two primary exit lanes

Each lane: 3 ASP systems Raytheon, Thermo-Electron, Canberra Industries, and SAIC Model RPM8 PVT

## Secondary Screening

3 ASP systems (Canberra, Raytheon, Thermo) and one PVT (SAIC RPM8); GR-135 RIID



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## ***GAO Concerns***

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- Use of dry runs and dress rehearsals
- Development and execution of Blind Tests
- Selection of test articles
- Involvement of contractors in test campaign
- Evaluation of the LSS protocol

Other Technical Issues

## ***Addressing Technical Issues***

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Conducted Technical Summit (27 June 2007)

- Attendees
  - Technical subject matter experts from DOE, PNNL, SNL, ORNL, (LANL), DNDO, SRS
  - Operational subject matter experts from CBP and DOE
  - DHS Policy and Legislative Affairs staff
  - Congressional Staffers
  - GAO
- Concerns
  - Selection of NORM
  - Addressing the effects of highly radioactive NORM
  - Use and applicability of injection Studies
- Outcome
  - Consensus findings and path forward

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## ***GAO & DNDO Differences – Injection Studies***

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### **GAO Statement of Fact:**

- According to a PNNL report... (the results of) injection studies should not be construed as a measure of (system) vulnerability. To assess the limits of portal monitors' capabilities... actual testing should be conducted using threat objects immersed in containers with various masking agents, shielding, and cargo.

### **DNDO Rebuttal:**

- The report cautions this, stating that this is **not true** for studies are based on empirically validated data against threat materials and/or a benign vehicle population that is representative of the stream of commerce.
- Two of the contributing authors of this report were among the scientists at the Technical Summit (June 2007), where the consensus of these experts was that since the present injection studies will be based on NTS target measurements coupled with measurements at LANL, and a large stream of commerce data set gathered at NYCT, they will have sufficient fidelity and defensibility to provide results for credible statements about system vulnerabilities.
- On 29 August 2007, GAO agreed with this statement.



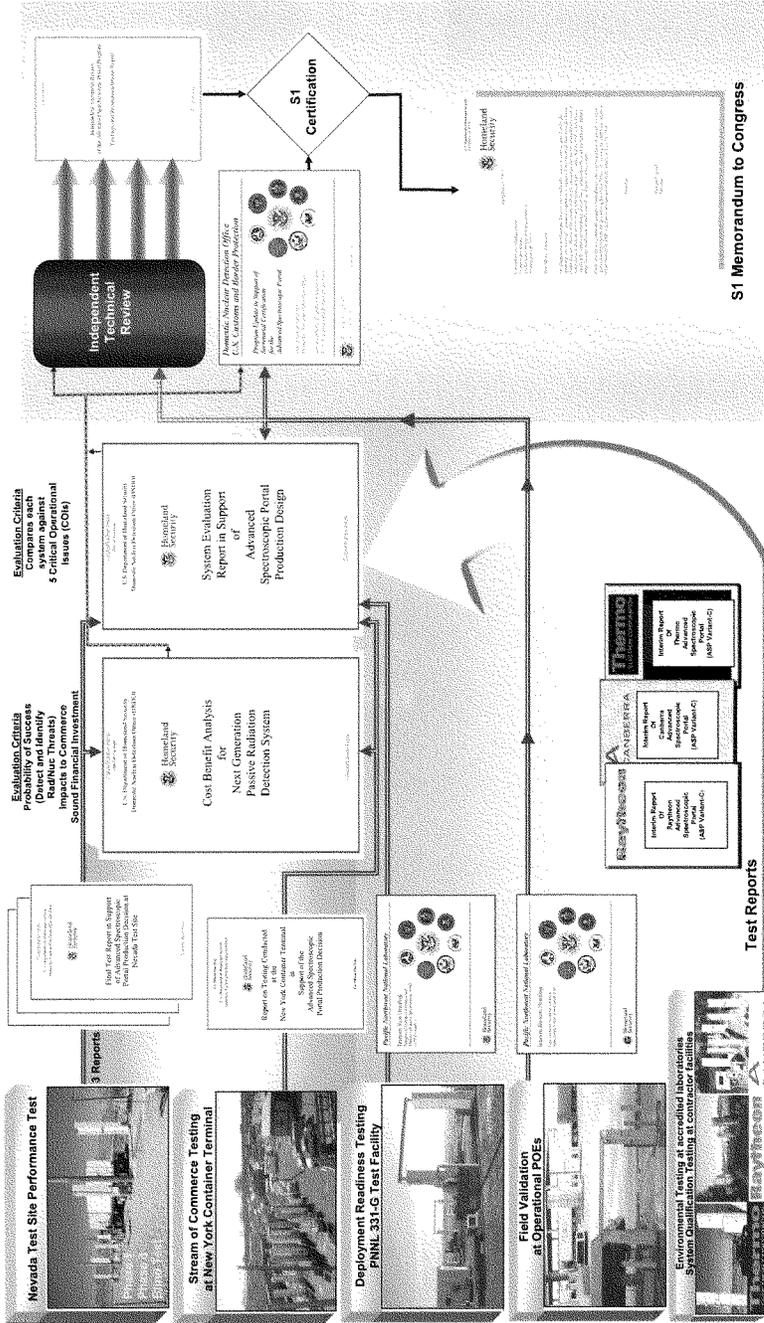
# Technical Summit Outcome

	<u>WHAT</u>	<u>HOW</u>	<u>WHERE</u>	<u>WHEN</u>
1	Benchmark bare SNM against radiation sensor panel for model validation	Test	NTS/DAF	Before inj studies
2	Get 100 ms map data for SNM	Test		Before inj studies
3	Determine ASP sensitivity break point in presence of NORM	Inj Studies		Before primary deployment
4	Operational envelope (RMA data)	OT&E	Field	Continuing
5	Determine how HEU and Pu NTS configs relate to DOE guidance document	Analysis		in progress
6	Rerun GR135 data through LSS; update results to show LSS calls	Analysis	LSS	in progress
7	Rerun ASP NYCT data; update referral rate to include industrial/medical sources	Analysis		Before S1 decision
8	Response against a wider variety of NORM	Inj Studies		Before primary deployment
9	Inject LANL HEU into additional NORMs	Inj Studies		Before primary deployment
10	SLD operational variations Speed Spacing Different NORM population Environmental test spread Abnormally high background	Test		Before SLD consideration for prim
11	Clarify HEU shielding scenario in report	EPQT		Before S1 decision
12	GR-135 data presentation	modify report		Before S1 decision



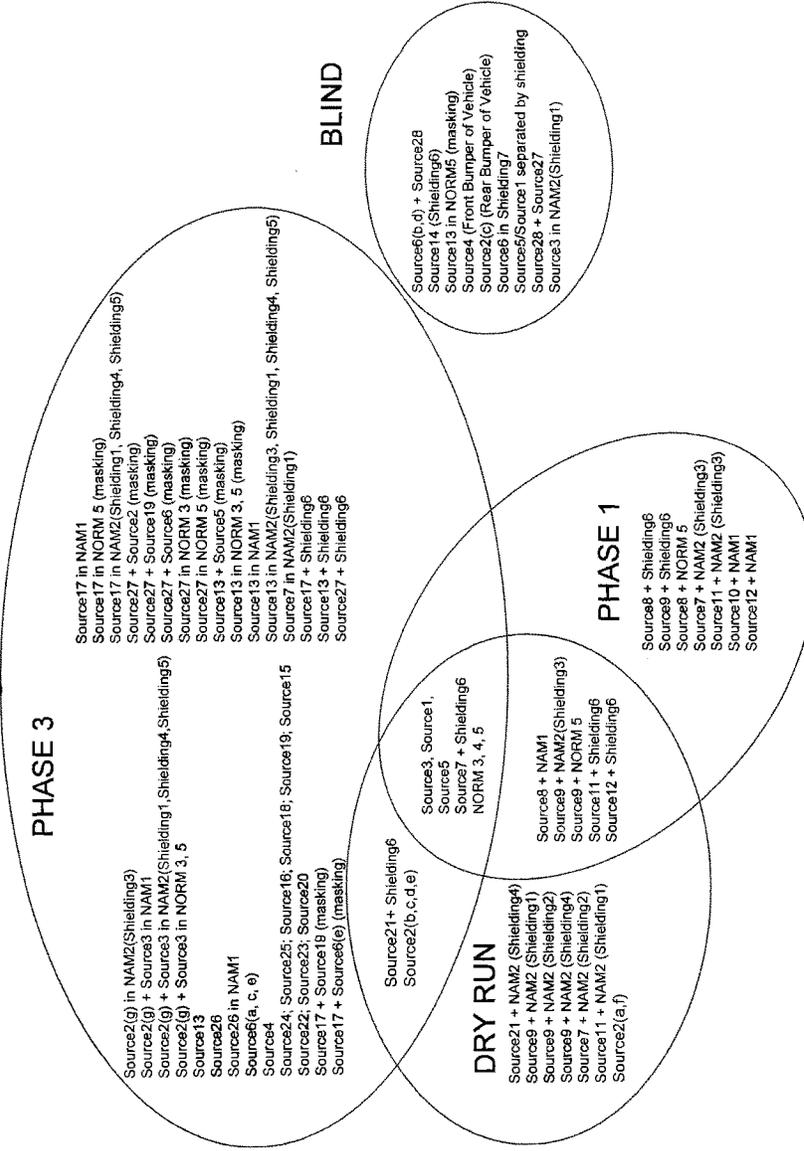
**EXHIBIT 13**

# Path Forward to Secretarial Certification of ASP



**EXHIBIT 14**

**Source Configurations for NTS Test Cases**



**EXHIBIT 15**

## ASP Review Team

<b>Name</b>	<b>Affiliation</b>
John Higbee	Dean, Defense Systems Management College – School of Program Managers
Dr. Peter E. Vanier	Brookhaven National Laboratory
Dr. James Lemley	DTRA via Interagency Personnel Agreement with Brookhaven National Laboratory
Dr. Michael C. Wright	Oak Ridge National Laboratory
Dr. Claus-Peter Ziock	Oak Ridge National Laboratory
Dr. Dennis Slaughter	Lawrence Livermore National Laboratory
Dr. Alan Berman	Center for Naval Analysis & Applied Research Laboratory Penn State University

**EXHIBIT 16**

Peter E. Vanier, Ph.D.

Current Job Title: Physicist

Current Employer: Brookhaven National Laboratory

**Education**

- Ph.D. (Physics) Syracuse University, 1976
- M.S. (Materials Science) Syracuse University, 1969
- B.A. (Natural Sciences) Cambridge University, 1967

**Experience relevant to DNDO Portal Review**

- Developed software and hardware for a double-scatter neutron spectrometer, which is sensitive to the direction of fast neutrons. The method is based on proton recoil in two sets of plastic scintillators, and can be scaled up to large areas for greater sensitivity.
- Built coded-aperture camera and developed software for imaging with thermal neutrons, based on compressed  $^3\text{He}$  position-sensitive wire chamber. Performed field testing at INEL, SRNL, LLNL including active interrogation of fissionable materials surrounded by moderating materials.
- Performed measurements of gamma-ray spectral signatures from all types of nuclear weapons and SNM components in US enduring stockpile using high purity germanium detectors.
- Member of DNDO Regional Reachback North-East team of spectroscopy analysts. Responsible for analyzing spectra (mostly NaI) sent to DNDO Joint Analysis center by state and local law enforcement with 30 minute response time.
- Member of Joint Coordinating Committee for the bilateral US-Russian Weapons Safety and Security Agreement (WSSX). Initiated and managed contract with All-Russian Institute of Automatics to construct a measurement system based on HPGe and a very simple custom-built computer to provide confirmation of SNM components by template matching without revealing sensitive information. The Russian design was based on the Controlled Intrusiveness Verification Technology (CIVET) system developed at BNL.

James R. Lemley, PhD

Current Job Title: Physical Scientist, Nuclear Technology Division, Defense Threat Reduction Agency, Ft Belvoir, VA

Current Employer: DTRA via Interagency Personnel Agreement with Brookhaven National Laboratory

Education:

- Oberlin College, B.A., 1963, Chemistry Major
- University of California, Berkeley, Ph.D., 1968, Physical Chemistry
- Los Alamos National Laboratory, Post Doctoral Appointment, 1969-1971, Physics Division

Experience Relevant to the DNDO Portal Review:

*International and Domestic Safeguards and Security*

- Domestic Safeguards for Nuclear Weapons: developed and demonstrated methodology for use of high-resolution solid-state gamma-ray detectors to confirm uranium and plutonium components in nuclear weapons; measured high-resolution spectra of nuclear weapons
- Developed domestic and international safeguards systems for advanced and conventional isotope-separation processes for uranium, plutonium and hydrogen (heavy water)
- Cooperative Threat Reduction Program: team member in programs to eliminate weapon-usable materials and improve safeguards and security for nuclear materials at Russian and former Soviet Union nuclear facilities; visited many Russian nuclear facilities
- U.S. Mission to IAEA, Vienna, Austria: Liaison Officer, U.S. Support Program for IAEA Safeguards
- Neutron cross-section measurements using underground nuclear explosion as neutron source
- Developed cryogenic, polarized nuclear targets for study of subthreshold fission resonances using nuclear-explosion and accelerator-based neutron sources

*Arms Control and Nonproliferation*

- Developed methodology and technology (information barrier concept) for use of sensitive measurements on nuclear weapons to achieve high-confidence verification of arms-control agreements with acceptably low risk for unintentional release of sensitive information

*Assessment Methodology and Experience*

- Radiological & Chemical Security: site-team leader, security surveys for radiological materials, toxic chemicals in NY/NJ; study addressed source material for radiation dispersal
- Counter Intelligence: developed methodology and analyzed basic and applied BNL research programs for national security relevance
- Member of FAA Blue Ribbon Panel to evaluate airport security and automated vulnerability assessment tools to be used by airport staff
- Safeguards and Security Oversight: served on safeguards/security site survey teams for DOE Office of Security Evaluation, Office of Safeguards and Security, and Defense Programs

Acquisition Certification and Training:

- Certification as Contract Officer's Technical Representative

Dr. Michael C. Wright is Leader of the Nuclear Material Detection and Characterization Group at Oak Ridge National Laboratory, a group consisting of more than thirty scientists, engineers, technicians, and students working in a wide range of topics in radiation detection and measurement, with a particular focus on work with Special Nuclear Materials. He has more than 25 years experience in radiation detection and measurement, instrument system development, and systems integration. He was the ORNL representative to the DHS S&T Passive Needs and Requirements Study group, and was the Rad/Nuc subject matter expert on the DHS Regional Technology Integration Initiative team that studied the Memphis urban area. He is currently a member the DHS Regional Reachback team of spectrum analysts for the southeast region. He has led a variety of projects to upgrade neutron scattering instrumentation at the High Flux Isotope Reactor. He was project manager of the Materials Microcharacterization Collaboratory, a 5-year, \$10M pilot project electronically linking researchers at ORNL, ANL, LBNL, NIST, and the University of Illinois. Before joining ORNL, Wright worked for 10 years at Atom Sciences, a small company striving to become a commercial supplier of products and services of a novel method for ultrasensitive trace element analysis and detection. Dr. Wright holds a Ph.D. in nuclear physics from Duke University.

Klaus-Peter Ziock, PhD

Current Job Title: Distinguished Member of the Research and Development Staff, Oak Ridge National Laboratory, Oak Ridge, TN

Current Employer: Oak Ridge National Laboratory

Education:

- University of Virginia, B.A., 1978, Physics and Chemistry
- Stanford University, M.S., 1981, Physics
- Stanford University, PhD, 1985, Physics
- California Institute of Technology, Post Doctoral Researcher in Physics, LIGO project, 1985.
- Lawrence Livermore National Laboratory, Post Doctoral Researcher, V-Division, Physics Directorate, 1985 to 1988

Experience Relevant to the DNDO Portal Review:

Over 20-years experience in developing and applying radiation detectors to arms control and scientific applications.

*Arms Control and Nonproliferation*

- Principal Investigator of the Roadside Tracker project that is developing a rapid-deployment roadside portal monitor capable of simultaneously monitoring several lanes of traffic. Radiation signatures are uniquely linked to individual vehicles by combining visible and gamma-radiation imaging.
- Scientific leader of the Large-Area Imager Search Instrument that allows one to increase the search range of vehicle-mounted radiation detectors over 5-fold. This R&D 100 award-winning instrument overcomes spatial variations in the background radiation field using imaging.
- Developed the seminal theory on how systematic noise limits detection sensitivity in searches for contraband radioactive material and how this can be overcome using coded-aperture-based radiation imaging. The basic theory applies both to moving search instruments and in fixed (portal) applications.
- Originated the concept of pixel-by-pixel spectral evaluation to improve Non-Destructive Analysis in diagnostics.
- Principal Investigator of a project to develop a germanium-based, gamma-ray imager for use in arms-control.
- Principal Investigator of the Gamma-Ray Imaging Spectrometer, the seminal gamma-ray imager developed for arms-control applications. The instrument has been successfully demonstrated for treaty verification, transparency, safeguards and emergency response (diagnostics) applications.

