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PROPOSED RECONFIGURATION OF THE NATIONAL DEFENSE STOCKPILE

HEARING

BEFORE THE

READINESS SUBCOMMITTEE

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

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PROPOSED RECONFIGURATION OF THE NATIONAL DEFENSE STOCKPILE

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
READINESS SUBCOMMITTEE,
Washington, DC, Thursday, July 23, 2009.

The subcommittee met, pursuant to call, at 9:30 a.m., in room 2118, Rayburn House Office Building, Hon. Solomon P. Ortiz (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. SOLOMON P. ORTIZ, A REPRESENTATIVE FROM TEXAS, CHAIRMAN, READINESS SUBCOMMITTEE

Mr. ORTIZ. The subcommittee will come to order.

Today the Readiness Subcommittee meets to receive testimony on the proposed reconfiguration of the National Defense Stockpile (NDS). I thank our distinguished witnesses from the Department of Defense (DOD) and the Institute of Defense Analyses (IDA) for appearing before the subcommittee today to discuss management of the Nation's stockpile of critical materials.

So thank you so much for joining us this morning.

As we will discuss today, the concept of a Federal Government's stockpile has been in existence for nearly a century. The size and intent of the National Defense Stockpile has fluctuated based on both geopolitical and security pressures.

Based on this pressure, stockpile requirements have ranged from as low as $24 million to as high as $17 billion.

In recent years, a sharp decline in requirements resulted in a significant disposal program begun in fiscal year 1982–1992 and continued through the fiscal year 2006, during which more than $6 billion worth of materials were sold.

Stockpile management and policy at various times in the past 70 years have fallen into the domain of a number of different Federal agencies, from the Treasury Department to the General Services Administration and the Federal Emergency Management Agency, known as FEMA. In 1988, Congress transferred both stockpile policy and operations to DOD.

Although current policy oversight for the stockpile remains with Under Secretary of Defense for Acquisitions, Technology and Logistics (AT&L), the authority for management of the operational aspects of the stockpile has been delegated to the Defense Logistics Agency (DLA). All of this background is relevant because today we find ourselves in a world where China has emerged as a significant economic entity.

Increased requirements in developing nations have led to sharp price hikes for many strategic and critical materials. At the same time, both commercial and military manufacturing firms in the United States are reporting shortages of materials needed for defense production.

In this environment, the current stockpile statutory management structure may not be sufficiently flexible to respond to critical defense industrial needs. In 2006 and 2007, Congress asked the Department of Defense to review its current stockpiling strategy.

This review included the possibility of reconfiguring the stockpile and proposing changes in the Stockpiling Act to allow for stockpile requirements based on economic purposes in this time, none where related stockpiling is prohibited under current law, the Strategic and Critical Materials Stockpiling Act of 1979. A preliminary report to Congress found a lack of information detailing which materials were forecasted to be required for future weapons systems, domestic production capacity, and alternatives for addressing shortfalls.

The April 2009 report on the proposed reconfiguration of the National Defense Stockpile, which we are addressing in this hearing, is the result of the Department's work in response to congressional inquiry. The Department's goal for a restructured stockpile would be to create the ability to leverage the buying power of the Department of Defense and other cooperating Federal agencies by combining materials requirements, negotiating long-term strategic sourcing arrangements and enabling planners to capitalize on favorable market, world market conditions.

To accomplish this, the Strategic and Critical Materials Stockpiling Act would have to be modified by Congress to enhance program flexibility. The subcommittee recognizes the need for managing strategic and critical materials to sustain major weapons systems. But the question is, where should the management of a strategic material program reside?

While the Department may have the necessary internal competency to determine material requirements, the core mission of the Department does not include market management. Nor does the Department function as a holder of significant national stockpiles for other Federal departments and agencies. The United States Government may have sufficient knowledge and mission capabilities outside of DOD to support a strategic material program. These are the issues that we will be exploring today.

But before I introduce the witnesses, let me yield to my good friend, the ranking member, Mr. Forbes, for any statement that he would like to make.

Mr. Forbes.

[The prepared statement of Mr. Ortiz can be found in the Appendix on page 33.]

STATEMENT OF HON. J. RANDY FORBES, A REPRESENTATIVE FROM VIRGINIA, RANKING MEMBER, READINESS SUBCOMMITTEE

Mr. FORBES. Thank you, Mr. Chairman.

And once again, I want to thank you for your leadership and applaud you for having the vision to bring issues before this sub-

committee that are absolutely critical to the readiness of our military forces and our national security, even though they may not be the most glamorous or sexiest issues of the day. Today's hearing is one such topic.

It is one of those things that no one really talks about or worries about until something goes wrong. It is at that point, the point we don't have the steel to build Mine Resistant Ambush Protected (MRAPs) vehicles, or the rhenium we need to build a Joint Strike Fighter (JSF) engine, that the stockpile becomes critically important. So, although a discussion on the stockpiling of manganese, tungsten or rhenium may seem esoteric, the underlying need is basic, and this hearing is very important.

As you noted, the Department's April 2009 report to Congress concluded that reconfiguration of the National Defense Stockpile is necessary to respond fully to evolving conditions in the world markets and to rapidly changing requirements for both traditional and new materials.