*International and Domestic Safeguards and Security*

- Co-Principal Investigator of a project to look at the use of radiation imaging for safeguards of spent nuclear fuel dry storage casks.
- LLNL Technical Representative (contract monitor) on a Lab-to-Lab project in the MPC&A program with C70 to develop a large-volume active well coincidence counter.

*Review and Community Participation*

- Associate Editor, IEEE Transactions on Nuclear Instruments

- Participant of the DTRA "Through Barrier Imaging Workshop" and contributor to final report on findings on the use of passive radiation imaging.
- Member of an IAEA panel of technical experts to look at safeguards issues for spent nuclear fuel.
- Reviewer for DHS SBIR proposals.
- Reviewer of proposals for various DOE NA offices.

### Dennis Slaughter

Dennis received his PhD in Nuclear Chemistry from UC Berkeley in 1972. His thesis was a study of fission product  $\beta$ -delayed high energy  $\gamma$ -ray emission. Simultaneous with his thesis research he worked for V. Adm Hyman G. Rickover training engineering officers for the nuclear navy. Following that he joined LLNL doing research in low energy nuclear physics and its applications to magnetically confined and inertially confined fusion experiments. He also maintained an active interest in nucleosynthesis and nuclear reactions that are important in stellar evolution and led the LLNL low energy nuclear physics program that established and exploited the nuclear weapons program interest in new radioactive ion beam accelerators. During the course of these studies he led the team that developed LLNL's first high intensity short pulse laser facility generating 100 mJ pulses of laser light in  $T \sim 100$  femtoseconds in order study stellar-like plasmas at very high temperature and near-solid density. Along the way he discovered that the most important characteristics of this laser were important in medical applications due to the short pulse and in remote sensing in the atmosphere as a result of its broad bandwidth. He published papers in laser medicine and global climate change research. Subsequently he became interested in high power accelerator development including the 10 kA 50 MeV electron accelerator at LLNL, ATA, and the 160 MW proton beam in APT (  $I = 0.1$  A average CW current at  $E = 1.6$  GeV energy) at LANL. He was an associate project leader on this activity that peaked at 200 MS/y level. Later he was became leader of the 100 MeV electron accelerator facility at LLNL and led the program to develop a high intensity tunable monoenergetic  $\gamma$ -ray source for basic physics and homeland security applications.

The events of 9/11 changed all this and he, along with his low energy nuclear physics group at LLNL dedicated themselves to homeland security issues. Their most important contributions have been in the area of active neutron interrogation to detect SNM well concealed in the most challenging cargo threats. They successfully developed a 7 MeV neutron interrogation system utilizing the high-energy fission product  $\gamma$ -radiation he studied in his thesis. This approach has proven, in the laboratory, capable of detecting small amounts of SNM ( $m \sim 1$  kg) buried in the most challenging cargos, i.e. hydrocarbons at high density and thickness. He also co-led the DHS funded Active Interrogation Study Group that evaluated 33 active interrogation technologies and compared their relative performance quantitatively. Finally, he was asked to develop a program to experimentally compare the SNM detection performance of active interrogation systems and to recommend ground rules for system evaluations in realistic field settings at the Nevada Test Site evaluation facility. All of these efforts are described in approximately 100 papers published in refereed journals and/or laboratory reports.

**Alan Berman** received his Ph.D. in Physics from Columbia University in 1952. From 1952 until 1967 he worked at, and served as director of, Columbia University's Hudson Laboratories. He served as Director of Research of the Naval Research Laboratory from 1967 until 1982. From 1982 until 1987 he was Dean of the Rosenstiel School Marine and Atmospheric Sciences of the University of Miami. From 1987 until 1995 he was a Fellow, of The Center for Naval Analyses (CNA) where he had responsibility for the analysis of: the Navy's R&D programs, National space operation capabilities, information operations, and C4ISR programs. In 1995 he became a part time employee of both CNA and The Applied Research Laboratory Pennsylvania State University.

He has served on numerous studies and panels of The Defense Science Board, The Naval Research Advisory Committee, and The Naval Studies Board of the National Academy of Sciences. Currently he serves as a member of the oversight board of the Jefferson Laboratory of the Department of Energy and he is a member of the standing science advisory committee of the Joint IED Defeat Organization (JIEDDO)

Updated: 14 September 2007

**Name** George E Thompson  
**Clearance** TS  
**Job Title** Manager  
**Division** Homeland Security Institute, Program Division

**Experience overview** Mr. Thompson has over 28 years experience in developing and applying analysis methods to help U.S. Government client organizations manage resources efficiently and effectively. These efforts have included requirements analysis, program evaluation, life-cycle costing, and cost-effectiveness analysis. His experience covers a broad range of subject areas and systems, including: facilities, testing, training, communication-electronics systems, airlift and special air missions, personnel recovery, special operations, and chemical / biological weapons.

#### **Employment History- Non-Military**

<u>Dates</u>	<u>Employer</u>	<u>Title</u>
04/04 –	Homeland Security Institute	Deputy Director, Programs
		<ul style="list-style-type: none"> <li>– Responsible for developing and applying the Institute’s capabilities in such areas as strategic planning, mission analysis, program assessment, cost and cost-effectiveness analysis, and economic analysis. Made substantive analytical contributions to key HSI projects in risk management (development of models and methodologies for risk-informed homeland security planning and program development/assessment).</li> </ul>
10/92 – 4/04	ANSER	Principal OR Analyst
		<ul style="list-style-type: none"> <li>– Lead analyst for a study that considered how the capabilities of the V-22 could be used to enhance U.S. Homeland Security. Developed and analyzed War-on-Terror scenarios (including both overseas force projection and domestic response) and quantified V-22 impacts in the areas of responsiveness, effectiveness, risk, force protection, and support requirements. Briefed findings to members of Congress, the media, and senior military leadership.</li> <li>– Lead technical analyst supporting the Defense Advanced Research Projects Agency’s (DARPA’s) Immune Building Program. Developed metrics and analysis approaches to help determine optimal strategies for protecting building occupants from exposure to chemical and/or biological warfare agents. Evaluated alternative protection and decontamination technologies for applicability to this program. Conducted independent analysis of sensor requirements. Formulated top-level cost-effectiveness comparisons.</li> <li>– Led a team that provided on-call technical support to the Director of DARPA’s Special Projects Office in a variety of topic areas, including: deposition and re-aerosolization of biological agents; advanced technologies for chemical / biological agent detection; standards for exposure to time-varying concentrations of chemical agents; and analysis of fatalities and incidents throughout the course of Operation Iraqi Freedom.</li> <li>– Analyzed Aerospace Command and Control &amp; Intelligence, Surveillance and Reconnaissance Center (AC2ISRC) functions and developed a draft plan for</li> </ul>

transitioning selected functions from AC2ISRC/A-2X (Bolling AFB, DC) to the parent organization at Langley AFB, VA.

- Provided technical direction for ANSER's modeling and simulation support to an ACC-led Analysis of Alternatives (AoA) for Combat Search and Rescue replacement aircraft (HH-60 replacement).
- Lead analyst for a Mission Area Analysis / Business Process Reengineering (MAA/BPR) conducted for the Defense Prisoner of War / Missing Persons Office (DPMO). Developed analytical framework for analyzing current DOD capabilities in personnel recovery and accounting / remains recovery, and identifying changes needed to effect an integrated recovery architecture. Also performed program control and management functions (monitoring of cost, schedule, status; coordination of staff assignments).
- Analyzed operational effectiveness of candidate replacements for the EC-130E Commando Solo Psychological Operations (PSYOP) aircraft, as part of an Analysis of Alternatives (AoA) conducted for the Air Force Special Operations Command (AFSOC). Drafted report and briefing sections on operational effectiveness and cost-effectiveness.
- Developed and prototyped a software decision-support tool for HQ Air Combat Command (ACC) programming and budgeting processes, based on ANSER's generic Resource-to-Objective Allocation Model (ROAM). Directed the development of a customized interface.
- Led an ANSER team working under contract to the UK Defence Evaluation and Research Agency (DERA) to analyze the comparative effectiveness of the H-60 and V-22 in conducting combat rescue. Updated an earlier computer model and enhanced it to include the survivability of the rescue aircraft itself as a key factor influencing mission effectiveness. Supervised preparation of input data, analyzed model runs, and drafted final report and briefing.
- Member of an ANSER team that conducted a study on Preventing the Entry of Nuclear, Biological, and Chemical (NBC) Weapons and Materials into the United States. Developed analysis plan and study framework; integrated contributions of several authors and prepared the final report and briefing. Briefed results to Deputy Secretary of Defense for Research and Engineering (DDR&E).
- Led a Congressionally-directed study of AC-130 gunship requirements on behalf of ASD/SO-LIC. Developed and conducted rapid-reaction wargames designed to elicit expert input from planners and operators. Analyzed gunship capabilities, deployment statistics, and force structure. Led a follow-on study to compare the cost-effectiveness of adding gunships to the Air National Guard, vice active Air Force, fleet.
- Member of a study team that analyzed the role of air power in conducting attack operations against adversaries' Nuclear, Biological, and Chemical weapons capabilities. Helped develop study plan; developed data capture plan and built computer-based tools for near-real time data reduction of textual and interval-level data.
- Supported the development of methodologies to help the Air Force develop an Extended Planning Annex based on Mission Area Plan inputs from multiple Major Commands.
- Researched and drafted a planning aid designed to help the Air Force Surgeon General (AF/SG) staff develop modernization strategies based on mission support planning efforts. Developed concepts for evaluating AF/SG personnel training strategies, and

- tested those concepts using a prototype application derived from ANSER's generic Resource-to-Objective Allocation Model (ROAM).
- Led an Independent Research and Development (IR&D) project to revitalize ANSER's generic resource allocation modeling capability. Redesigned the logic for the Resource-to-Objective Allocation Model (ROAM) allocation engine, and developed pseudo-code. Designed an enhanced diagnostic capability and developed conventions for the allowable use of operators vs rule levels. Provided overall guidance for the programming and testing efforts.
  - Member of a study team that analyzed cost and operational implications of countering passive detection threats to special operations aircraft. Developed measures of merit and operational worth (from both aircrew and ground team perspectives) associated with aircraft detection avoidance. Devised interval estimation techniques to establish quantitative relationships between aircraft detection, aircraft attrition, and fleet sortie generation capability.
  - Drafted Air Force recommendations designed to influence the development of joint-Service doctrine for Information Operations (IO).
  - Supported the Joint Staff, Strategy and Policy Division (J5-SP) in planning and conducting a SECDEF-directed Counterproliferation (CP) Missions and Functions Study. Contributed to development of study plan and essential elements of analysis, participated in working group meetings, and documented findings. Integrated contributions from multiple study authors and drafted portions of the CP Missions and Functions Study Report, March 1995, which was approved by the CJCS, accepted by the SECDEF, and promulgated to the Services and Unified Commands.
  - Member of a four-person test team for a multi-user version of ANSER's COMPASS software (forerunner of the Suspense Control and Tracking System (SCATS)). Tested 28 software modules. Identified, documented, and re-tested approximately 50 discrepancies. Recommended changes to COMPASS functionality and documentation.
  - Helped plan and conduct a Milestone I Cost and Operational Effectiveness Analysis (COEA) for the Air Force Advanced Multi-Mission Vertical Lift Aircraft (MV-X) in the Special Operations Airlift mission. This analysis also served as a Milestone III COEA for the CV-22 aircraft. Led the subset of the study team that analyzed operational effectiveness.

10/89-10/92 ANSER

Manager, Spec Warfare Div

- Coordinated work plans and schedules, reviewed and approved contract deliverables and tracked costs for projects totaling approximately \$3.0 million per year.
- Evaluated performance, mentored, and trained approximately 30 employees in the division.
- Oversaw activities of 25-person ANSER field office in Tampa, FL. Coordinated with other elements of ANSER staff regarding use of company resources.
- Developed analysis methodology, supporting models/simulations, and databases for the U.S. Special Operations Command (USSOCOM) Joint Mission Analysis (JMA), a comprehensive assessment of requirements and capabilities associated with U.S. Special Operations Forces (SOF). Developed methodology for analyzing supporting capabilities, including Logistics and C2.

- Applied operations research techniques (e.g., unconstrained non-linear optimization) to SOF force structure analyses, and wrote computer programs to implement these techniques. Designed and developed a spreadsheet-based tool for quick, aggregate analysis of tradeoffs in special operations force structure, apportionment, availability, component, and mission priority.
- Developed functional requirements for ANSER's Integrated Cost and Need (ICAN) software, a flexible and efficient automated strategic planning tool, and led the software development and maintenance efforts.
- Led the analysis effort to translate SOF resource allocation decisions into quantifiable estimates of future operational capabilities.

10/84-10/89 ANSER

Senior OR Analyst

- Designed and developed spreadsheet applications to import selected data from the Air Force's financial management system (ABIDES) and analyze SOF aircraft programs and budgets.
- Supported a comprehensive restructuring of AF SOF aircraft programs by compiling program cost data, augmenting these data through economic and life cycle cost analysis, and documenting the results for use in the PPBS process. The products of this effort were used, intact, as the basis for the implementing Program Budget Directive (PBD).
- Designed and programmed the Executive Level SOF [Aircraft Operations] Model (ELSM) for analyzing infiltration/exfiltration capabilities. The model accounted for the relationship between deployment size, availability, and mission effectiveness by using a binomial representation of operational readiness.
- Designed and programmed a computer model for analyzing combat rescue effectiveness, based on an exponential representation of survival probabilities.
- Applied knowledge of computer programming to maintain and upgrade a model of AF airlift capabilities and costs, the Airlift Options Evaluation Model (AOEM). Led a statistical analysis to validate model inputs using the on-line Maintenance and Operational Data Access System (MODAS).
- Supervised a team of analysts and programmers that adapted ANSER's PC-based Aerodynamic Aircraft Mission Performance System (AAMPS) model to handle the tilt-rotor V-22 and applied this model to analyze V-22 performance in mission profiles other than those contained in the system specification.
- Member of a team that prepared, for AF/LE-RD, an "R&M 2000 Guidebook," which presented procedures and processes for institutionalizing Force reliability and maintainability improvements across the Air Force and throughout the aerospace industry. Drafted text for a chapter on "R&M Preservation".
- Led a project team studying the feasibility of a concept for replacing two Air Force pilot trainers with a single aircraft type.
- Analyzed concepts for integrating the Air Force's Precision Location Strike System (PLSS) with the Global Positioning System (GPS), and conducted an independent analysis of PLSS test results. Designed and implemented an algorithm to evaluate PLSS coverage as a function of the numbers and locations of navigation beacons; results were used to develop definition of IOC (Initial Operational Capability). Provided management support to include tracking of PLSS funding, schedule and status;

preparing responses to requests for information; writing background papers; and updating program documentation.

10/83–12/83 George Mason University (concurrent) Instructor

- Taught an undergraduate-level course designed to help students outside the mathematics / statistics departments understand how to intelligently apply computer statistical packages (e.g., SAS, SPSS). Developed classroom lectures, homework sets, and tests; provided one-on-one instruction.

01/79-10/84 ANSER OR Analyst

- Analyzed capabilities of C-140 replacement aircraft candidates by representing travel demands and unscheduled maintenance as Poisson arrival processes in a Markov Chain model, and applying established results from queueing theory.
- Supported the management of a complex modification program for installing secure, jam-resistant communications across the tactical air force fleet. Compiled cost and schedule data, and developed methods to assess the impact of budget and schedule variations on the modification program.
- Served on the Logistics and Engineering Panel for the Strategic Defense Architecture 2000 study, Phase I, which produced an extended annex to the North American Air Defense Master Plan.
- Developed innovative analysis techniques (control-theory representation and adjoint operator theory) for studying the interaction between mobility force capabilities and operational effectiveness of combat forces.
- Analyzed requirements for development of Air Force unique Chemical Warfare Defense Equipment (CWDE). Helped translate these requirements into specific direction for the Air Force CWDE program by formalizing program review and task prioritization procedures.
- Conducted an operational and economic analysis of candidates to replace the T-37 primary trainer.
- Provided technical inputs to Air Force program management documents for numerous armament and avionics development programs.
- Identified, compiled, and examined interrelationships among issues concerning the proposed C-X airlift, as raised during Congressional budget hearings. The resulting compendium was used by Air Force staff to prepare testimony for subsequent budget hearings.
- Member of project team that analyzed costs and mission impacts associated with the proposed relocation of the Electromagnetic Compatibility Analysis Center. Analysis was provided to the Assistant Secretary of the Air Force for Manpower Reserve Affairs and Installations and cited in the Air Force and OSD final action memoranda as primary justification for their decision.
- Analyzed instrumentation requirements for support of missile testing at the Eastern Test Range. Evaluated requirements for telemetry and engine upgrades to instrumentation aircraft by developing notional specifications (size, weight, power, gain, steerability) for an airborne tracking and telemetry system.

- Conducted economic analyses of proposals to renovate/construct Systems Management Engineering Facilities at two Air Force bases.

01/77-12/78 Purdue University Teaching Assistant

- Assisted faculty of the Mathematics department in teaching undergraduate-level calculus. Provided classroom instruction, tutoring, grading of homework assignments and tests.

Summary: Mr. Thompson has served in many roles, including team member, lead analyst, teacher/mentor, project/program manager, division manager, and director.

**Military Service** (list chronologically from most recent)

<u>Years</u>	<u>Branch</u>	<u>Rank</u>
None	N/A	N/A

Summary: N/A

**Education**

<u>Degree</u>	<u>University</u>	<u>Year</u>
MS	Purdue University (concentration in Applied Mathematics)	1978
BS	Bowling Green State University (major: Mathematics; Minor: Physics, English)	1976

**Skills**

Languages:

Russian (familiarity)

Computer:

FORTRAN, PASCAL

**Professional Associations**

<u>Name</u>	<u>Title</u>	<u>Year</u>
Military Operations Research Society (MORS)	Member	1983 - present
American Institute of Aeronautics and Astronautics	Member	1980 - 2004

**Honors/Awards**

<u>Name</u>	<u>Date</u>
ANSER, Joseph W. Platt Award, 2000	Dec, 2000
MORS, Richard H. Barchi Prize (Honorable Mention)	Jun, 1999
ANSER Excellence Award (CBW Counterforce Study Team)	Oct, 1998
ANSER Excellence Award (Modernization Planning Team)	Oct, 1996
ANSER Excellence Award (Individual)	Jul, 1996
ANSER Excellence Award (JCS J-5 Team)	Apr, 1995

**Selected Publications**

*CSAR Aircraft Effectiveness*, Military Operations Research, Vol 4, No 4, 1999

**EXHIBIT 17**

**Homeland  
Security**

August 30, 2007

MEMORANDUM FOR: Secretary Chertoff  
Deputy Secretary Jackson

FROM: Paul A. Schneider  
Under Secretary for Management

A handwritten signature in cursive script that reads "Paul A. Schneider".

SUBJECT: Advanced Spectroscopic Portal (ASP)  
Radiation Portal Monitor (RPM)

The Domestic Nuclear Detection Office (DNDO), Customs and Border Protection (CBP) and I met to review the status of the ASP path to certification. Based on the status of the field validation testing, CBP has recommended an additional two months of testing after a new software update which will be installed next week. Accordingly, we plan to defer recommending Secretarial Certification until the additional testing is complete. The Investment Review Board production decision will also be deferred; and we will develop a revised schedule over the next few weeks.

cc:  
Jay Ahern, Deputy Commissioner, CBP  
Vayl Oxford, Director of DNDO  
Allison Boyd, Counselor to the Secretary

**EXHIBIT 18**

## **Planned Advanced Spectroscopic Portal (ASP) Data Gathering at LANL**

### **Introduction**

The Department of Energy (DOE) is currently planning to deploy Advanced Spectroscopic Portals (ASPs) as secondary inspection tools. As a result of a meeting attended by DOE, the Domestic Nuclear Detection Office (DNDO), National Laboratory experts, Congressional staff, and the General Accounting Office (GAO) on June 27th, DOE and DNDO agreed on the need to conduct injection studies to more fully understand the capabilities of the ASP as a primary detection tool. As a necessary prelude to validating these studies, Los Alamos National Laboratory (LANL) will lead a multi-laboratory team to record the spectra of well-characterized, unshielded special nuclear materials (i.e. threat materials) resident at LANL under carefully controlled conditions for all of the ASPs. An explanation of injection studies and a detailed description of the planned data gathering at LANL are described below. Following this description, there is a discussion of a performance evaluation that LANL will carry out at some point in the future to optimize DOE Second Line of Defense (SLD) secondary deployments.

### **Injection Studies and Detailed Description of LANL Data Gathering**

The ability to better differentiate threats from benign materials is needed in certain high volume locations in order to reduce the impact to traffic at ports of entry by speeding up the inspection process. However, this increased ability to differentiate threats must be shown to not compromise threat detection effectiveness. A complete test of radiation detection system performance would require threat objects to be inserted into the stream of commerce – in practice this is not possible as nuclear materials cannot be used in ports of entry and the stream of commerce cannot be brought to the secure testing facilities in which nuclear threat objects can be used. It is therefore necessary to combine data taken at a port of entry on the stream of commerce with data taken in a secure facility on threat objects. Combining these data can be done by computer simulation using a method known as “threat injection studies”. A detailed description of the approach and data needed for threat injection studies is described below.

The ASP rapidly obtains one or more gamma energy spectra as the cargo passes through the portal. These spectra are analyzed by the ASP using an advanced computer algorithm that compares attributes of the spectra obtained for a given container to that observed in the secure facility for candidate threat objects, NORM, and other materials. The best match of the observed spectra to a combination of spectra from candidate threat objects and NORM is used to determine whether to “alarm” (if a threat object is present, with high certainty) or “not alarm” (if a threat object is absent, with high certainty) as the container transits the portal.

Predicting ASP performance in realistic settings is extremely difficult, primarily because of the wide range of cargo that may be encountered in commercial shipping, and the correspondingly wide range of spectra encountered. Threat Injection Studies are therefore needed to predict the performance of the ASP over a reasonably anticipated

range of cargo and threats. Threat Injection involves computer manipulation of two distinct types of measurements. The first type of measurement is to record spectra for literally thousands of cargo containers in commercial traffic. DNDO has made such measurements with multiple ASPs at the New York Container Terminal. The second type of measurement is to record the spectra of threat objects under carefully controlled laboratory conditions. Note that this involves measurement of special nuclear materials that, for obvious reasons, cannot be performed in a port environment. It is this second type of measurement that has been conducted by DNDO at NTS and will also be conducted by NNSA at LANL.

With the two types of measurements described above, threat injection studies use a computer program to “inject” threat signatures into the previously-recorded flow of commerce. The “cargo plus injected threat” spectra are then subject to analysis by the software used in the ASP, a process which the community refers to as “replay capability” or simply ‘replay’. For replay, the threat object can be changed, re-sized, shielded, and the simulated “occupancy” can be conducted at different speeds, with different backgrounds representative of different installations, and so forth. Numerous occupancies that encompass the entire range of cargo and threats can be simulated at low cost and an accurate prediction of performance can be obtained. Finally, as part of DNDO’s “spiral development” plan for ASP development, improved revisions of the ASP software will be developed; these will be tested against the same data bases of cargo and threats to verify improved performance, prior to actual field deployment.

The ASP data gathering at LANL, scheduled to take place in January – February 2008, will use a variety of unclassified radioactive sources, including both Category III and Category IV Special Nuclear Materials and candidate RDD isotopes. The sources will include the “gold standard” Category III source that has been used to characterize radiation portal monitors since the first RPM was developed at LANL in the 1970’s.

The position of the sources will be varied systematically in a detailed series of static measurements to reproduce the paths associated with actual “drive-through” measurements, i.e. different locations in a cargo container as the container passes through the ASPs. The source position will be varied “up”, “down”, “left”, and “right” perpendicular to the direction of travel, all for a variety of positions along the direction of travel. By interpolating between these measurements and performing other computerized radiation transport analyses, this data set will permit simulation of the spectrum of an arbitrary threat object at an arbitrary position in a container filled with arbitrary cargo, as it makes a passage at an arbitrary speed through the portal monitor.

Multiple ASPs from different manufacturers will be reviewed simultaneously, along with the standard Second Line of Defense Radiation Portal Monitor (RPM) with which millions of occupancies have been recorded by NNSA. At each threat object position the spectrum and total count rate will be recorded simultaneously with all monitors under review, for a time adequate to provide precise measurements (from 1 to 10 minutes, depending on source position).

The planned data gathering and measurements at LANL are a necessary part of the process by which DNDO and NNSA will be able to predict, and improve, ASP performance in primary inspection.

**Additional Performance Evaluation by DOE**

In addition to the data gathering described above, DOE will conduct its own performance evaluation of the ASP at LANL (FY 2008) to determine how best to take advantage of the ASP's spectral resolution and increased sensitivity to support the planned deployment of these monitors for secondary inspection, i.e. to maximize the performance of the ASPs. This performance evaluation will employ SNM and other radioactive sources "hidden" in shipping containers of NORM. This performance evaluation will help to further validate the threat injection studies and provide DOE with the data necessary to establish appropriate installation parameters and ConOps (optimal vehicle speed or distance intervals for stop/scan operation, effect of pillar separation, etc) in order to most effectively utilize the ASPs as secondary inspection tools in SLD operational environments. DOE will then appropriately integrate the ASP into the SLD international deployments.

**EXHIBIT 19**

**Congress of the United States**  
**House of Representatives**  
Washington, D.C. 20515

January 19, 2007

Mr. Vayl Oxford  
Director  
Domestic Nuclear Detection Office  
U.S. Department of Homeland Security  
245 Murray Lane, SW  
Washington, D.C. 20528-0300

Dear Mr. Oxford:

The Committee on Energy and Commerce has had an ongoing investigation regarding the efforts of the Department of Homeland Security (DHS) to target and inspect sea cargo containers bound for the United States from foreign ports in order to prevent possible smuggling of weapons of mass destruction. This effort has included numerous hearings by the Subcommittee on Oversight and Investigations, field visits to both domestic and foreign ports, and numerous discussions with key officials from DHS, the Department of Energy (DOE), the Defense Threat Reduction Agency, and a number of DOE national laboratories. We are writing to obtain from you information regarding the efforts of the Domestic Nuclear Detection Office (DNDO) to test and deploy nuclear detection technologies.

Since the attacks of September 11, 2001, efforts have been undertaken worldwide to secure the Nation from the threat of nuclear or radiological attack. These multifaceted efforts involve a number of key agencies and programs. On April 15, 2005, President Bush established DNDO under the Department of Homeland Security. DNDO shares responsibility for testing, selecting, and deploying nuclear detection technologies, working in conjunction with the Departments of Energy, State, and Defense, agencies that have been implementing their own programs to combat nuclear smuggling. As part of the mission at DNDO, the agency sponsors research and testing of an array of capabilities for both current generation (deployed) as well as future generation radiation portal technology. Much of this testing was conducted at the Nevada Test Site over the past 18 months.

On October 17, 2006, the Government Accountability Office (GAO) issued a report entitled "Combating Nuclear Smuggling: DHS's Cost-Benefit Analysis to Support the Purchase of New Radiation Detection Portal Monitors Was Not Based on Available Performance Data and Did Not Fully Evaluate All the Monitors' Costs and Benefits." In summary, GAO's report found that DNDO's cost-benefit analysis did not provide a sound analytical basis for DNDO's decision to purchase and deploy new radiation portal technology. Moreover, the report noted that DNDO did not use the results of its own performance tests, conducted at the Nevada Test Site, in its

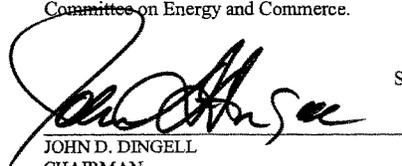
Mr. Vayl Oxford

Page 2

costs-benefit analysis and instead relied on assumptions of the new portals expected performance capability. Finally, GAO found that DNDO did not perform certain tests that were key to selecting portals that could mitigate against an array of potential dangerous radiological or nuclear materials. Given that Committee staff has had numerous discussions with key DHS staff regarding the scope of testing at the Nevada Test site, it is somewhat surprising that certain key tests were ultimately not pursued.

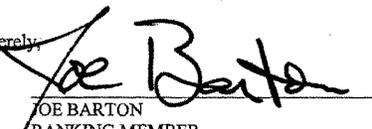
As this Committee continues to examine the issues relating to securing and detecting nuclear materials throughout the world, and given the ongoing legislative activities related to this matter, we ask that you respond to the attached list of questions by no later than close of business on Friday, February 16, 2007. Furthermore, we are forwarding this letter to the GAO Comptroller General as a formal request to continue its audit of both the testing, deployment, and the selection of equipment by DNDO for this effort. We intend to separately discuss with GAO additional language to define both the scope and direction of this future work, and we ask that your staff work with the staff from GAO as they conduct this review.

If you have any additional questions, please have your staff contact Christopher Knauer of the Majority staff (202/225-2927) or Dwight Cates of the Minority staff (202/225-3641) of the Committee on Energy and Commerce.



JOHN D. DINGELL  
CHAIRMAN  
COMMITTEE ON ENERGY AND COMMERCE

Sincerely,



JOE BARTON  
RANKING MEMBER  
COMMITTEE ON ENERGY AND COMMERCE



BART STUPAK  
CHAIRMAN  
SUBCOMMITTEE ON OVERSIGHT  
AND INVESTIGATIONS



ED WHITFIELD  
RANKING MEMBER  
SUBCOMMITTEE ON OVERSIGHT  
AND INVESTIGATIONS

Attachment

cc: The Honorable David M. Walker  
Comptroller General  
U.S. Government Accountability Office

Attachment to letter of January 19, 2007

**Questions for Mr. Vayl Oxford, Director, Domestic Nuclear Detection Office**  
**U.S. Department of Homeland Security**  
**from Reps. Dingell, Barton, Stupak, and Whitfield**

1. It is our understanding that additional tests involving portal technology are scheduled to occur at the Nevada Test Site. If so, please indicate what types of equipment will be tested and what these additional tests are designed to accomplish with respect to the selection and purchasing of nuclear portal technology.
2. A primary reason for the Nevada Test site tests was to determine the validity of "Energy Windowing," that could be apply to certain technology. Please indicate why the previous tests at the Nevada Test Site did not formally assess this technology and whether any new testing is designed to do so.
3. Please indicate whether DNDO has definitive data which can determine whether existing "plastic scintillators (PVTs)" are more or less capable of detecting radiological or nuclear materials than the proposed "advanced spectroscopic portal monitors (ASPs)." If DNDO does have such data, please include this data in your response.
4. The audit by the Government Accountability Office (GAO) revealed that although DNDO tested the performance of PVTs, along with the ASPs, it did not use the results of these tests in its cost-benefit analysis used to select the new generation of portals. Please explain why DNDO did not use the results of these tests in its selection process for choosing new technology.
5. It is our understanding that ASPs will be placed in "secondary" inspection locations at certain U.S. seaports including ports designated under the Department of Energy's "Megaports Initiative." If so, please provide the full methodology both DHS and DOE will use to not only gather data, but also assess the capability of such equipment while deployed in such settings. Please indicate how certain ports will be selected to receive any new ASP technology for testing.

*What about calibration  
 Will this  
 action  
 appear  
 13th of  
 committee  
 to by now?*

**EXHIBIT 20**



February 15, 2007

The Honorable Bart Stupak  
Chairman  
Subcommittee on Oversight and Investigations  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, D.C. 20515

Dear Representative Stupak:

Thank you for January 19, 2007 letter from the Committee on Energy and Commerce to the Domestic Nuclear Detection Office (DNDO).

The Committee asked five questions of DNDO. The questions and responses follow.

**Q1: It is our understanding that additional tests involving portal technology are scheduled to occur at the Nevada Test Site. If so, please indicate what types of equipment will be tested and what these additional tests are designed to accomplish with respect to the selection and purchasing of nuclear portal technology.**

**A1.** The Committee is correct in its understanding. The DNDO plans to conduct a test campaign at the Nevada Test Site during the Winter of 2007. This test campaign is an integral part of the ongoing program to characterize the performance of the Advanced Spectroscopic Portal (ASP) systems. The FY 2007 Department of Homeland Security Appropriation<sup>1</sup> states: "that none of the funds appropriated under this heading shall be obligated for full scale procurement of Advanced Spectroscopic Portal Monitors until the Secretary of Homeland Security has certified through a report to the Committees on Appropriations of the Senate and the House of Representatives that a significant increase in operational effectiveness will be achieved." This certification is referred to in the context of DHS Management Directive 1400 as a Key Decision Point Three (KDP-3) decision.