The report lists several potential changes, and we are here today to discuss these potential changes and get further understanding of what the Department sees as a desired end state for the stockpile. Since it was established by the Strategic Materials Act of 1939, the stockpile has experienced a roller coaster ride of reductions and buildups. Stockpile requirements are driven by a large number of factors that range from the health of global financial markets to potential for localized civil war in a country that is the sole source of a crucial material.

The complexity of setting stockpile requirements is, in itself, extraordinary. The proposed changes would modify and create programmatic flexibility and allow stockpile acquisitions and disposals on the basis of current market conditions. This alone would increase this complexity by an order of magnitude. Furthermore, moving toward an integrated interagency approach to strategic materials management would likely broaden stockpile requirements and further complicate stockpile management.

I am very concerned that we do not have personnel in the Department of Defense or elsewhere in the Federal Government with the expertise necessary to manage and integrate its stockpile with latitude to enter and exit as market conditions allow.

DOD's proposed reconfigured stockpile would, "be founded on an interagency collaborative approach and bolstered by use of experts in timely market research and intelligence."

While I applaud efforts to improve management of this asset that is absolutely critical to national security, I do have concerns that, in reality, this vision may not be wholly achievable through one sweeping reform initiative.

I would like to thank our witnesses for being with us today to share some of their expertise with all of us. As I alluded to earlier, this is an area where we cannot afford to go wrong. It is vital that we understand what it takes to achieve the goal set forth, while we also strive to identify the unintended consequences of our actions, and your testimony today is a crucial part of that.

It is my understanding that, in order for this proposed reconfiguration to take place, this body will have to take legislative action. I hope our witnesses will be able to also share their thoughts and

views on potential legislative actions required to improve stockpile management.

With that, Mr. Chairman, I once again thank all of our witnesses. Thank you for having this hearing, and I yield back the balance of my time.

[The prepared statement of Mr. Forbes can be found in the Appendix on page 36.]

Mr. ORTIZ. Thank you.

Our distinguished witnesses today are Mr. Rick A. Lowden, Senior Materials Analyst for the Office of the Deputy Under Secretary of Defense for Industrial Policy; Mr. Cornel Holder, Administrator, National Defense Stockpile Center, Defense Logistics Agency; and Dr. James S. Thomason, Senior Analyst and Projects Director, Strategy, Forces and Resources Division, Institute for Defense Analyses.

Mr. ORTIZ. Mr. Lowden, whenever you are ready, you can begin your testimony.

STATEMENT OF RICHARD A. LOWDEN, SENIOR MATERIALS ANALYST, OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE (INDUSTRIAL POLICY), U.S. DEPARTMENT OF DEFENSE

Mr. LOWDEN. Thank you, sir.

Good morning, Chairman Ortiz, Ranking Member Forbes, and distinguished members of the subcommittee.

I am Rick Lowden, the senior materials analyst from the Office of the Deputy Under Secretary of Defense for Industrial Policy.

Prior to arriving in my current position, I served as a materials engineer at the Oak Ridge National Laboratory. I appreciate the opportunity to appear today to describe Industrial Policy's role in the reconfiguration of the National Defense Stockpile and in the development of a plan for managing strategic materials for the Department of Defense.

Industrial Policy's mission is to make certain the industrial base on which the Department of Defense depends is reliable, cost-effective and sufficient. More specifically, Industrial Policy is responsible for ensuring DOD policies, procedures and actions both stimulate and support vigorous competition and innovation in the defense industrial base and that these policies help establish and sustain cost-effective industrial and technological capabilities that assure military readiness and superiority.

Currently, strategic and critical materials are the subject of intense discussion within and outside the Department. Since 2003 and until the recent economic downturn, metal prices had risen sharply. The prices of both titanium and molybdenum, metals required for many important defense systems, increased from around $5 per pound to over $30 a pound. The price of rhenium, a metal needed for high-temperature alloys used in jet engines, had at one point increased by over 1,000 percent. The availability of certain materials, such as the rare earths used in high-performance, high-strength magnets has been the subject of many recent inquiries.

Because of its importance to this discussion, I would like to take some time to talk about the definition of strategic material. The concept of materials being of importance to national security is not

new. The scarcity of crucial materials during World War I prompted the Assistant Secretary of War to prepare a list of strategic materials described as the "raw materials essential for the prosecution of war, which cannot be procured in sufficient quantities from domestic sources and for which no domestic substitution has been found."

In the legislation governing the stockpile, strategic materials are defined as, "materials that would be needed to supply the military, industrial and essential civilian needs of the United States during a national emergency and are not found or produced in the United States in sufficient quantities to meet such need."

There are additional definitions of strategic material. However, all share two common elements: criticality of application, we need the material; and, second, vulnerability of supply, the material may not be available.

It would appear that the definition of strategic material is clear and the implication is obvious. However, many factors can complicate interpretation of this terminology. Recently certain metals were given special consideration in Section 2533b of Title 10 of the United States Code, enacted under Section 842 of the John Warner National Defense Authorization Act for Fiscal Year 2007.

The amendment provided a list of specialty metals that are strategic materials critical to national security. This association appears to have caused some confusion regarding the definition of strategic material. The specialty metals presented in the provision are clearly strategic materials. However, the list of strategic materials is not limited to these specialty metals. There are many additional metals and non-metallic materials that could also be considered strategic.