DNDO intends to request KDP-3 approval based upon completed and documented test results from test campaigns to be conducted at the Nevada Test Site (NTS), the New York Container Terminal (NYCT) and contractor facilities (system qualification testing), as well as interim results from deployment integration testing to be conducted at the Pacific Northwest National Laboratory (PNNL) Integration

<sup>1</sup> House Report 109-699, Making Appropriations for The Department Of Homeland Security for the Fiscal Year Ending September 30, 2007, and For Other Purposes, September 28, 2006

Laboratory (frequently referred to as the 331G facility), and field validation efforts in which ASP units are installed in "secondary screening" at eight operational Ports of Entry (POE) in tandem with existing approved interdiction systems.

The NTS Test Campaign will characterize the performance of the following systems:

1. Raytheon ASP Portal (employing Sodium Iodide gamma detection technology)
2. Thermo Fisher ASP Portal (employing Sodium Iodide gamma detection technology)
3. Canberra ASP Portal (employing Germanium gamma detection technology)
4. SAIC Polyvinyl Toluene (PVT) Portal (set at DOE Highly Enriched Uranium (HEU) Guidance – Energy Windowing Enabled)
5. SAIC PVT Portal (set at Operational Thresholds – Energy Windowing Enabled)
6. Ludlum PVI Portal (set at Operational Thresholds – Energy Ratio Enabled)
7. TSA PVT Portal used by DOE Megaports (Thresholds set by DOE Megaports)
8. SAIC GR-135 Radioisotope Identifier Device (RIID)

An operationally effective interdiction system must have the capability to detect and identify Special Nuclear Materials (SNM), Radiological Dispersal Device (RDD) materials, and Naturally Occurring Radioactive Materials (NORM) that is routinely found in the stream of commerce. Therefore, combinations of the above listed pieces of equipment will be characterized in terms of their probability to detect and probability to identify the following:

- A. Category 1<sup>2</sup> quantities of SNM
  - a. HEU
  - b. Weapons Grade Plutonium
  - c. Neptunium
- B. RDD materials
  - a. Cesium-137
- C. Simulated threat-like objects
- D. Naturally Occurring Radioactive Materials
- E. Masking Materials

**Q2: A primary reason for the Nevada Test Site tests was to determine the validity of "Energy Windowing," that could be applied to certain technology. Please indicate why the previous tests at the Nevada Test Site did not formally assess this technology and whether any new testing is designed to do so.**

**A2.** The primary purpose of the "Winter 2005 ASP Test Campaign" at NTS was to characterize the relative performance of 10 "early development ASP systems." The results of the characterization test were used in the context of a best-value competitive source selection to choose three vendors to develop

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<sup>2</sup> Quantities set by security and safeguard limitations

units suitable for a future comparative test. This subsequent round of testing was planned to measure the relative performance of ASP and PVT portals and to inform the decision to proceed with full rate production. The test plan from the "Winter 2005 ASP Test Campaign" (Advanced Spectroscopic Portal (ASP) Monitors Test #3 Plan) states: The Draft American National Standard Performance Criteria for Spectroscopy-Based Portal Monitors used for Homeland Security, ANSI 42.38-WD-F1, details the base performance requirements for radionuclide identifying portal monitors, based on monitors used in support of DHS efforts. Additional details concerning sensitivity, design requirements, testing requirements, and documentation are in the ASP Performance Specification dated January 3, 2005. The specific objectives for Test #3 are:

- Examine the ability of the monitors to detect radioactive materials.
- Assess the portal monitors' ability to discriminate amongst different classes of radioactive materials.
- Evaluate monitor performance against the draft ANSI standard: N42.38-WD-F1.
- Challenge the monitors beyond ANSI performance specifications.
- Assess the ability of the monitor assembly to communicate alarm and identification information to the user and check the human interface – how non-vendor personnel operate the assemblies based on manufacturer's training and documentation.
- Capture reliability, availability and maintainability data.

Although PVT systems were operated during the test for data collection, they were not set-up in a manner consistent with CBP operations, and validating energy windowing algorithms was not a stated purpose of the tests.

The test campaign scheduled to begin during the Winter of 2007 at NTS will compare the performance of the PVT portal detection systems to the next generation ASP portals to provide the technical basis for the Secretarial certification of ASP required by the FY 2007 Appropriations Act. As stated in the response to question 1, the SAIC and Ludlum portals at NTS have energy windowing algorithms enabled. The upcoming tests will characterize the performance of energy windowing enabled PVT portals.

**Q3. Please indicate whether DNDO has definitive data which can determine whether existing "plastic scintillators (PVTs)" are more or less capable of detecting radiological or nuclear materials than the proposed "advanced spectroscopic portal monitors (ASPs)." If DNDO does have such data, please include this data in your response.**

**A3.** DNDO does not yet have a definitive data set that allows a determination whether PVT is more or less capable than ASP. As stated above, the primary purpose of the upcoming test series at the NTS is to provide a data set suitable for such a comparison and will include both PVT models currently deployed with energy windowing enabled. The test series will not just evaluate detection capability of PVT and ASP, but also the identification ability of ASP and hand-held RIID and therefore the impact on current

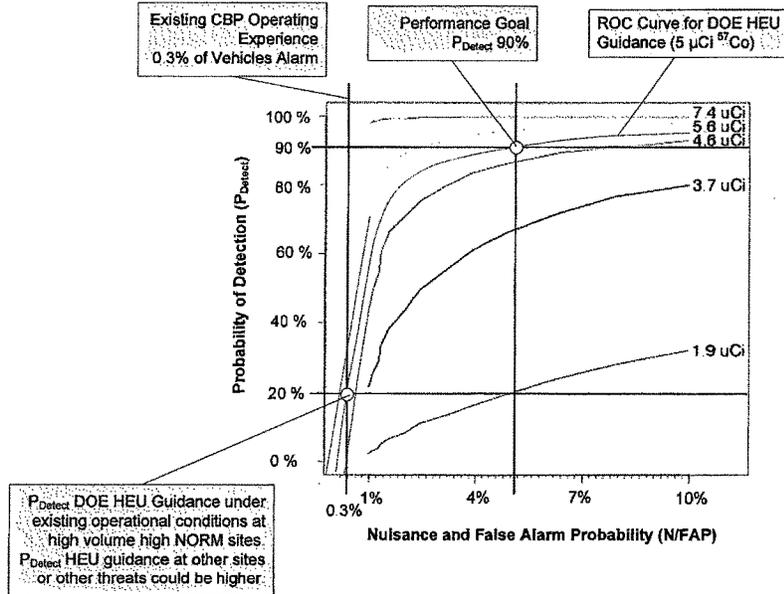
PVT-oriented site operational processes. This comparison of operational effectiveness of the next generation ASP systems to the current generation PVT systems (with energy windowing enabled) will form the technical basis for the required Secretarial certification. As required by the FY 2007 DHS Appropriations Law, the certification will be reported by the Secretary to Congress.

**Q4. The audit by the Government Accountability Office (GAO) revealed that although DNDO tested the performance of PVTs, along with ASPs, it did not use the results of these tests in its cost-benefit analysis used to select the next generation of portals. Please explain why DNDO did not use the results of these tests in its selection process for choosing new technology.**

**A4.** As stated in response to Question 2, the focus of the earlier NTS tests was not on characterizing the performance of the PVT systems. The PVT systems were not set up in accordance with procedures and settings reflective of operationally deployed systems used by CBP. Rather, the PVT data collected at the Winter 2005 test series were used in the development of advanced algorithms for PVT-based systems. Thus, the measured performance from these tests is not indicative of the currently deployed systems and not suitable for use in the cost-benefit analysis.

For the purpose of the cost-benefit analysis (CBA), DNDO derived the probability to detect HEU with existing PVT systems at existing operational thresholds at high volume POE's from the receiver-operator characteristic (ROC) curve shown in Figure 1. A ROC curve compares the nuisance and false alarm probability (N/FAP) to the probability of detection ( $P_{\text{Detect}}$ ). This ROC curve was developed using a representative stream of commerce population database of approximately 2,100 cargo vehicles collected at the Champlain POE. This Champlain dataset has been extensively evaluated by CBP and multiple national laboratories, and was available for use in unclassified settings. At the time the CBA was conducted, this data set was considered the best understood and most relevant data for the intended purposes.

Figure 1. ROC for various activities of unshielded  $^{57}\text{Co}$  point sources for the PVT/Energy Ratio in a representative stream of commerce.<sup>3</sup>



DNDO understood the limitations of this dataset. The Champlain data was based on a two window energy windowing algorithm used by the PVT systems deployed on the northern border. These data do not take into account the eight window algorithm available on the newest models currently being deployed. Therefore, DNDO always planned on validating its assumptions through a defensible characterization effort once the ASP systems were mature enough for a definitive characterization. The upcoming test campaigns at NTS and NYCT will provide a comprehensive dataset with an extensive stream of commerce (800 to 1200 vehicles per day per portal at NYCT). The results from these test events shall be used to update the cost-benefit analysis and revisit the preferred alternative.

<sup>3</sup> DOE HEU Guidance is  $5 \mu\text{Ci } ^{57}\text{Co}$ .

**Q5. It is our understanding that ASPs will be placed in “secondary” inspection locations at certain U.S. seaports, including ports designated under the Department of Energy’s “Megaports Initiative.” If so, please provide the full methodology both DHS and DOE will use to not only gather data, but also assess the capability of such equipment while deployed in such settings. Please indicate how certain ports will be selected to receive new ASP technology for testing.**

A5. The Committee is correct in its understanding. As indicated in the response to question 1, the KDP-3 will be based on a series of integrated test campaigns. In addition to NTS and NYCT, there will be field validation of eight low rate initial production (LRIP) ASP units in secondary inspection environments. These units will be deployed for secondary inspection to eight POEs where existing operational secondary PVT systems already provide interdiction capability. The ASP LRIP field validation systems will be set up in a series with the existing operational PVT systems such that all conveyances sent for secondary radiation inspection will pass through both systems. This will allow ASP testing at operational venues while limiting impacts to commerce. This arrangement will also allow direct comparisons of ASP performance in secondary to the combined performance of PVT and handheld RIDs for secondary inspection in operational streams of commerce. The criteria for choosing the sites were as follows:

- Choose sites with a differing commerce to expose the ASP systems to as wide a range of commerce as possible.
- Choose sites with large volumes of cargo to expose ASP systems to as many and different conveyances as possible.
- Choose sites with footprints that can accommodate multiple systems in secondary.
- Choose sites with a range of operational conditions to verify they meet the operational needs of the end user.

The plan is to deploy at two POEs each at northern and southern land borders and two seaports each on the east and west coasts. The list of sites to be included in the field validation effort is:

- Land Borders
  - Fort Street, Detroit, Michigan
  - Blue Water Bridge, Port Huron, Michigan
  - Colombia, Laredo, Texas
  - World Trade Bridge, Laredo, Texas
- Seaports
  - Pier J South, Long Beach, California
  - Pier A, Long Beach, California
  - A. P. Moeller, Port of New York & New Jersey
  - Port Newark Container Terminal, Port of New York and New Jersey

The DOE Megaports Initiative is purchasing 12 production ASP portals in FY 2007 and will be deploying them in FY 2007 through FY 2009 at foreign seaports to enhance secondary inspection capabilities. DOE has provided technical input to the NTS Test Plan and will observe some of the testing. DOE will evaluate the DNDO performance testing and field validation in conjunction with additional venue specific operational and interoperability testing to validate the ASP interface with the megaports communication system. DOE expects these additional tests to support its deployments in varying operational environments at the broad range of foreign seaports in which it works.

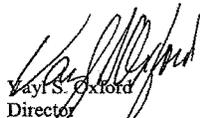
DOE anticipates deploying its first ASPs at the following ports:

- Southampton, United Kingdom
- Laem Chabang, Thailand
- Algeciras, Spain
- Antwerp, Belgium

We hope this information meets the Committee's requirements. I look forward to a continued dialogue regarding the efforts by DNDO to protect our Nation against potential nuclear threats in sea cargo containers bound to the United States from foreign ports.

If you have any additional questions, please contact the Office of Legislative and Intergovernmental Affairs at (202) 447-5890.

Sincerely,



Wray S. Oxford  
Director  
Domestic Nuclear Detection Office

**EXHIBIT 21**

Secretary  
U.S. Department of Homeland Security  
Washington, DC 20528



Homeland  
Security

July 20, 2007

The Honorable Bart Stupak  
Chairman  
Subcommittee on Oversight and Investigations  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, D.C. 20515

Dear Chairman Stupak:

As you know, the Department of Homeland Security (DHS) Domestic Nuclear Detection Office (DNDO) is developing a new type of radiation portal monitor (RPM) known as Advanced Spectroscopic Portal (ASP) to significantly harden our defenses against nuclear smuggling. This acquisition is a vital priority for the Department.

We plan to use the analysis of the results of tests conducted earlier this year and the results of field tests of Low Rate Initial Production ASP systems in realistic operational settings at domestic ports of entry of these new systems, as a prerequisite to my certification of system performance, as required by the Congress. DNDO will also use the test results to seek approval of the DHS Investment Review Board (IRB) prior to proceeding to full-scale production and deployment of ASP systems at ports of entry.

Given the national importance of this effort I think it is important to have an independent review of the test procedures, test results, associated technology assessments and the cost-benefit analyses to support a final decision by DHS to deploy this new technology. We have already received extensive technical support for this effort from the Federal government and the private sector.

Therefore, I have directed the Under Secretary for Management, my Acquisition Executive, to assemble a highly experienced team of technical and programmatic expertise to conduct such an analysis. I will make the results of this review available to you.

An identical letter has been sent to Representative Ed Whitfield of the Subcommittee on Oversight and Investigations, Committee on Energy and Commerce. In addition, letters have been sent to Chairman Thompson, Representative King, Chairman Byrd, Senator Cochran, Chairman Price, Representative Rogers, Chairman Lieberman, Senator Collins, Chairman Akaka, Senator Voinovich, Chairman Langevin, Representative McCaul, Chairman Miller, and Representative Sensenbrenner. If you need further information or

assistance on this matter please contact Debbie Frye in the Office of Legislative Affairs at (202) 447-5451.

Sincerely,



Michael Chertoff

**EXHIBIT 22**

U.S. Department of Homeland Security  
Washington, DC 20528



**Homeland  
Security**

August 3, 2007

Dr. George P. Nanos  
Defense Threat Reduction Agency  
8725 John J. Kingman Rd. Stop 6201  
Fort Belvoir, VA 22060-6201

Dear Dr. Nanos:

Enclosed are the terms of reference for the independent review of the Department of Homeland Security (DHS) Domestic Nuclear Detection Office (DNDO) Advanced Spectroscopic Portal (ASP).

Your independent review will be valuable input to the Department's decision – making process. We sincerely appreciate the Defense Threat Reduction Agency's support of this important effort.

Sincerely,

A handwritten signature in black ink that reads "Paul A. Schneider".

Paul A. Schneider  
Under Secretary for Management

Enclosure

cc: Vayl Oxford, Director of DNDO

Terms of Reference  
Advanced Spectroscopic Portal (ASP) Independent Review

**1. Background**

- The Radiation Portal Monitor (RPM) Project was established in January 2002 to design, acquire, deploy, maintain and operate RPM Systems at the U.S. Customs and Border Protection (CBP) ports of entry (POEs).
- The Domestic Nuclear Detection Office (DNDO) in coordination with CBP is deploying systems at:
  - International Mail and Express Consignment Courier Facilities (ECCF)
  - Seaport Terminals
  - International Airports
  - Land Crossings
  - Rail Crossings
- The program goal is to screen 100 percent of the cargo and privately owned vehicles entering the U.S. while minimizing the impact to legitimate commerce.
- These advanced systems are not only meant to provide enhanced detection capabilities, but also to improve the efficiency of the scanning process
- The ASP program is designed to automatically distinguish between naturally occurring radioactive material and dangerous nuclear material that actually poses a threat.
- The ASP is needed to improve the radiation detection performance of the first generation RPMs.

**2. Status**

- First generation Polyvinyl Toluene (PVT) systems started to be deployed in March 2003. The need for the second generation, Advanced Spectroscopic Portal became apparent due to the large burden on the port secondary screening process and perceived inadequacies in the systems. This led to a development effort that proceeded through engineering development, Low Rate Initial Production (LRIP), field testing and initial deployment of two vendor's ASPs.
- The FY07 Homeland Security appropriation states that:
  - "None of the funds appropriated under this heading shall be obligated for full scale procurement of Advanced Spectroscopic Portal Monitors until the Secretary of Homeland Security has certified through a report to the Committees on Appropriations of the Senate and the House of

Representatives that a significant increase in operational effectiveness will be achieved.”

- This certification is referred to in the context of DHS Management Directive 1400 as a Key Decision Point Three (KDP-3) decision, which is a decision to proceed into full rate production.

### **3. Purpose and Scope of the Review**

- The purpose of the review is to provide the Secretary of Homeland Security an independent assessment of the demonstrated performance of the ASP as one additional input to the decision making process that will ultimately lead to the required congressional certification and procure production decision.
- The Independent Team shall review the following:
  - ASP Performance Specifications.
  - Defined Critical Operational Issues (COIs), Technical Objectives and Measures of Effectiveness.
  - ASP contractor testing; Nevada test site production testing, operational testing at New York Container Terminal, deployment readiness testing at Pacific Northwest National Laboratory, and field validation testing at Ports of entry.
  - The developed Cost Benefit Analysis (CBA) which will evaluate the probability of success to detect and identify radiation and nuclear threats and an assessment of the performance of the ASP compared to the performance of the first generation systems.
- Make an assessment of the testing approach, from contractor testing through operational testing, processes employed, specifications, test procedures, and analysis methods.
- Evaluate the probability of success to detect and identify radiation and nuclear threats and assess the performance of the ASP compared to the performance of the first generation systems.
- Prepare a report of findings and recommendations.

### **4. DHS Interfaces**

- The Under Secretary for Management is the sponsor of this study and will provide overall and direction for the effort. He will provide supplemental subject matter expertise as requested by the Team Leader.
- Domestic Nuclear Detection Office and Customs and Border Protection liaison is Julian Hill, the lead systems engineer, (o) 202-254-7440, (c) 202-746-0396.

**4. End Product**

- A written report and a briefing to DHS leadership

**5. Schedule**

- Report is to be submitted by September 17, 2007.

**EXHIBIT 23**

HENRY A. WAXMAN, CALIFORNIA  
 EDWARD J. MARKEY, MASSACHUSETTS  
 RICK WADSWORTH, VIRGINIA  
 EDOLPHUS TOWNS, NEW YORK  
 FRANK PALLONE, JR., NEW JERSEY  
 BART GORDON, TENNESSEE  
 BOBBY L. RUSH, ILLINOIS  
 ANNA G. ESCOBAR, CALIFORNIA  
 BART STUPAK, MICHIGAN  
 ELIOT L. ENGEL, NEW YORK  
 ALBERT R. WYNN, MARYLAND  
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 MIKE ROSE, ARIZONA  
 DARLENE HOOLEY, OREGON  
 ANTHONY D. WEINER, NEW YORK  
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 G.K. BUTTERFIELD, NORTH CAROLINA  
 CHARLIE MELANCON, LOUISIANA  
 JOHN BARROW, GEORGIA  
 SARON F. HILL, INDIANA

DENNIS R. FITZGERALDS, CHIEF OF STAFF  
 GREGG A. ROTHSCHILD, CHIEF COUNSEL

ONE HUNDRED TENTH CONGRESS

**U.S. House of Representatives**  
**Committee on Energy and Commerce**  
 Washington, DC 20515-6115

JOHN D. DINGELL, MICHIGAN  
 CHAIRMAN

August 10, 2007

JOE BARTON, TEXAS  
 BANKING MEMBER  
 RAUF M. HALL, TEXAS  
 J. DENNIS HASTERT, ILLINOIS  
 FRED UPTON, MICHIGAN  
 CLIFF STEARNS, FLORIDA  
 HATHAM DEAL, GEORGIA  
 ED WHITFIELD, KENTUCKY  
 BARBARA CUBIN, WYOMING  
 JOHN SHIMMUS, ILLINOIS  
 HEATHER WALSON, NEW MEXICO  
 JOHN B. SHAWHEEG, ARIZONA  
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 JOHN SULLIVAN, OKLAHOMA  
 TIM MURPHY, PENNSYLVANIA  
 MICHAEL C. BURGESS, TEXAS  
 MARSHA BLACKBURN, TENNESSEE

The Honorable Paul A. Schneider  
 Under Secretary for Management  
 U.S. Department of Homeland Security  
 Washington, D.C. 20528

Dear Under Secretary Schneider:

The Committee on Energy and Commerce has had a multi-year investigation of the Department of Homeland Security's (DHS) ability prevent the smuggling of nuclear materials or weapons of mass destruction into the United States. This effort has included numerous hearings by the Subcommittee on Oversight and Investigations, field visits to both domestic and foreign ports, and numerous discussions with key officials from DHS, the Department of Energy (DOE), the Defense Threat Reduction Agency (DTRA), and a number of DOE National Labs.

As part of DHS's efforts to combat the threat of radiological or nuclear attack, its Domestic Nuclear Detection Office (DNDO) contracted for development of the next generation of radiation portal monitors. Earlier this year, DNDO conducted tests that compared the effectiveness of the existing Polyvinyl Toluene (PVT) radiation portal monitors with Advanced Spectroscopic Portals (ASPs). Such tests were critical since it is claimed by some experts that ASPs are better than PVTs in speeding the flow of cargo through ports by distinguishing between materials containing naturally occurring radioactive material, such as kitty litter, from dangerous materials such as highly enriched uranium.

On January 19, 2007, we requested a Government Accountability Office (GAO) evaluation of DNDO tests to determine whether ASPs are as effective as PVTs for detecting radioactive materials that may be hidden in commerce. This follow-on review was prompted by GAO's October 17, 2006, report, "Combating Nuclear Smuggling: DHS's Cost-Benefit Analysis to Support the Purchase of New Radiation Detection Portal Monitors Was Not Based on Available Performance Data and Did Not Fully Evaluate All of the Monitors' Costs and Benefits," which found that DNDO's cost-benefit analysis to purchase and deploy ASPs was not based on a sound analytical basis, and that DNDO's conclusions were based more on aspirational goals than actual performance.

The Honorable Paul A. Schneider  
Page 2

We were therefore surprised to learn that just as GAO's current review was nearing completion, DHS announced that it is obtaining a separate and apparently redundant review by DTRA of these tests. On August 2, 2007, DHS issued a "terms of reference" memorandum for this review, which states:

"The purpose of this review is to provide the Secretary of Homeland Security an independent assessment of the demonstrated performance of the ASP as one additional input to the decision making process that will ultimately lead to the required congressional certification and procure production decision."

It is important to note that due to Congress's continued concerns about DHS's management of this critical program, before any funds can be obligated by DNDO for the full-scale development of ASPs, the fiscal year 2007 Homeland Security Appropriations Act (P.L. 109-295) requires DNDO to submit a certification that "a significant increase in operational effectiveness will be achieved." In that regard, the "terms of reference" memorandum requires DTRA to deliver its assessment on September 17, 2007, which is three days prior to the date that DHS has indicated that it will be transmitting a certification to the House and Senate Committees on Appropriations.

By its own terms, the outcome of this new DTRA review would appear to be steered towards a certification to Congress and a subsequent procurement estimated at up to \$1.2 billion. DHS's review does not appear to be an audit, or a peer review. The time allowed for it appears to be woefully inadequate to assess such complicated testing. In addition, although this review is advertised as "independent," this conclusion may be premature. The review team has not been selected, and their potential conflicts of interest have not been assessed or disclosed. Moreover, the "terms of reference" memorandum states "The Under Secretary will provide supplemental subject matter expertise as requested by the Team Leader."<sup>1</sup> If the DHS Under Secretary is providing some of the subject matter expertise, how can independence be fully assured?

In light of this action by DHS in creating the DTRA review panel, the Committee on Energy and Commerce feels obligated to conduct a full and complete review of the methods, protocols, and validity of DTRA's review including requesting GAO to immediately embark upon another analysis of DNDO's actions in this matter. We strongly encourage DNDO staff and the DTRA review team to provide GAO with full transparency and cooperation.

At an August 2, 2007, meeting with the Committee on Energy and Commerce staff, you stated that you had recommended an "independent review" after you received a leaked draft of a letter from the House and Senate Homeland Security Committees that asked for DNDO to withhold submitting its certification to Congress until GAO had completed its evaluation. At that meeting, you refused to tell our staff how you obtained that draft letter and refused to deny it was purloined.

---

<sup>1</sup> The Team Leader will be DTRA's Deputy Director for Research, George P. Nanos.

The Honorable Paul A. Schneider

Page 3

At that meeting, you also asserted that in your "professional judgment," GAO lacks the qualifications to carry out an evaluation. When questioned, you provided no specifics to justify why you feel GAO is unqualified to carry out this review. This is troubling.

GAO expects to provide its draft product to DHS for comment within approximately two weeks. This last minute effort to seek a separate agency-sponsored review appears to be an effort by DHS to insulate itself from GAO's potentially critical findings regarding the adequacy of ASP testing. On its face, it would appear such efforts are nothing other than an attempt to lessen the impact of potentially bad news from the GAO report by doing an "end run" with a hastily planned and initiated "independent review" by DTRA, another Federal agency, which apparently has strong professional and financial links to DNDO and DHS.

Unlike the new DTRA/DHS review, GAO has not pre-judged the outcome of its assessment before it started. In addition, due to its lack of organizational or individual conflicts of interest, we feel that GAO, a trusted advisor to Congress for nearly a century, will be able to give an independent, unbiased, and objective opinion, removed from personal or financial ties to DHS.

In addition, we must note that the Committee was disappointed that you chose to prematurely end the August 2, 2007, meeting with our staff after a mere 20 minutes, despite the numerous questions that were left unanswered about the DHS-commissioned review. Your abrupt departure necessitates this current request for additional information, as well as written responses to the following questions within a week of receipt of this letter.

Accordingly, under Rules X and XI of the Rules of the House of Representatives, the Committee on Energy and Commerce and its Subcommittee on Oversight and Investigations request the following documents:

- 1) Please provide a copy of the protocols being used by DTRA to conduct this review.
- 2) Does DHS intend to conduct further testing of ASP performance with various threat and masking materials prior to certification? Does it intend to conduct further testing after the certification?
- 3) Is it DNDO's recommendation that ASPs be used in primary screening or as a secondary screening device?
- 4) Please provide a list of the DTRA review team members, their organizational affiliations, their qualifications, and copies of their completed conflict of interest (COI) and financial disclosure forms. What are the specific criteria to be used in assessing COI? Who is developing these criteria? Please provide their names and titles. Who is conducting the COI reviews?
- 5) How is the DTRA review team's work being funded? Is this funded by DTRA, or will DHS be reimbursing DTRA? Please provide the interagency agreement between

The Honorable Paul A. Schneider

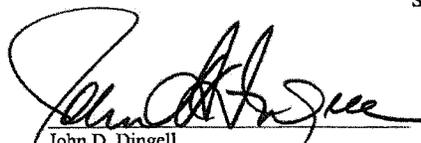
Page 4

DTRA and DHS that covers the costs of this review. What is the estimated cost of this review?

- 6) The "terms of reference" memorandum indicates that two vendors' ASPs have been deployed so far. Please identify which vendor's ASPs have been deployed. Which vendor's ASPs have not been deployed?
- 7) The "terms of reference" memorandum indicates there is a "Developed Cost Benefit Analysis," which evaluates the probability of successfully detecting and identifying radiation and nuclear threats, and a comparison between ASP and PVT detection systems. Please provide a copy of the Cost Benefit Analysis.
- 8) Please provide a copy of all records between DNDO and DTRA regarding the review of ASPs as of the date of this letter.
- 9) Please provide copies of all drafts of the "terms of reference" memorandum.
- 10) Please provide the basis for concluding that GAO is not qualified to review the performance of ASPs or DNDO's tests. Please provide all internal communications regarding DNDO or DHS's concerns about the GAO review.
- 11) Please provide the name of the individual who provided DHS with a copy of the draft letter prepared by the Homeland Security Committee and the date you received it.
- 12) In explaining your credentials, you indicated that you had worked as a defense and aerospace consultant. This included work on the Coast Guard's Deepwater program. Please provide a copy of your consulting agreement, all reports and deliverables related to your contract with the Coast Guard/DHS, and records of any and all payments received by you pursuant to that contract.

If you have any questions, please contact us, or have your staff contact John F. Sopko, Chief Counsel for Oversight and Investigations, at (202) 226-2424.

Sincerely,



John D. Dingell  
Chairman



Bart Stupak  
Chairman  
Subcommittee on Oversight and Investigations

The Honorable Paul A. Schneider  
Page 5

cc: The Honorable Joe Barton, Ranking Member  
Committee on Energy and Commerce

The Honorable Ed Whitfield, Ranking Member  
Subcommittee on Oversight and Investigations

Vayl Oxford, Director  
Domestic Nuclear Detection Office

George P. Nanos, Associate Director, Research and Development Enterprise  
Defense Threat Reduction Agency

The Honorable Bennie G. Thompson, Chairman  
Committee on Homeland Security

The Honorable Peter T. King, Ranking Member  
Committee on Homeland Security

The Honorable David E. Price, Chairman  
Subcommittee on Homeland Security  
Committee on Appropriations

The Honorable Harold Rogers, Ranking Member  
Subcommittee on Homeland Security  
Committee on Appropriations

The Honorable Joseph I. Lieberman, Chairman  
Senate Committee on Homeland Security and Governmental Affairs

The Honorable Susan Collins, Ranking Member  
Senate Committee on Homeland Security and Governmental Affairs

**Congress of the United States**  
**House of Representatives**  
Washington, D.C. 20515

January 19, 2007

Mr. Vayl Oxford  
Director  
Domestic Nuclear Detection Office  
U.S. Department of Homeland Security  
245 Murray Lane, SW  
Washington, D.C. 20528-0300

Dear Mr. Oxford:

The Committee on Energy and Commerce has had an ongoing investigation regarding the efforts of the Department of Homeland Security (DHS) to target and inspect sea cargo containers bound for the United States from foreign ports in order to prevent possible smuggling of weapons of mass destruction. This effort has included numerous hearings by the Subcommittee on Oversight and Investigations, field visits to both domestic and foreign ports, and numerous discussions with key officials from DHS, the Department of Energy (DOE), the Defense Threat Reduction Agency, and a number of DOE national laboratories. We are writing to obtain from you information regarding the efforts of the Domestic Nuclear Detection Office (DNDO) to test and deploy nuclear detection technologies.

Since the attacks of September 11, 2001, efforts have been undertaken worldwide to secure the Nation from the threat of nuclear or radiological attack. These multifaceted efforts involve a number of key agencies and programs. On April 15, 2005, President Bush established DNDO under the Department of Homeland Security. DNDO shares responsibility for testing, selecting, and deploying nuclear detection technologies, working in conjunction with the Departments of Energy, State, and Defense, agencies that have been implementing their own programs to combat nuclear smuggling. As part of the mission at DNDO, the agency sponsors research and testing of an array of capabilities for both current generation (deployed) as well as future generation radiation portal technology. Much of this testing was conducted at the Nevada Test Site over the past 18 months.

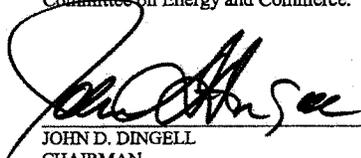
On October 17, 2006, the Government Accountability Office (GAO) issued a report entitled "Combating Nuclear Smuggling: DHS's Cost-Benefit Analysis to Support the Purchase of New Radiation Detection Portal Monitors Was Not Based on Available Performance Data and Did Not Fully Evaluate All the Monitors' Costs and Benefits." In summary, GAO's report found that DNDO's cost-benefit analysis did not provide a sound analytical basis for DNDO's decision to purchase and deploy new radiation portal technology. Moreover, the report noted that DNDO did not use the results of its own performance tests, conducted at the Nevada Test Site, in its

Mr. Vayl Oxford  
Page 2

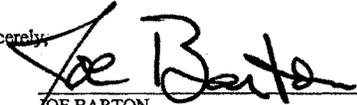
costs-benefit analysis and instead relied on assumptions of the new portals expected performance capability. Finally, GAO found that DNDO did not perform certain tests that were key to selecting portals that could mitigate against an array of potential dangerous radiological or nuclear materials. Given that Committee staff has had numerous discussions with key DHS staff regarding the scope of testing at the Nevada Test site, it is somewhat surprising that certain key tests were ultimately not pursued.

As this Committee continues to examine the issues relating to securing and detecting nuclear materials throughout the world, and given the ongoing legislative activities related to this matter, we ask that you respond to the attached list of questions by no later than close of business on Friday, February 16, 2007. Furthermore, we are forwarding this letter to the GAO Comptroller General as a formal request to continue its audit of both the testing, deployment, and the selection of equipment by DNDO for this effort. We intend to separately discuss with GAO additional language to define both the scope and direction of this future work, and we ask that your staff work with the staff from GAO as they conduct this review.