The John Warner National Defense Authorization Act for Fiscal Year 2007 also directed the Secretary of Defense to establish a Strategic Materials Protection Board to analyze the needs and risks associated with materials designated as critical to national security and to recommend strategies to ensure the availability of these materials. The Secretary of Defense delegated responsibility to the Under Secretary of Defense for Acquisition, Technology and Logistics to chair the board, who then delegated to the Deputy Under Secretary of Defense for Industrial Policy responsibility to act as the board's executive secretary. The delegation of this responsibility explains Industrial Policy's connection to the reconfiguration of the stockpile and involvement in other matters concerning strategic and critical materials.

The statute that established the board does not define materials critical to national security. Therefore, in order to distinguish between terms, the board developed definitions to be used for its purposes.

The board determined that for a material to be designated as strategic, that material should meet certain technical criteria. First, the material should be essential for important defense systems; and, secondly, it must be unique in the function it performs. In other words, there are no viable alternatives.

This definition is consistent with respect to the earlier definitions that include the aspect of criticality of application. But unlike earlier variants, it does not include a vulnerability of supply factor.

The board's definition of strategic materials is thus less restrictive and expands the list of materials that would be considered strategic. It must be noted that additional criteria, such as vulnerability of supply, would have to be considered in order to elevate a strategic material to a higher level of concern.

To ensure consistency for the various Department activities and complete the congressional reporting requirements related to strategic materials in the stockpile, the Strategic Materials Protection Board's executive secretary established the Strategic and Critical Materials Working Group. The working group, chaired by the Deputy Under Secretary of Defense for Industrial Policy, conducted the requested analyses and prepared the report that was submitted to Congress in April. The working group was dissolved upon completion of that report.

The working group, the working group developed a new process by which the strategic and critical materials required for national defense can be identified, supply chain risks analyzed, and mitigation strategies selected and applied. The working group employed a lengthy, deliberative process to collect material information from a wide variety of sources and construct an initial list of strategic materials using the board's technical definition as a guide.

The initial list included a total of 128 materials, which was a more comprehensive list than had previously been assembled. Vulnerability or security of supply criteria were then applied to this list to assess risks and vulnerabilities associated with the supply of these materials and also determine which materials were of concern and may require application of risk mitigation strategies.

The Strategic Materials Protection Board played an important role in the development of this new process and will continue to participate in the implementation of a strategic materials management system. The board will support a new process by requiring military services participate in the maintenance of the list of material needs and requirements and identification of possible risks and vulnerabilities associated with those materials. It will continue to review and validate material requirements with the process linked to the Quadrennial Defense Review cycle.

Any new system for managing strategic materials must be dynamic and proactive. As the Department's requirements change, the list of materials essential to the strategic defense interests of the United States will also change, and, thus, the methods by which the supply chain risks are monitored, measured and mitigated must also change.

In addition to traditional stockpiling, new and unique acquisition strategies, such as buffer stocks, vendor-managed inventories and strategic purchases, will be needed to ensure reliable, cost-effective and sufficient supply of strategic materials.

We must look beyond traditional stockpiling methods and select and apply the most effective and efficient methods to manage the materials essential to national defense. This is our challenge, and we look forward to working with Congress and this subcommittee on this endeavor.

I thank you for the opportunity to testify to the subcommittee. I sincerely appreciate your time and your interest, and I will be happy to address any questions you may have for me.

[The prepared statement of Mr. Lowden can be found in the Appendix on page 38.]

Mr. ORTIZ. Mr. Holder.

STATEMENT OF CORNEL A. HOLDER, ADMINISTRATOR, NATIONAL DEFENSE STOCKPILE CENTER, DEFENSE LOGISTICS AGENCY, U.S. DEPARTMENT OF DEFENSE

Mr. HOLDER. Good morning, Mr. Chairman and distinguished subcommittee members.

I am Cornel Holder, Administrator for Defense National Stockpile Center, a field activity of the Defense Logistics Agency.

The Defense National Stockpile Center administers the storage and disposal of strategic and critical materials to support national defense. The stockpile operates under the Strategic and Critical Materials Stockpiling Act. I welcome the opportunity to discuss the stockpile to specifically discuss the proposed reconfiguration.

The stockpile dates back to World War I, when shortages caused an imbalance in production schedules and program delays. Over the years, the stockpile has been administered by different agencies. In 1988, the responsibility for the National Defense Stockpile was delegated to the Secretary of Defense with the Under Secretary for Acquisition, Technology and Logistics designated as stockpile manager. Program operations were assigned to Defense Logistics Agency, and the Defense National Stockpile Center was established to manage the program.

Stockpile material requirements were based on military and national security scenarios, which resulted in the stockpile having periodic buildups and reduction phases. In 1992, the requirement determination process concluded most of the materials held in the stockpile was excess to defense, industrial, and essential civilian needs.

Since then, the sale of the materials in the stockpile have totaled in excess of $6.4 billion. In 1994, there were 90 commodities stored in 85 locations; today, there are 24 commodities stored in 11 locations, and the current inventory value is about $1.4 billion.

Concerns regarding the low availability of strategic and critical materials prompted the Department to commission the National Academy of Science to conduct an independent analysis. Results of the study indicated a new stockpile strategy was needed.

Following this study, the DOD established a Strategic Materials Working Group. The working group was chaired by the Deputy Under Secretary for Industrial Policy and included representatives from each of the military services, the Joint Staff and other Department representatives. The United States Geological Survey, the Department of Commerce, and the Institute for Defense Analyses performed research and analysis on behalf of the group.

The resulting report submitted to Congress in April 2009 concluded the National Defense Stockpile policy required change. The working group assessment indicated that material management is a complex and rapidly changing field. Increasing global competition for raw materials had added new complexity. The global demand for scarce raw materials and the industrial surge in developing countries required the United States to use a new integrated and

responsive strategy for identifying and ensuring advocate supply of strategic and critical materials for national defense.

The proposed change being considered included an expanded interface with other Federal agencies, greater latitude in entering and exiting the market, and a flexibility to develop risk-mitigation strategies. The Department has developed a comprehensive Strategic Materials Security Management System that would identify, on an ongoing basis, those materials required for national security.

This system would be founded on interagency collaborative approach and bolstered by the use of experts and timely market research and intelligence. The system would employ an integrated risk-assessment construct, compare demand to supply, analyze supply chain vulnerabilities. This would allow identification of defense mitigation strategies to ensure an adequate and timely supply of those materials.

Challenges to the implementing of the Strategic Materials Security Program includes ensuring the Department has programmatic flexibility to acquire the right materials efficiently and effectively, and to ensure that essential strategic materials are available to respond to current future needs and threats.

In closing, I would like to thank you for the opportunity to discuss the Department's strategy to reconfigure the National Defense Stockpile, and I look forward to working with Congress as we implement this vital program.

I stand ready to answer any questions you may have.

[The prepared statement of Mr. Holder can be found in the Appendix on page 44.]

Mr. ORTIZ. Thank you.

Dr. Thomason.

STATEMENT OF JAMES S. THOMASON, SENIOR ANALYST AND PROJECTS DIRECTOR, STRATEGY, FORCES, AND RESOURCES DIVISION, INSTITUTE FOR DEFENSE ANALYSES

Dr. THOMASON. Good morning, Chairman Ortiz and Ranking Member Forbes, and other distinguished members.

My name is Dr. Jim Thomason of the Institute for Defense Analyses (IDA) in Alexandria, Virginia. I am honored to testify before you today to summarize key findings from IDA's research on the National Defense Stockpile.

IDA did research for DOD last year on three specific things in this area, assessing DOD's ongoing needs for a range of key materials; building and testing an initial risk framework forevaluating the risks DOD and the U.S. government would face in obtaining enough of such materials in war and in less-than-full-war conditions; and offering recommendations for reconfiguring the stockpile based on these assessments.

I led an IDA team to do this work drawing on the best available evidence. We have provided DOD with our independent analysis and recommendations, and I am pleased to provide highlights of them for you today. Portions of our research were included by DOD as appendices B and C in the NDS reconfiguration report that you are considering today.

Our research suggests two major points relevant to this subcommittee's purpose today. First, the magnitude of DOD's pur-

chases of strategic and critical materials warrants an ongoing program of analysis to promote purchasing efficiencies. DOD buys numerous materials that are broadly known as strategic and critical. Some of IDA's initial assessments of these ongoing purchases are provided in appendix D—B of the reconfiguration report, and that appendix shows that DOD annually buys three-quarters of a million tons of strategic and critical materials every year.

A second major point is that, while the current basis for estimating NDS requirements, in the 2005 requirements report, for example, centers on potential shortages in a full-scale national security emergency, such a focus may be too narrow. The future challenge space, as I call it, for assessing such material needs, both essential defense and civilian, and associated risks, also ought to encompass a range of less than full-scale emergency conditions. These additional situations could plausibly include potential material supply disruptions due to natural disasters, political instability in key foreign countries, and selective terrorist attacks.

IDA has made several recommendations to DOD regarding potential scenarios and has provided initial results of risk assessments using some of them.

Based on its analyses, IDA recommended that DOD consider establishing a materials security program, including a component focused on leveraging DOD's significant buying power in various materials markets to reap potential economies of scale and savings for taxpayers; a component that would regularly assess risks to material supplies across possible disruption scenarios ranging from near peace to full-scale war.

This component would also assess risk-mitigation strategies such as stockpiling, as in the NDS, but these strategies could also include making special contingency supply arrangements with trusted producers; working out expedited supply procedures, such as under a defense priorities and allocation system; exploring material substitution possibilities; and, when warranted, investing in domestic production capacity.

Failure to use practical risk-mitigation strategies such as these could degrade our force's materiel readiness, which in turn could inhibit operational performance of the U.S. military at key times.

A final component of such a materials security program would work closely with major DOD materials users, chiefly the services and defense agencies, but also the combatant commanders, to monitor DOD's regular and emergency demands for and supply chains of both traditional materials and leading-edge advanced materials. With a strong collaborative partnership of this kind, the fragility of material and vital parts supply chains for essential military and civilian needs will be better understood than they are today, and the risks to materiel readiness and national security should be better mitigated as well.