If you have any additional questions, please have your staff contact Christopher Knauer of the Majority staff (202/225-2927) or Dwight Cates of the Minority staff (202/225-3641) of the Committee on Energy and Commerce.

  
JOHN D. DINGELL  
CHAIRMAN  
COMMITTEE ON ENERGY AND COMMERCE

Sincerely,

  
JOE BARTON  
RANKING MEMBER  
COMMITTEE ON ENERGY AND COMMERCE

  
BART STUPAK  
CHAIRMAN  
SUBCOMMITTEE ON OVERSIGHT  
AND INVESTIGATIONS

  
ED WHITFIELD  
RANKING MEMBER  
SUBCOMMITTEE ON OVERSIGHT  
AND INVESTIGATIONS

Attachment

cc: The Honorable David M. Walker  
Comptroller General  
U.S. Government Accountability Office

Attachment to letter of January 19, 2007

**Questions for Mr. Vayl Oxford, Director, Domestic Nuclear Detection Office**  
**U.S. Department of Homeland Security**  
**from Reps. Dingell, Barton, Stupak, and Whitfield**

1. It is our understanding that additional tests involving portal technology are scheduled to occur at the Nevada Test Site. If so, please indicate what types of equipment will be tested and what these additional tests are designed to accomplish with respect to the selection and purchasing of nuclear portal technology.
2. A primary reason for the Nevada Test site tests was to determine the validity of "Energy Windowing," that could be apply to certain technology. Please indicate why the previous tests at the Nevada Test Site did not formally assess this technology and whether any new testing is designed to do so.
3. Please indicate whether DNDO has definitive data which can determine whether existing "plastic scintillators (PVTs)" are more or less capable of detecting radiological or nuclear materials than the proposed "advanced spectroscopic portal monitors (ASPs)." If DNDO does have such data, please include this data in your response.
4. The audit by the Government Accountability Office (GAO) revealed that although DNDO tested the performance of PVTs, along with the ASPs, it did not use the results of these tests in its cost-benefit analysis used to select the new generation of portals. Please explain why DNDO did not use the results of these tests in its selection process for choosing new technology.
5. It is our understanding that ASPs will be placed in "secondary" inspection locations at certain U.S. seaports including ports designated under the Department of Energy's "Megaports Initiative." If so, please provide the full methodology both DHS and DOE will use to not only gather data, but also assess the capability of such equipment while deployed in such settings. Please indicate how certain ports will be selected to receive any new ASP technology for testing.

**EXHIBIT 24**

AUG 23 2007

**Homeland  
Security**cc: R. R.  
J. S.

August 20, 2007

The Honorable John D. Dingell  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, DC 20515

Dear Chairman Dingell:

This responds to your letter of August 10, 2007 concerning the Department of Homeland Security (DHS) Domestic Nuclear Detection Office (DNDO) development of a new type of radiation portal monitor (RPM) known as Advanced Spectroscopic Portal (ASP) that has the potential to significantly harden our defenses against nuclear smuggling.

The ASP program has been the subject of a number of hearings, briefings, field visits, and requests for information, and over the last year at least two Government Accountability Office (GAO) reviews -- with the second GAO review nearing completion. The Department appreciates the need for rigorous review to ensure this critical program satisfies the goal of preventing the smuggling of nuclear materials through our borders. To this end, the Department has responded to requests for information. The Department is itself collecting information to assist the Secretary in determining whether he should certify that there will be a significant increase in operational effectiveness with the procurement of ASP systems -- a certification required by Congress. Part of that effort includes using the analysis of the results of tests conducted earlier this year and the results of field tests of Low Rate Initial Production ASP systems in realistic operational settings at domestic ports of entry of these new systems. DNDO will also use the test results to seek approval of the DHS Investment Review Board (IRB), of which I am the Vice Chair, prior to proceeding to full-scale production of ASP systems at ports of entry.

In addition, given the critical national importance of this effort, I thought it was important to have an independent review of the test procedures and test results to support the DHS decision-making process. I therefore recommended to the Secretary that we conduct an independent review. He agreed with my recommendation and directed me to assemble an appropriate team of technical and programmatic expertise to conduct such an analysis.

Based on your August 10 letter and the August 2 meeting with your staff, there appears to be several areas of misunderstanding related to this effort that I hope to clarify below.

**The DHS review is for the purpose of providing the Secretary with sufficient information to make the required certification and is not intended to be a substitute for the GAO review.**

The Secretary must collect information to inform his certification decision on this program. I made a recommendation to the Secretary to conduct an independent review, based on past experience where reviews such as this have assisted the decision-maker in making an informed decision. In my opinion, this independent review will provide valuable assistance to the Secretary and to me as the Department Acquisition Executive and Vice Chair of the DHS Investment Review Board as DHS considers the best way forward. The Department of Defense typically uses such review efforts to facilitate decision-making on major programs.

Your letter implies that DHS' effort to conduct an independent review of the ASP program is intended to undermine the pending GAO review. DHS' review of this system is not intended to substitute for GAO's review, nor is it a redundant effort. GAO is an agent of the Congress that appropriately provides information to Congress in support of its oversight function. GAO's efforts do not preclude DHS from conducting its own independent review to support DHS' decision-making process. It is entirely appropriate for DHS to leverage the resources of the executive branch to gather information to make an informed decision on a critical program. DHS may enlist whoever it deems appropriate for consultation in exercising its responsibilities for program execution.

**DHS does not question GAO's ability to conduct any review.**

The GAO has expertise in government program review and has access to relevant information within the Federal Government, and can amass the required expertise to review a program of interest. In the case of ASP, we understand that NIST is providing technical support for this program review. My recommendation for an independent review was based in part on the need for the Department to have the benefit of specialized technical expertise and a party other than Congress' oversight agent to provide input to support the Department's as we make decisions about this critical program.

**The review is not a DTRA review.**

Your letter regularly refers to our effort as a "DTRA review." This is not a DTRA-sponsored review. My intent was to leverage some DTRA resources by requesting an individual from DTRA to assemble an appropriate team of technical experts to perform this task. This assignment was to the individual personally, not to DTRA. We fully expected that the majority of members would be from outside of DTRA.

**The DHS review effort will be an honest effort to make an independent assessment of this program.**

Your August 10 letter implies that because of the participants and timing of the review it will be biased and the outcome of the assessment has been pre-determined. You stated “[u]nlike the new DTRA/DHS review, GAO has not pre-judged the outcome of its assessment...” This statement pre-judges our review efforts. As the Department’s Acquisition Executive and the Vice Chair of the Investment Review Board, I regularly must assess the validity of various departmental programs. I do not pre-judge the viability of a program until I know the facts. Similarly, I expect the participants in this review (who will be appropriately vetted for conflicts of interest) to conduct a rigorous review based on their technical expertise.

A detail response to your 12 questions is attached.

A copy of this letter is being sent to the ranking member of the Committee on Energy and Commerce, ranking member of the Subcommittee on Oversight and Investigations, the Chairman and ranking member of the Committee on Homeland Security, the Chairman and ranking member of the Subcommittee on Homeland Security Committee on Appropriations, Chairman and ranking member of the Senate Committee on Homeland Security and Governmental Affairs and the Director of the Domestic Nuclear Detection Office at the Department of Homeland Security.

Thank you for your continued support of the Department of Homeland Security and DNDO’s programs. If I can be of more assistance on this or other matters, please contact me or Mr. Jeffrey Readinger in the Office of Legislative Affairs at 202-447-5890.

Sincerely,



Paul A. Schneider  
Under Secretary for Management

Enclosures

cc: The Honorable Bart Stupak

**DHS RESPONSES TO ASP QUESTIONS AND REQUESTS**

1. Please provide a copy of the protocols being used by DTRA to conduct this review.

Answer: The protocols are being developed and will be provided when available.

2. Does DHS intend to conduct further testing of ASP performance with various threat and masking material prior to certification?

Answer: No. DNDO has already conducted extensive testing at NTS and NYCT, as well as at manufacturer's facilities. Deployment integration testing and field validation is being conducted by CBP at operational ports of entry (POEs). The results of all these test campaigns will be documented in test analysis reports either already provided to the GAO or that will be provided once the reports are complete. The results from these test campaigns will provide a sufficient technical and operational basis for the Secretary to make the determination to certify that ASP systems provide a significant improvement in operational effectiveness over the presently deployed systems.

Does DNDO intend to conduct further testing after certification?

Answer: Yes. Further testing will be conducted as necessary to support spiral development, enhanced algorithms, new ASP variants, and deployment to new venues.

3. Is it DNDO's recommendation that ASPs be used in primary screening or as a secondary screening device?

Answer: The DHS Appropriations Act for FY 2007 requires the Secretary to certify that ASP represents a significant increase in operational effectiveness. After that assessment is made, it is up to DNDO to work with the customer to determine deployment options. For DHS, that means that CBP will decide on deployment, and whether ASP is deployed into secondary or primary or both. The current plan is to introduce ASP into secondary and, with experience, decide if and when to deploy into primary.

4. Please provide a list of the DTRA review team members, their organizational affiliations, their qualifications, and copies of their completed conflict of interest (COI) and financial disclosure forms. What are the specific criteria to be used in assessing COI? Who is developing these criteria? Please provide their names and titles. Who is conducting the COI reviews?

Answer: As mentioned earlier, this is not a DTRA sponsored review and the team is not yet assembled. I requested that Dr. Nanos from DTRA assist in assembling an appropriate team of technical experts to perform this task. This assignment was to him personally, not to DTRA. We fully expected that the majority of the members would be from outside of DTRA. When the team is assembled, it will be appropriately vetted to ensure there are no inappropriate conflicts of interest.

5. How is the DTRA review team's work being funded? Is this funded by DTRA, or will DHS be reimbursing DTRA? Please provide the interagency agreement between DTRA and DHS that covers the cost of this review. What is the estimated cost of this review?

Answer: The effort will be funded by DHS. The estimated cost of this review is being developed. An interagency agreement will be negotiated to effect this action. A copy of the cost estimate will be provided when issued.

6. The "terms of reference" memorandum indicates that two vendors' ASPs have been deployed so far. Please identify which vendor's ASPs have been deployed. Which vendor's ASPs have not been deployed?

Answer: Raytheon Inc. and Thermo-Fisher Scientific Inc. ASP portal units have been deployed at 8 operational ports of entry for purposes of field validation. Canberra ASP portals have not yet been deployed.

7. The "terms of reference" memorandum indicates there is a "Developed Cost Benefit Analysis," which evaluates the probability of successfully detecting and identifying radiation and nuclear threats, and a comparison between ASP and PVT detection systems. Please provide a copy of the Cost Benefit Analysis.

Answer: The Cost Benefit Analysis (CBA) to be used for Secretarial Certification has not been completed. It is anticipated that this CBA will be completed sufficiently in advance to provide to the Secretary prior to certification.

8. Please provide a copy of all records between DNDO and DTRA regarding the review of ASPs as the date of this letter.

Answer: DNDO has no such records.

9. Please provide copies of all drafts of the “terms of reference” memorandum.

Answer: We have provided the final “terms of reference” memorandum. The only differences between the drafts and the final “terms of reference” document were the date of completion and the name of the DNDO liaison official.

10. Please provide the basis for concluding that GAO is not qualified to review the performance of ASPs or DNDO’s tests. Please provide all internal communications regarding DNDO or DHS’ concerns about the GAO review.

Answer: The question presupposes that DHS made a determination that GAO is not qualified to conduct this review. DHS has not made such a determination.

11. Please provide the name of the individual who provided DHS with a copy of the draft letter prepared by the Homeland Security Committee and the date you received it.

Answer: The draft letter was provided to the DHS congressional staff. This is a common practice given the close coordination that exists between DHS and the principal DHS oversight committees. I reviewed a copy of this letter in late July 2007.

12. In explaining your credentials, you indicated that you had worked as a defense and aerospace consultant. This included work on the Coast Guard’s Deepwater program. Please provide a copy of your consulting agreement, all reports and deliverables related to your contract with the Coast Guard/DHS, and records of any and all payments received by you pursuant to that contract.

Answer: The work I performed for the Coast Guard was performed under a contract that I had with Interactive Technologies Group, Inc. (ITG). ITG was under contract with Defense Acquisition University (DAU). I was a subcontractor to ITG. I am providing a copy of my Master Services Agreement with ITG per your request. The work I performed for DAU included the Rescue 21 program and the Deepwater program. The hours were subsequently increased in their automated invoicing system to cover my effort on the Deepwater Program. The deliverables under my contract were draft documents that were subsequently finalized and submitted to the Coast Guard. DAU owns these documents. Consequently, I recommend that you obtain these documents. I am happy to provide validation of my credentials as I previously did through the confirmation process, but the relevance of my payment records to this inquiry is unclear. I respectfully decline to provide this information at this time.



Paul Schneider MSA  
 Defense Acquisition University  
 Consulting and Training Services

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*Master Services Agreement*

This Master Services Agreement, hereinafter referred to as the "Agreement", is made effective as of April 10, 2006 by and between the Prime Contractor, Interactive Technologies Group, Inc., hereinafter referred to as "ITG", of 331 West 3<sup>rd</sup> Street, Suite 140, Davenport, Iowa 52801 and Paul Schneider, hereinafter referred to as "Subcontractor", of 106 Placid Court, Arnold, Maryland 21012.

ITG is engaged in the business of management engineering, interactive technologies, training, and consulting. The Subcontractor will primarily provide technical services to support ITG efforts at a Defense Acquisition University, hereinafter referred to as "Client", location.

- A. ITG desires to have the services of the Subcontractor.
- B. Subcontractor is willing to provide services to ITG.

Now, therefore, in consideration of the mutual promises, covenants, and agreements contained herein, the parties agree as follows:

1. **SERVICES PROVIDED BY THE SUBCONTRACTOR.** Subcontractor shall provide services on an "as needed basis". Subcontractor accepts and agrees to provide such services, subject to this agreement, at a level approved by ITG and ITG's management/supervisory personnel. Exhibit A provides a brief description of Services.
2. **BEST EFFORTS OF SUBCONTRACTOR.** Subcontractor agrees to perform faithfully, industriously, and to the best of Subcontractor's ability, experience, and talents, all the services described on the attached Exhibits A, which is made part of this Agreement by reference.
3. **FEES AND PAYMENT TERMS.** Fees are performance based. For acceptable services provided by Subcontractor under this Agreement, ITG will pay Subcontractor the amount listed per hour worked on the project/task as defined in Exhibit A and requested by Client and ITG. This amount shall be paid no later than ten (10) business days after ITG receives payment from Client. The fees outlined in Exhibit A represent the entire compensation for services under this contract. No other fees, compensations, or reimbursements outside of Exhibit A will be considered. As schedule is finalized with task delivery component, Exhibit A is subject to amendment. Subcontractor agrees to record hours per project/task from Exhibit A into ITG's accounting management system weekly.
4. **REIMBURSEMENT OF EXPENSES.** ITG will reimburse Subcontractor for reasonable business expenses, in accordance with ITG policies. Expenses other than those listed in ITG policies, specified in exhibit A, or approved in advance will not be reimbursed.
5. **RELATIONSHIP OF THE PARTIES.** Subcontractor is an independent subcontractor and is neither an employee nor agent of ITG. Nothing contained in this Agreement will be construed as creating an employment relationship between the parties hereto, nor will either party have the right, power, or authority to create any obligation or duty, express or implied, on behalf of the other. Neither party will be responsible for the other's business obligations, including but not limited to, insurance and employment related taxes.