This concludes my opening statement, Mr. Chairman, Mr. Forbes, distinguished members. Thank you very much for inviting me to summarize our research on this important proposal this morning. I would be pleased to respond to any questions that you may have about these assessments and recommendations.

[The prepared statement of Dr. Thomason can be found in the Appendix on page 53.]

Mr. ORTIZ. Thank you, Doctor.

It might not be a very glamorous hearing, but you guys play a very important role. Just like when you are driving, you don't want to run out of gasoline. You have got to have the material that you need.

But, Dr. Thomason, based on your research into the risks associated with the continuous supply of strategic materials, is a proposed reconfiguration a good idea which DOD should exercise? If you could elaborate a little bit on that.

Dr. THOMASON. Mr. Chairman, IDA has done assessments and made recommendations for a reconfigured program with three major components, those that I outlined in my testimony just now.

I believe that the reconfiguration proposal that DOD has submitted incorporates all of those major elements and, in that sense, from my standpoint, from IDA standpoint, is a very strong proposal.

I cannot speak to the other elements because we weren't asked to assess them, but I would say that, overall, IDA's position is that this reconfiguration proposal is a very worthwhile and overdue reconfiguration.

Mr. ORTIZ. How would this plan overcome the risk that your research has identified?

Dr. THOMASON. The risk framework that IDA offered in the context of the research that we did last year is an initial step in the sense that it works to identify shortages under both national security emergency conditions pursuant to Section 14, as well as addresses potential shortages under conditions of less-than-full-scale emergency conditions. It is a first step, because beyond addressing the shortages that could arise, there is the very important question of the connection between those shortages, those delays, for example, potential delays, and materiel readiness shortages for the Department of Defense and the impact on operational performance.

That is an area which I believe DOD is very, very interested in extending and developing in the context of this proposal. And I believe that is a well warranted extension, and close collaboration with the components and with the combatant commanders will serve that purpose and that connection very well.

Mr. ORTIZ. Do you know, in the past, there were different agencies, like the Treasury Department, the General Services Administration and FEMA involved in the past? I know that that we are trying to see how we can do it better now. Do we only have one budget now to look at all the stockpile and the buying and the selling. Can you elaborate how that works?

Dr. THOMASON. Mr. Chairman, I would defer to the DOD representatives for that question.

Mr. ORTIZ. Mr. Holder.

Mr. HOLDER. The current construct of the stockpile right now does not meet today's global environment.

One of the things that we feel is that the stockpile base itself is based on war scenarios and which we must respond to. We feel that today's military must meet national defense threats whenever they would occur. And, therefore, we feel that is important that we basically must transform the National Defense Stockpile to this new program, strategic materials program, in order to basically be

able to secure the materials that it is going to need for current and also for the future.

Let me just give you an example of why we think it is important this program is basically transformed. For instance, military services came in and was looking for tungsten in order to service the MRAP program. Tungsten is one of those commodities that is used basically in shielding a material. And one of the things is that we could not base a supply of tungsten to them because of the current construct of the stockpile, whereas because of the fact that material had to be considered in excess or that material had to be a Presidential release from the stockpile to be able to get to the military services or it had to be legislated to be able to get to services. So the services basically had to buy that material in open market.

And in addition to that, one of the things that is one of the restrictions is also the amp ceiling level, whereas the material that—the quantities they wanted, basically we could not supply because the ceiling level basically had a cap on it. So regardless of the quantity that they wanted it and the restrictions of release, the services were not able to, basically, obtain material from the National Defense Stockpile, and they basically had to go on the open market and basically pay a higher cost for that material.

Mr. ORTIZ. And the reason I ask is because most of us, when we go grocery shopping, you know, we just want to be sure that you can take advantage of the material that you might need. You might be able to get a bargain sometimes.

So, in my statement, I mentioned that, based on the pressures that you have, these stockpile requirements that range from as low as $24 million to $17 billion, so we just want to be sure, maybe those bargains don't come often, but if they do come, that you have enough money to buy and then, of course, you sell.

Mr. HOLDER. Well, we have been selling off materials from the stockpile since 1993, and that is because, based on the scenarios that were given and the report that was given indicated that a majority of those materials in the stockpile were considered in excess to the Department of Defense needs.

Because it was considered in excess to the Department of Defense needs, we began an aggressive sales program. And from the aggressive sales program, we basically have sold off, again, from 90 commodities to 25 commodities. One of the things we are now doing in the Department is that we have assessed the materials within the Department.

We basically have looked at materials, the current inventory within the Department, and we have basically used an assessment of looking at, is it 100 percent import dependent? Is there a vital substitute to those commodities? Are there geopolitical issues that may affect the supply chain?

The Department basically suspended 13 commodities and also funded a reconfiguration study. We identified another 39 commodities that needed to be more further studied. So we are taking initial steps in order to address some of the issues, but there is more work needed to be done.

Mr. ORTIZ. We will probably come back with more questions, but I don't want to take all the time. Mr. Forbes, go ahead.

Do you have any questions?

Mr. FORBES. Thank you, Mr. Chairman.

And as all of our witnesses have heard several times over, this might not be a glamorous hearing, but if something goes wrong down the road, somebody is going to be digging up this hearing and saying, what did everybody say and why did we have that problem? So we appreciate you being here and appreciate your expertise.

But the other reason we are excited to have you here is because this is the one chance that we get to ask you to take off your agency coats, and we get to look at you and say, tell us what you think with your years of experience and expertise in this.

And so that is the framework or the premise of the two questions that I would like to pose to you. And one of my questions has a number of components to it. So if you don't feel comfortable answering it today, you can just get back to us in writing with it, or if you do, that is fine. But I think we can all agree that the current approach to stockpiling critical and strategic materials can be improved.

And as we have mentioned and you have heard from all of us, we really appreciate all the work you have done to bring forth these recommendations on what a reconfigured stockpile should look like. However, the piece that I am missing is the path of how we get there. You know, the devil is always in the details.

So I would ask you this, what steps need to be taken and in what order to ensure that we get it right? Is it best to take a measured approach, or do you recommend we leap in kind of with both feet and make those changes with one action? And what are the global economic impacts to this transition? How does Congress maintain oversight both during the transition and after the reconfiguration takes place? That is one question with this component.

The second one is I had an expert in my office just yesterday or the day before yesterday who had just come from testifying before the Federal Reserve, I think for about 2.5 hours, but he was, very, very concerned about our mining policies now across the United States and the direction he saw them moving and the difficulty that that was going to place us in for strategic materials down the road.

Could you elaborate as to whether or not you see that as a problem that could pose difficulties for us in our stockpile capabilities down the road? And any of you, any order is great.

Mr. HOLDER. The implementation process, again, we have started already. The implementation meaning that we have identified materials within the stockpile, and we have made an assessment of those materials, and, again, the Department basically has suspended 13 commodities for right now in order to do the assessment on those commodities. In addition, the study reflected that we need to do more studies on 39 materials.

Also the next step would be to look at our current requirement determination process, which we need to align that to the Quadrennial Defense Review (QDR). Align it to the QDR to be able to determine what are the defense planning priorities for the future.

Then we can basically do another requirements report to determine what are the potential material shortfalls. Once we know what our potential shortfalls are and we can do assessments of

those materials to determine what should be the risk-mitigation strategies for those materials for the future.

This would, again, be a very collaborative approach with the industry experts and also with the government experts to be able to look at the requirements and look at the military services requirements and be able to look at industry requirements to get a better handle, a better assessment of those and apply those strategies, risk-mitigation strategies, such as office stocks, such as long-term contracts such as better management type stocks and versus traditional stockpiling, as we currently do right now. So that is one of the paths we are looking at moving forward.

As far as for congressional oversight, we believe the Congress will still have congressional oversight because of the fact we will—we will send up the annual—annual material operation report. In that report, it basically gives you an idea of what the stockpile has done within a given fiscal year.

In addition to that, we will send a requirements report and the requirements basically tells you what materials we are looking at for potential shortfalls, and we will be looking at designating supply and risk mitigation strategies to those materials that have been identified. Any release from the stockpile also will—we will basically tell Congress, we will give Congress notification of the release of the material from the stockpiles. So Congress will continue to have oversight over the program.

Mr. FORBES. Do any of you see any problems with our current mining policies and the directions they may be going as far as it would impact stockpiles?

Mr. LOWDEN. I would like to defer that and get back to you with that.

[The information referred to can be found in the Appendix on page 65.]

Mr. FORBES. Sure. We would be happy to do that.

With that, Mr. Chairman, I yield back, and thank you, gentlemen.

Mr. LOWDEN. Sure.

Dr. THOMASON. May I make one comment?

Mr. FORBES. Sure, Mr. Thomason.

Dr. THOMASON. The process for determining requirements that has been designed for use by the government and reviewed by the Government Accountability Office (GAO) is a flexible process, one that can incorporate the best available evidence and that can utilize scenarios of the sort that I was describing beyond the national security emergency scenarios.

I believe that an adapted version of that process will continue to be a very useful analytic tool. But I would like to say that that is particularly with respect to assessing shortages and risks and vulnerabilities.

The work that IDA did last year with regard to reconfiguration—and this harks back actually to Chairman Ortiz's question earlier about a single budget—what we envision now is a potential strong role for the development of essentially purchasing efficiencies for the Department of Defense and beyond the Department of Defense to include the rest of the United States Government in a way that is not directly tied to the issue of risk, not directly tied to the issue

of shortages, but tied more directly to the possibility of serving as a wholesale supplier to the government as a whole.

And so, therefore, in terms of steps for reconfiguring the stockpile, I would urge, as I have in my prepared statement, consideration of the twofold potential purpose of a reconfigured stockpile, one, to serve potentially as a smart buyer for the Department of Defense as a whole; and, two, to have a separate track, complementary track, that would look at risk-mitigation strategies for a wider range of materials than has traditionally been the case. So that is point, number one, in response to your question.

And then, point number two, Mr. Chairman and Mr. Forbes, with regard to mining policies, I would simply say that it is very important to have as strong evidence as possible about the capabilities both under normal circumstances and contingency emergency circumstances of the U.S. mining base and that, in order to do that, in order to get that information and be able to use it in a coherent way, really calls for a strong capability from either the U.S. Geological Survey or a combination of the U.S. Geological Survey and the industry.