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ITG Initials *PS/LS*

Page 1 of 4

*PS* Subcontractor Initials



Paul Schneider MSA  
 Defense Acquisition University  
 Consulting and Training Services

6. **PROPRIETARY RIGHTS.** The work product provided hereunder shall be deemed to be "work made for hire" and Subcontractor agrees that all rights, title, and interests of Subcontractor in and to the work product shall be and are assigned to ITG as its sole and exclusive property, to the extent allowed by the Government. Subcontractor shall provide ITG with all information, suggestions, and recommendations regarding ITG's business, of which Subcontractor has knowledge, which will be of benefit to ITG. Any copyrightable works, ideas, discoveries, inventions, patents, products, or other work product developed in whole or in part by Subcontractor in connection with the services shall be the exclusive property of ITG, to the extent allowed by the Government. Upon request, Subcontractor shall sign all documents necessary to confirm or protect the exclusive ownership of ITG to the Work Product.
7. **CONFIDENTIAL INFORMATION.** In the course of performance of this agreement either party (the "recipient") may learn Confidential Information of the other party (the "owner"). Recipient agrees to disclose such information to its employees only on a need to know basis and agrees not to directly or indirectly, divulge, disclose, or communicate in any manner any information to any third party without the prior written consent of ITG. "Confidential Information" means information, including hard copy or electric form, written or oral, which a reasonable person would consider to be confidential in nature. All Confidential Information will be considered trade secrets and will be entitled to all protections under the law for trade secrets. In no event shall Recipient use the Owner's Confidential Information to reverse engineer or otherwise develop products or services functionally equivalent to the products or services of the Owner. The parties' obligations under this section will survive the termination of this agreement. A violation by Subcontractor of this paragraph shall be a material violation of this Agreement and will justify legal and/or equitable relief. Subcontractor shall:
- A. Sign a non-disclosure statement provided by Client. If Client does not supply, ITG will provide one that will remain on file with the Client and in personnel records maintained by ITG.
8. **TERM/TERMINATION.** This Agreement may be terminated by ITG:
- A. The Subcontractor may terminate this Agreement upon five (5) business days written notice.
- B. If, for any reason our Client cancels the contract.
- C. Upon five (5) business days written notice if in its sole discretion ITG determines that Subcontractor has acted dishonestly or carelessly, committed an act of misconduct or acted in any way that adversely affects ITG's reputation.
- D. If Subcontractor is in material breach of any of its obligations under this Agreement and fails to remedy such breach within five (5) business days of receipt of a written notice by ITG which specifies the material breach.
- E. If the services provided by the Subcontractor fail to meet a level minimum to industry standards.
9. **ENTIRE AGREEMENT.** This Agreement contains the entire agreement of the parties and there are no other promises or conditions in any other agreement whether oral or written. This Agreement supersedes any prior written or oral agreements between the parties. Amendments to this Agreement must be made in writing and signed by both parties to be binding on either party.
10. **NON-COMPETE.** ITG and Subcontractor agree that marketing and sales efforts could offer additional revenue generating opportunities not anticipated in this agreement. Subcontractor shall not, either directly or indirectly, solicit or contract with any former or current client of ITG, for services that are the same or similar to services offered by ITG, for the duration of this Agreement



Paul Schneider MSA  
Defense Acquisition University  
Performance Learning Model (PLM) Course Support

and for the (1) year period following the termination thereof. This is not intended to restrict subcontractor from providing services to other customers, subject to provisions of this clause.

- 11. **ABANDONMENT.** If Subcontractor abandons this agreement or fails to complete the services as described in Exhibit A without written consent from ITG, it will be considered a breach of contract and ITG may seek any and all legal remedies available.
- 12. **AMENDMENT.** This Agreement may be modified or amended, if the amendment is made in writing and is signed by both parties.
- 13. **SEVERABILITY.** If any provisions of this Agreement shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. If a court finds that any provision of this Agreement is invalid or unenforceable, but that by limiting such provision it would become valid or enforceable, then such provision shall be deemed to be written, construed, and enforced as so limited.
- 14. **WAIVER OF CONTRACTUAL RIGHT.** The failure of either party to enforce any provision of this Agreement shall not be construed as a waiver or limitation of that party's right to subsequently enforce and compel strict compliance with every provision of this Agreement.
- 15. **APPLICABLE LAW.** The laws of the State of Iowa shall govern this Agreement and the resolution of any dispute or claim arising from this Agreement shall be determined solely within the Courts of the State of Iowa.

**Prime Contractor:**  
Interactive Technologies Group, Inc.

**Subcontractor:**

By: Mark E. Newsome  
Date: 4/24/06  
Mark E. Newsome  
President & CEO  
331 West 3<sup>rd</sup> Street, Suite 140  
Davenport, Iowa 52801  
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mnewsome@itgco.com

By: Paul A. Schneider  
Date: 4/12/2006  
Paul Schneider  
Senior Domain Expert  
106 Placid Court  
Arnold, Maryland 21012  
301-858-7223  
paul\_a\_schneider@msn.com

ITG Initials MS

PS Subcontractor Initials



Paul Schneider MSA  
 Defense Acquisition University  
 Consulting and Training Services

**Exhibit A - Deliverables, Payables and Schedule**

**Defense Acquisition University  
 Consulting and Training Services**

**ITG Title: Senior Domain Expert**

Deliverables	Quantity	Unit	Unit Price	NTE Amount
Consulting and Training Services				
Travel				
Total				

Subcontractor will:

Provide consulting and training services to include acquisition program assessments, recommendations and corrective action plans. Specific tasks that may be required include:

- Develop study plans, schedules and estimates of resource requirements
- Review and assess acquisition documentation
- Arrange and conduct interviews with government and industry officials involved in the management of acquisition programs and related activities
- Attend reviews and meetings
- Provide informal reports of progress, such as in execution of studies
- Draft and present assessments, recommendations and corrective action plans
- Coordinate activities that may be performed by others involved in studies
- Advise government acquisition officials on the development of acquisition strategies, contracts and other acquisition documentation and plans

Period of Performance: Immediate through 30 Sept 06

POC: David Fitch/Janet Vincent

ITG Initials *[Signature]*

*[Signature]* Subcontractor Initials

**EXHIBIT 25**



## Homeland Security

September 14, 2007

The Honorable John D. Dingell  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, DC 20515

Dear Mr. Chairman:

This letter is a follow up to my response to your letter of August 10, 2007 concerning the Department of Homeland Security (DHS) Domestic Nuclear Detection Office (DNDO) development of a new type of radiation portal monitor (RPM) known as Advanced Spectroscopic Portal (ASP) to significantly harden our defenses against nuclear smuggling.

My earlier response provided answers to several questions you raised; however, there were some which I was not able to address at that time. Enclosed please find the answers to the majority of the outstanding questions and additional ones raised by your staff. The remaining answers will be forwarded by separate correspondence.

Upon reviewing the status of the ASP program in conjunction with my 40-years of experience in this field, I determined that this program would benefit from an independent review to analyze the technical data. I made this recommendation to the Secretary and he concurred. My approach was to select a team leader and request that he assemble a team of qualified people to conduct a review of limited scope focusing on the testing part of the program.

I originally selected the Associate Director of the Threat Reduction Agency to lead the team. However, he later was not available to lead the team. It is important to note that this review was not intended to be a DTRA study, but rather an effort to leverage DTRA resources/experts in assembling a team of technical experts.

After I learned in early August that the original team leader would not be able to lead this effort, I began my search for a suitable replacement. I identified Mr. John Higbee, who is currently the Dean of Defense Acquisition University School of Program Managers, as a suitable replacement. This week, I learned that Mr. Higbee may become involved in other DHS matters. Given the significant external scrutiny that the review has received, I decided to proceed with the utmost caution and have removed Mr. Higbee as team leader. The independence of this team is of utmost importance to its effectiveness. I am taking this precautionary measure to avoid potential disruption of the team at a later date. Mr. George Thompson, Deputy Director, Programs for the Homeland Security Institute will take over leadership of the team.

Thank you for your continued support of the Department and the DNDO programs. If I can be of more assistance on this or other matters, please contact me or Mr. Jeffrey Readinger in the Office of Legislative Affairs at (202) 447-5890.

Sincerely,

A handwritten signature in black ink that reads "Paul A. Schneider". The signature is written in a cursive style with a large initial "P".

Paul A. Schneider  
Under Secretary for Management

Enclosure

**DHS FOLLOW UP RESPONSES TO ASP QUESTIONS AND REQUESTS**

- 1) In your letter, you state that DHS understands that NIST is assisting GAO in their review. However, the Committee has been told by GAO that NIST is not involved in the GAO review and the committee would like to know if this changes your perspective on if GAO is qualified to conduct this review.

Answer: The use of NIST has no bearing on this matter. GAO and DHS have access to any and all technical resources in the country to conduct reviews, perform assessments, etc.

- 2) The Committee notes that in the letter you state that the independent review is not a DTRA review, but in the response contained in the enclosure to question number 5 states that we are working on an interagency agreement with DTRA to conduct the review. The committee wants to know:
- a. Who the interagency agreement is with,
  - b. When it will be completed,
  - c. Does DHS have an estimated cost agreement for the independent review, and
  - d. Requested a copy of the interagency agreement.

Answer: We are bringing together experts from different sources in order to facilitate a broad review and add to the diversity of opinions. DHS has issued a task order under DHS' existing contract with the Homeland Security Institute. DHS is also putting into place an interagency agreement (IAA) with DTRA. Copies of the order and IAA will be provided separately.

- 3) The Committee has requested a list of the independent review team members, and if it is still just a partial team to please provide what DHS has.

Answer: the current team members are listed below:

Mr. George Thompson  
 Dr. Peter E. Vanier  
 Dr. James Lemley  
 Dr. Michael C. Wright  
 Dr. Claus-Peter Ziocck  
 Dr. Dennis Slaughter  
 Dr. Alan Berman

Their biographies are attached.

- 4) The Committee has asked if the review protocols are now available, if not when will they be and they be available, and have repeated there requested to have a copy of them.

Answer: Review protocols are not available yet.

- 5) The Committee has requested a copy of the “Blind Test Results” and wants to know if they have been or when will the “blind test” results be given to GAO.

Answer: DNDO is presently conducting a quality control check of the data from the Blind Test and will provide results as soon as they are finalized.

- 6) The Committee has asked for clarification with regard to the enclosure response for question number 3; they would like to know “how” and “what” DHS is certifying a significant increase in operational effectiveness to. Is it to the primary or the secondary screening?

Answer: Congress imposed this certification requirement in the Fiscal Year 2007 DHS Appropriations Act. Secretarial certification of ASP means that the Secretary has determined that ASP technology will provide a significant operational improvement over the currently deployed system that consists of a PVT RPM in primary, followed by a PVT RPM and a handheld RIID in secondary. DNDO’s customers will evaluate the systems in the field before they decide how and when to deploy the ASP systems.

- 7) With regard to DHS’ response to enclosure question number 7 on the Cost Benefit Analysis (CBA), the Committee has requested a copy of the CBA data that will be used for the certification decision, as well as a date specific on when the CBA will be completed.

Answer: The data and information that serve as the technical basis for the updated cost benefit analysis will be provided with the CBA report when the report is complete. The CBA report will be completed prior to the Secretarial certification.

- 8) With regard to DHS’ response to enclosure question number 9 on draft terms of reference, the Committee has requested to know who was the original DNDO liaison official.

Answer: There was no liaison official listed on the draft document, which was the major reason the document was initially issued in draft form.

- 9) The committee has requested to know if the date the independent review team is expected to provide their results has changed from what was told to them in the briefing (September 17th)?

Answer: The September 17th completion date will be changed based on the additional field verification testing that will be conducted by CBP. A new completion date will be determined based on the revised testing schedule.

10) What software, impacting what machines and what impact will this have on the NTS tests? Has GAO been briefed on this? What is the revised schedule?

Answer: The software referred to is the recent software upgrade made to the system. It affects the entire system. Software upgrades like this are part of the normal practice associated with fielding a new system.

No changes have been made to the core Threat Identification Analysis (TIA) code for either system (Raytheon or Thermo Fisher) or to any module that could affect inherent system sensitivity, degrade threat detection, or invalidate the Nevada Test Site data.

Since NTS testing, changes were made to the software to correct system operability issues in the Raytheon and Thermo ASP portals identified during PNNL 331G and Field Validation Testing. The software fixes include improvements such as the boot-up and disable-to-enable timelines, the addition of break beam sensors to augment occupancy detection capability, improved memory and archival data management capabilities, and improved capabilities for system diagnostics.

**EXHIBIT 26**

**Response to Committee Questions from Raytheon Regarding ASPs—9/17/2007**

**Question: What was done to ASP systems during and after Phase 1 pre-test and dry-runs? Did you adjust your systems to "tune" them to the threat sources? In your view, are the tests still valid?**

Response: The Raytheon Advanced Spectroscopic Portal (ASP) system installed at the Nevada Test Site (NTS) underwent a number of changes following Phase 1 pre-test and dry runs. These changes were made to correct software and algorithm issues that were identified by our engineers following reviews of pre-test and dry run performance data. The software and algorithm improvements were not specifically to address performance to any particular threat source, but to account for a wide range of threat sources.

The systems were not tuned to the threat sources seen at the pre-test and dry runs, but were modified to address a broad range of threats based on data from those dry runs.

In our view, the tests performed at NTS are still valid, and the Threat Identification Algorithms used in NTS are the same as in the currently fielded LRIP systems.

**Question: What took place during phase 1 testing dry-run and dress rehearsal?**

Response: The Raytheon ASP system was installed on a roadway at the Nevada Test Site in line with other ASP systems as well as a number of older technology polyvinyl toluene (PVT) systems. Trucks containing threat sources, non-threat sources as well as empty trucks were driven through the portals to determine sensitivity to radioactivity as well as the ability of the systems to discriminate threat from non-threat sources.

Raytheon engineers were present during testing to support the system test and to address any potential system operating issues.

**Question: Have you seen the blind study test data - results of phase 3 testing?**

Response: We received the NTS Phase 3 test data August 15<sup>th</sup> and are in the process of conducting analysis. The data we were sent does not contain the log file information data, (information such as source identification, strength or configuration, or shielding information). The data we have received to date is the information gathered by the Raytheon ASP systems during NTS, NYCT and PNNL testing.

**Question: Do you know the outer detection limits of these machines, with high NORM masking material and low emission threat material?**

Response: Our physicists understand the limits of the Raytheon ASP system regarding detection of radioactive sources in proximity to high quantities of NORM masking materials. Our system can discriminate the threat source from NORM and can recognize the radioactive signature of a threat source being masked by NORM, causing an Alarm which will signal the ASP operator to further inspect the vehicle.

**Question: What sources were specified to you for use on the contract?**

Response: Our system designs were tested by using surrogate sources which are readily available industrial sources. Sources we use for testing are Co-57, Co-60, Am-241, Cs-137, Ba-133, and Cf-252. These sources and strengths are defined in the design specification on our contract.

**Question: Was digital data of threat signatures provided to you by DNDO?**

Response: No digital data of threat signatures has been received by Raytheon or our BTI teammate from DNDO or any other source.

**EXHIBIT 27**

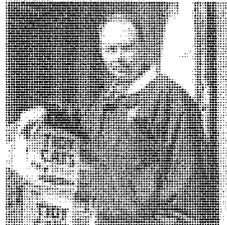


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## Radiation detectors tested in Nevada

By Mimi Hall, USA TODAY

**NEVADA TEST SITE, Nev.** — The Bush administration is ramping up efforts to prevent terrorists from smuggling radiological material into the country that could be used to set off a "dirty bomb" or even a nuclear weapon, according to the Homeland Security Department.



Vayl Oxford, head of the Domestic Nuclear Detection Office, tests a container full of cat litter, which can set off detectors.

NNSA Nevada Site Office

Plans call for a new radiation detection test site deep in the Nevada desert, more detectors at the nation's seaports and border crossings and a 70% budget increase for Homeland Security's Domestic Nuclear Detection Office (DNDO).

The initiative comes amid chilling threats made last month by al-Qaeda leader Osama bin Laden — and some say it can't come too soon.

"Al-Qaeda used vans in 1993 (to bomb the World Trade Center) and planes in 2001," says former 9/11 commissioner Tim Roemer. "It could be some kind of catastrophic attack next time."

The public has not been alerted to intelligence suggesting terrorists have the materials or are preparing to detonate a device that could cause chaos — or far worse — in a major American city. But the possibility worries the government.

"We have to move aggressively, or the consequences are going to be dire," says Rep. Jim Langevin of Rhode Island, the top Democrat on a House subcommittee on nuclear attack prevention.

In his fiscal 2007 budget, President Bush is seeking \$535.7 million for the DNDO, which is responsible for preventing radiological or nuclear weapons from getting into the country. That includes \$178 million for new radiation detectors and \$100 million for the development of equipment used by agents along the nation's borders and at events such as presidential inaugurations and Super Bowl games.

To test that equipment, Homeland Security is working at the storied Nevada Test Site, where the U.S. government tested nuclear weapons for more than four decades. Near a cratered area where mushroom clouds once rose, construction is underway on an 11-acre site where scientists will test weapons needed for this generation's war on terrorism.

"We've gone from the offense to the defense," says DNDO chief Vayl Oxford.

<http://usatoday.printthis.clickability.com/pt/cpt?action=cpt&title=USATODAY.com+-+Ra...> 9/13/2007

Workers are building a mock border crossing so testing trucks can drive containers of radioactive materials through radiation portal monitors. Agents at the \$33 million site also will test modern versions of Geiger counters.