Mr. FORBES. Thank you, Dr. Thomason.

Mr. ORTIZ. Before I go to Mr. Kissell, let me ask you, Mr. Lowden and Mr. Holder, can reconfiguration as proposed in the April report be implemented without changes in the Federal law, or do you think you might need our help to come up with legislation that would make it easier for you, make it better for you?

Mr. HOLDER. Yes, the final report reflects a full range of authorities that we may need. Some of those authorities we are looking at, indicating that we may need help in acquisition, developing acquisition, also help in the area of release authority, such as I indicated before, of having more flexibility in the area of release.

So those are some of the things that we are proposing or that have been proposed in the report that we will probably be needing that flexibility to be able to implement this program.

Mr. LOWDEN. I agree. Flexibility is the word, and if you look at the current way that the stockpile operates, it is good for long-term storage, and it is good for things that we see as problems down the road. But as something comes up quickly, we can't respond to the stockpile because of the legislation that is involved.

And so that we really need to have a program or methods, different methods by which we react to different scenarios, as Dr. Thomason said, that something maybe, may come up like, tomorrow, say for example two-inch-thick aluminum plate can't be bought because they are closing the last rolling mill.

Well, if we know how much we are going to need for the next three years, we are okay; we get that. We move on. That is one scenario. That might be a buffer.

Or you might have something as long term as we have with manganese, as we talked about, things like that. I think there are different scenarios, there are different materials risks that are going to be coming up, and we need different methods to address those, so that may require different sources of funding and different tracks.

So I think it is not just as simple as saying we are just going to have this block and everything is going to be fine. I think it is

going to be, as Mr. Forbes asked, I think it is, from my opinion, is that it is much more complicated than just saying this is what we are going to do, and it is going to take different steps and small steps in some cases to get used to what we are doing to know how to do what we are doing. Baby steps, I think you call them.

I think the DLA folks are doing some things already that are fantastic in that respect. But it is in that idea of reacting and having a stable source of funds for those different activities is where we really would like to work with you guys.

Mr. ORTIZ. Well, we just wanted to be sure that we offer you our services and especially if there is anything we can do, don't hesitate to let us know how we can help you maybe streamline and make it better.

Mr. KISSELL.

Mr. KISSELL. Thank you, Mr. Chairman.

Thank you, gentlemen, for being here today.

And I want to kind of follow the same lines as the chairman and Mr. Forbes has followed.

There was a saying or story I remember from my past, for want of a nail, the war was lost. And the story goes about the rider that didn't have a nail for the horseshoe and took off riding, and the horse went lame, and he was not able to deliver the news to the general in time. The battle was lost; the war was lost.

Do we have any nails in our system now, and does the system we have now allow us to see the potential nails in time to avert a crisis? And the new system you are talking about, is that what we need to get to in order to be able to have a system that allows us to avoid the nails and, therefore, something very small that could cost us in terms of the big picture?

Mr. HOLDER. The current construct, again, for the stockpile is based on war scenarios for war mobilization. So the materials that basically go into a stockpile is a hold model. It is holding it for basically national emergencies in order for materials to be released. That right now does not fit the global environment, currently, right now, as far as to be able to serve the military services.

What we are talking about, as far as the implementation of a new program, is to be able to have more flexibility, to be able to have collaboration with the services to identify what are the services' problems when it comes to materials or requirements that they may need for the current and also for the future.

In the static program of the current stockpile, we did not have that interface with the services, and what we are talking about now is having more interface with the services to be able to discuss their requirements, discuss their emerging needs and being able to apply risk-mitigation strategies for the future to assure that they will have supply availability in times of our need.

Mr. KISSELL. Thank you, sir.

I yield my time, Mr. Chairman.

Mr. ORTIZ. Mr. Rogers.

Mr. ROGERS. Thank you, Mr. Chairman.

Mr. Lowden, in your opening statement, you briefly described the mission of the Office of Deputy Under Secretary of Defense for Industrial Policy and in greater detail the responsibilities that have

been delegated to the deputy under secretary for protecting the United States' access to strategic materials.

These are significant responsibilities, particularly as the worldwide demand for these materials continues to grow, potentially driving the cost of these materials up and availability for them down. However, in recent press accounts, and specifically I am referring to the Defense News and Army Times published article, these accounts indicate that the Department plans to demote this office from deputy under secretary to the director level.

In response, the Senate's version of the National Defense Authorization Act would codify and elevate the position to Assistant Secretary.

In your opinion, what would the effect of downgrading the Office of Industrial Policy be in terms of the ability of the office to accomplish its stated mission, particularly as shrinking budgets, defense budgets, may lead to further consolidation of the industrial base as the world competition for scarce materials such as rare Earth magnets becomes more intense?

Mr. LOWDEN. Mr. Rogers, let me refer to the statement of administration policy (SAP) from July 15 in which the administration expressed its concerns regarding this provision. And the SAP states, The elimination of non-statutory deputy under secretary of defense positions would be detrimental to the continuity and operation of the Department and severely hamper the Secretary of Defense's ability to effectively organize, structure and manage the department. That would be true with us also.

Mr. ROGERS. Okay.