While the new site is being built, scientists have started work just downhill from a highly secured 100,000-square-foot steel and concrete bunker where the government stores its nuclear weapons material.

There, Oxford's chief test scientist, Dan Blumenthal, holds a shoebox-sized radiation detector against the side of a huge metal cargo container and waits a couple of minutes for it to tell him what he already knows: that there's plutonium-239 inside, potentially the makings for a nuclear bomb.

But nothing comes up on the device's small screen. And that's proof of what federal agents at the nation's seaports and border crossings know. Many of the mobile radiation detectors they use work only about 50% of the time.

Blumenthal's team is testing 30 mobile detectors against the metal sides of a half-dozen cargo containers. Some are loaded with weapons-grade material; others contain cat litter, ceramic tiles and other goods that set off detectors because they contain naturally occurring radioactive materials.

"This is the first time the government's been able to do high-fidelity testing" using actual bombmaking materials, such as plutonium and highly enriched uranium, Oxford says.

As tests are finished over the next several years, Oxford's team will use the results to retrofit existing equipment that doesn't work very well, to buy new equipment for federal agents and to write what Oxford calls a "*Consumer Reports*-style" guide so that state and local officials will know what to buy — and what not to buy — with federal grant money.

Oxford calls their work "a big leap forward." Among their efforts:

- Determining where radiation detectors should be set up worldwide.
- Making plans to better secure the nation's cities, perhaps through random highway stops — such as drunken driving or seatbelt checks — where officers would check cars with hand-held detectors or check trucks at weigh stations, something now done in just 11 states.
- Creating surge capacity so that if intelligence indicated a particular threat, the government could quickly put detection equipment in subway stations, at airports or wherever it was needed.

• [REPRINTS & PERMISSIONS](#)

**Find this article at:**

[http://www.usatoday.com/news/washington/2006-02-14-radiation-detectors\\_x.htm](http://www.usatoday.com/news/washington/2006-02-14-radiation-detectors_x.htm)

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**EXHIBIT 28**



Internet Explorer cannot display the webpage

Most likely causes:

THE WORKFORCE DEFENSE + HOMELAND SECURITY TECHNOLOGY MANAGEMENT + OVERSIGHT THE MAGAZINE SEARCH

**DHS official pushes launch of new nuclear detectors**

By Jon Fox Global Security Newswire April 12, 2007

NEW YORK - Heartened by recent test results in Nevada, the director of the Domestic Nuclear Detection Office said Wednesday he expects to recommend next-generation nuclear detectors be cleared for deployment in July.

The detection office, a division within the Homeland Security Department, is about halfway through a test run of new radiation detection technology at the New York Container Terminal in Staten Island.

The equipment scans seagoing containers to detect and identify radioactive material. The detectors have already undergone testing at the Energy Department's Nevada Test Site.

While DNDOD Director Vayl Oxford declined to describe the results of the February and March tests in any detail, he characterized the results as positive.

"We are very optimistic that when we go to [Homeland Security Secretary Michael Chertoff] this summer he will give us permission to go to production," Oxford said Wednesday during a tour of the Staten Island testing facility.

Detectors now deployed at the nation's ports and border crossings are adapted from technology used to detect radioactive material at scrap yards and other industrial sites. While reportedly very sensitive, they only alert to the presence of radiation and are unable to differentiate different types of radioactive substances.

That can become a problem when the machines alert to the naturally occurring radiation in materials such as granite, kitty litter or bananas. A container flagged for radiation must undergo a secondary screening process to identify the emitting material, which can take up to 20 minutes.

Port officials say there are 12 to 14 such alerts each day at the Staten Island facility, which handles 11 percent of the cargo flowing into the port of New York. At California's Long Beach port, Customs and Border Protection officials deal with as many as 400 such cases daily.

"We've got to make their life better," Oxford said.

The new detectors carry a hefty price tag of \$350,000 per unit, a significant increase over the \$80,000 the current machines cost.

Both the Government Accountability Office and Congress have questioned the benefits of the new system relative to the cost, and lawmakers have put a hold on a \$1.2 billion plan for deployment of 1,400 machines until DHS can confirm that the technology is effective.

Three firms have each received about \$15 million to develop competing prototypes of the new detectors, and despite congressional doubts Oxford expects to go to Chertoff with a recommendation for full-scale production in July.

By decreasing the number of necessary secondary inspections to a "mere fraction" of what is currently required, "we're going to be able to manage both the risk and the flow of commerce with these systems," Oxford said.

Oxford said the detection office plans to run about 10,000 containers through the test array at the Staten Island terminal. Three weeks into the testing, DNDOD officials have put about 5,000 containers through the system. Once the data is complete, they will then analyze the accuracy of the identification of radioactive material.

A GAO report released Monday said Oxford's office should systematically compile test data on the existing monitors to fully understand their benefits and limitations before making the multibillion dollar investment the deployment plan requires.

The report also recommends the office provide state and local authorities with information on radiation detection technologies to help them make more informed purchasing decisions.

"We strongly agree with this statement, as the DNDOD feels that bolstering preventive [radiological and nuclear] detection capabilities within the domestic interior is an essential part of our nation's defense," the detection office wrote in response.

Regarding the recommendation to compile testing data, Oxford said, "That's a prudent thing to do."

He added, however, that "some of that test data we've already looked at, and I'm not sure it's relevant to the decision we're making." Even as the office works to enhance the nuclear detection network at the nation's borders and ports, DNDOD officials are enlisting help from outside experts and the intelligence community to probe gaps in the system.

In some cases, that includes testing the systems and detectors by having people trying to smuggle real nuclear material. Tests with mock terrorists have already begun, said Huban Gowadia, the detection office's assistant director for assessment.



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**EXHIBIT 29**

washingtonpost.com

## Radiation-Monitor Study Sought

Chertoff Wants Cost-Benefit Analysis of New Security Machines

Advertisement

By Robert O'Harrow Jr.  
Washington Post Staff Writer  
Wednesday, August 1, 2007; D02

Homeland Security Secretary Michael Chertoff has ordered an independent review of efforts to develop and test radiation monitors to screen cars, trucks and cargo containers for signs of nuclear devices.

In a letter to several lawmakers, Chertoff said the review by a "highly experienced team of technical and programmatic" experts would examine test procedures and results, and the department's own analysis about whether new monitors with cutting-edge technology are worth \$1.2 billion in contracts announced last summer.

"This acquisition is a vital priority for the Department," Chertoff wrote to lawmakers Friday. "Given the national importance of this effort, I think it is important to have an independent review."

The department's Domestic Nuclear Detection Office had told Congress last year that the \$377,000 machines would detect highly enriched uranium 95 percent of the time, while the department's own tests show detection rates as no higher than about 50 percent.

A review by the Government Accountability Office later found that Homeland Security's optimistic report to Congress, about the cost and benefits of the new monitors, was based on assumptions instead of facts. In a March hearing, a GAO official said the information in the cost-benefit report "was incomplete and unreliable, and as a result, we do not have any confidence in it."

At issue is a highly technical debate about whether the machines, Advanced Spectroscopic Portal radiation monitors, can significantly improve detection of different kinds of radiation. Since 2001, the government has spent more than \$200 million on detection equipment that often cannot distinguish nuclear devices from more benign sources of radiation, such as ceramic tiles and cat litter.

In announcing contracts with three companies last year, after submitting the cost-benefit report to Congress, Chertoff said the machines would sharply improve detection while cutting false alarms that led to traffic delays at border crossings. Congress released funding for the effort after the report.

After the GAO raised questions about the report, Congress mandated that Chertoff personally certify their effectiveness before full deployment.

In a recent interview, Vayl Oxford, director of the nuclear detection office, said there has been a "dramatic decrease" in false alarms in recent screening of cargo containers. He said his office plans to deliver new test results to Chertoff in September.

On Friday, Chertoff asked the Defense Department's Defense Threat Reduction Agency to form the "team of experts" who can provide the independent review of those test results, according to a letter to the agency that the Defense Department released yesterday.

Oxford was deputy director for technology development at the Defense Threat Reduction Agency before



**EXHIBIT 30**

washingtonpost.com

**Review of Radiation Detectors Questioned**

Advertisement

By Robert O'Harrow Jr.  
Washington Post Staff Writer  
Thursday, August 16, 2007; D03

Tension continues to grow between Congress and the Department of Homeland Security over a \$1.2 billion contract for new radiation monitors to screen trucks, cars and cargo containers for signs of nuclear weapons.

The Government Accountability Office has questioned the department's testing of the detection equipment, spurring Congress to delay funding last year pending further review and certification of the department's test results this fall.

In a sharply worded letter to the undersecretary for management, the chairman of the House Committee on Energy and Commerce took issue with a plan announced by the department two weeks ago to have an outside review of the project and test results by the Defense Threat Reduction Agency.

Chairman John D. Dingell (D-Mich.) and another lawmaker said in the Aug. 10 letter that it appeared as though the Homeland Security Department were trying to do "an 'end run' with hastily planned and initiated 'independent review,' " instead of allowing the GAO to finish a study that is expected to be critical of the department's initiative. The GAO's report is to be delivered to Congress this month.

"On its face, it would appear such efforts are nothing other than an attempt to lessen the impact of potentially bad news from the GAO report," said the letter signed by Dingell and Rep. Bart Stupak (D-Mich.).

Yesterday, other lawmakers in the Senate and House also sent a letter to Homeland Security Secretary Michael Chertoff that raised questions about the department's plans for the outside review. That letter urged the department to cooperate with the GAO study, saying that "an independent evaluation by GAO will best serve the oversight responsibilities of Congress and ensure public confidence in your ultimate decision."

In a statement, Sen. Joseph I. Lieberman (I-Conn.), chairman of the Senate Homeland Security Committee, said the project "involves some highly technical issues. Getting a second opinion from a panel of experts can only be helpful.

"We also need GAO to do what it does best: ask the tough questions and provide Congress with the facts," he said. "That is the best way to ensure that this critical program succeeds."

The letters are the latest salvos in an ongoing dispute over the department's handling of the radiation detection project, an effort that has been described as one of the nation's top security priorities. Three contractors were named as vendors in the \$1.2 billion award announced by Chertoff and Vayl Oxford, director of the department's Domestic Nuclear Detection Office, last summer.

Since then, GAO auditors have repeatedly questioned the department's procedures for testing the detection machines that would replace the monitors in use at ports, border crossings and elsewhere.



**EXHIBIT 32**



INSIGHT & ANALYSIS FOR HOMELAND SECURITY DECISIONMAKERS

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**WASHINGTON TODAY**

**DHS Awards Advanced Radiation Detector Contracts**

By **Mickey McCarter**, *HSToday* Senior Washington Correspondent

The Domestic Nuclear Detection Office (DNDO) Friday announced contract awards to three corporations for the production of the next generation of radiation-detecting portals for radioactive shipments being carried with little or no shielding across US borders or into US cities.

DNDO awarded the contracts worth an estimated total \$1.15 billion to Raytheon Co. of Waltham, Mass.; Thermo Electron Corp. of Waltham, Mass.; and Canberra Industries in Meriden, Conn., DNDO Director Vaji Oxford said at a press conference in Washington, DC. Each of the three companies will research and develop radiation detectors for the DNDO's Advanced Spectroscopic Portal (ASP) Program under their contracts, which consist of one base year for research and development and four additional years of systems acquisition.

"The priority for the first year...is to get units out immediately," Oxford reported. "We are ordering 80 units initially into New York container terminal. We're also taking some out to our permanent test bed in the Nevada test site for follow-on testing, as well as—starting early in this calendar year, we'll begin deploying these systems to Customs and Border Protection (CBP) into the secondary screening locations."

DNDO initiated the ASP program to produce detection equipment that could better differentiate between radioactive materials that pose a threat to the United States versus materials that do not in order to halt the use of weapons of mass destruction inside US borders. CBP will deploy the systems at US ports of entry, while the Department of Energy will deploy them overseas through its Mega-parts Program.

Homeland Security Secretary Michael Chertoff announced that his department also would help cities deploy the monitors.

"And to address that next level of concern, we are unveiling our Securing the Cities Initiative, which is a program to see how we can deploy this kind of detection equipment, not only at seaports and ports of entry by land, but in cities and around cities, so we could detect a truck coming into a city with a dirty bomb, even if it didn't cross an international border," Chertoff said.

**Deploying Portals**

Raytheon and Thermo Electron will produce sodium-iodide systems at an estimated cost of about \$350,000 per unit while

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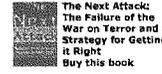
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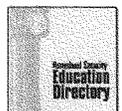
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Daniel Benjamin and Steven Simon do not mince words; America's foreign policy vis-a-vis the Muslim world is bankrupt and has "cleared the way for the next attack and those that will come after." By invading Iraq, the authors argue, the US demonstrated a profound misunderstanding of the scope of the threat posed by Al Qaeda and other jihadist groups, and has turned Iraq into a "country-sized training ground" for terrorists



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Canberra will produce high-purity germanium systems for about \$500,000 or more per unit, Oxford described.

Raytheon and Thermo Electron released press statements Friday, describing their general approach to supporting the ASP program.

Raytheon Integrated Defense Systems (IDS), which has teamed up with Bubble Technology Industries for the program, noted that the initial funding for ASP is \$18.2 million.

"This contract represents the opening of a significant new market for Raytheon and our partners," said Raytheon IDS President Dan Smith. "We are committed to providing the best solutions with our core expertise in system engineering and integration, manufacturing, program management, and breakthrough technologies to protect the homeland. We look forward to providing a reliable, affordable, and highly effective portal screening system that will guard our nation against illicit threats."

Thermo Electron revealed that the first funding of the contract for its portals represented \$14.6 million.

"Our partnership with the U.S. Department of Homeland Security [DHS] is a testament to Thermo's strategic commitment to providing the most advanced radiation measurement and detection solutions for our nation's current and future security needs," said Marc Casper, Thermo Electron's senior vice president. "Thermo's ability to leverage a seasoned work force and its experience in radiation portal production means the company is well positioned to support the government's large-scale deployment plans, which could result in more than \$200 million in revenue over the next five years."

Chertoff estimated that DHS would screen between 80 and 90 percent of all containers entering the United States from sea or land with radiation detectors by the end of the year. DHS would reach close to 100 percent screening by the end of 2007, he added.

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**EXHIBIT 35**

**Response to Dwight Cates, House Energy and Commerce Committee  
GAO Investigation of ASP**

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*Why were the results of the following tests not provided to the GAO?*

- Results of the "blind test" conducted at the Nevada test site that was conducted in March/April of this year;
- NIST Report on Phase 3;
- Output results from the ASPs testing at the port of New York.

*Provide a roster of who attended the big "9 hour" meeting (assume this refers to the Technology Summit on June 27)*

The results of the tests were not provided to the GAO because the test reports were / are in the process of being finalized. As previously presented during briefings to Congressional Members and staff, the final report date for both the blind test and the Phase III test is August 31. The results from the stream of commerce testing at the New York Container Terminal (NYCT) were recently finalized and are undergoing the clearance process that will allow us to release the document. We anticipate that the NYCT report will be available for review by mid-August. We anticipate the Phase III and blind test reports to be available for review by mid-September.

DNDO hosted a Technology Summit on June 27th. There were 25 participants, including individuals from the Department of Energy (DOE) National Nuclear Security Administration (NNSA) and NA-25, the Second Line of Defense Program; Oak Ridge National Laboratory (ORNL); Pacific Northwest National Laboratory (PNNL); and Sandia National Laboratory (SNL). Also present was Gene Wisnoski from the GAO and Chris Knauer from House E&C Committee.

Please see below for the full attendee list.

<u>Name</u>	<u>Affiliation</u>	<u>Name</u>	<u>Affiliation</u>
Kate Anderson	DNDO	Elly Melamed	DOE/HQ
John Blackadar	DOE NNSA	Dean Mitchell	SNL
Dan Blumenthal	DNDO	Tracy Mustin	DOE NNSA
Chris Blessinger	ORNL	Patrick Philbin	DNDO
Christa Brzozowski	DHS/HQ	Caroline Purdy	DNDO
Holly Dockery	DHS/HQ	Dave Saunders	DNDO
James Ely	PNNL	Patrick Simmons	DNDO
Debbie Frye	DHS/HQ	Eric Smith	PNNL
Bruce Geelhood	SRS	Jay Spingarn	SNL
Joan Gerrard	DOE NA-25	Jim White	ORNL
Julian Hill	DNDO	Gene Wisnoski	GAO
Andrea Hoshmand	DNDO	Rob York	ORNL
Chris Knauer	House E&C		