What about you, Doctor?

Dr. THOMASON. I have not studied the issue, and I am not really prepared to comment on it, except to say that I do believe that in the reconfigured process, as we recommended in our, through our research, that it would be very useful to have an Office of the Secretary of Defense (OSD) review and decision panel that could draw upon the best assets from OSD (AT&L), and OSD policy and from program analysis and evaluation in making key decisions on such things as scenarios and other vital planning assumptions.

Mr. ROGERS. Thank you.

That is all I have, Mr. Chairman.

Mr. ORTIZ. Mr. Courtney.

Mr. COURTNEY. Thank you, Mr. Chairman.

I had one question I was sort of intrigued by looking at the chart, which was submitted to the committee, showing the fluctuation of commodity prices for different materials, which I don't think anybody needs to be reminded of that in terms of just the price of oil and what has happened in just the last 12 months, but, clearly, that volatility has extended to other materials which are part of today's discussion.

And in terms of coming up with a system that can really respond to market changes that are out there, I am struck by whether or not this is something that really belongs completely or at all in the Department of Defense because it is really not sort of the mission of the Pentagon is necessarily to be sort of out there, you know, following trading patterns.

The Department of Commerce, obviously, is an agency of government which is much more focused and linked to dealing with international economics. And, as a result, I think they may—I am just sort of curious whether you think that their resources would be more appropriate in terms of trying to help design a system that can buy when the buying is good and sort of see out into the horizon when the buying is bad.

As an example, I mean, the Department of State used to run our export assistance programs for U.S. businesses looking for markets in different parts of the world. Back in the late 1980s, Congress moved that function out of State and over to the Department of Commerce so that now, if you go to an embassy in different parts of the world and you are a U.S. company that is out there looking for customers, it is the Department of Commerce that runs the export assistance system, not the Department of State.

And, frankly, it has been a great shift because Commerce is just much more connected to, you know, the world of commerce. And, again, looking at the challenge that this country has in terms of, again, trying to get ahead of the curve in terms of these very complex markets, you know, should we be tapping into Commerce as the agency of government to help us design a good system?

Mr. HOLDER. One of the things right now is that the Department of Commerce does collaboration with the Department of Defense. It serves as co-chair of part of the Market Impact Committee with the State Department. The Market Impact Committee basically is an interagency of material experts, and basically they provide the stockpile manager with analysis on supply disruptions and supply availability issues.

We will continue to collaborate with the Department of Commerce. They have been working with the stockpile for 15 years. They have participated with us in our sales program. And basically, we will continue that collaboration with State and also with all the other individuals that serve on that committee, such as the Department of Treasury, Agriculture and Homeland Security, to be able to make sure that we have the most intelligence that is going to be needed as we implement this new program.

Mr. COURTNEY. So, I mean, does that collaboration have structure to it?

Mr. HOLDER. Yes, it does.

Mr. COURTNEY. Or is it kind of ad hoc?

Mr. HOLDER. It is a statute within the Stockpiling Act that provides this interagency collaboration in order to support the mission of the stockpile program.

Mr. COURTNEY. Okay, and I know the committee is curious about an issue about the definition of strategic materials where, again, our 2010 Authorization Act issued a report which talked about the definition of strategic materials which points out that the Materials Protection Board's definition of strategic materials is sort of, in the committee's point of view, not as broadly—is not as broad in terms of covering what I think the concern is of Congress in terms of materials that need to be picked up under this type of program.

For example, Congress has determined that the reliance on foreign sources of supply for materials such as titanium, specialty steel and high-performance magnets poses a heightened risk. The

board's narrowing of the definition of materials critical to national security renders the board unable to provide perspective on the adequacy, suitability or effectiveness of those policies. I was wondering if you would comment about that sort of disparity.

Mr. LOWDEN. I will take that, Mr. Courtney.

The definition of strategic and critical by the board created for its purposes was multifold. One is that, in my testimony, it talked about strategic materials; are those materials that we have to have? And that is what the board took on, was those are the things we have to have; they are essential.

And there is a big list of strategic materials, and as I said, there was 128 that we looked at that could possibly be strategic materials. It could be aluminum, an aluminum alloy. It could be almost anything, even the most mundane materials we see as standard materials still are strategic to us. The Department of Defense has to have them.

So the definition of "strategic" is a technical one. It is one that says it is something we have got to have and there is a possibility or there is no substitute that is available for it. And that can be, like I said, even a plastic screw in a electronic component can be a strategic material if that is the only thing that works.

Then taking it to the next level, is there—I will call it a gray area, there is an area in which that material becomes more important. That is the area in which there is a risk of supply-chain disruption, and it can be almost anything that does. It can be global disruptions. It can be China cutting us off on that supply of that material. That raw material, as you talked about, the nail. The little thing you don't expect, say terbium for light bulbs, whatever it may be.

There is a bunch of risks that can occur, and those risks can have many forms and have different severities. So you don't want to go to critical because critical becomes a state of crisis, and that is the definition of the word. And so you don't want to take everything that suddenly has a small risk of supply disruption and crank it up to crisis level.

So there is this area in between, in between strategic and critical, that things happen, and there is a supply chain disruption, a vulnerability that occurs. Now, the board decided that critical meant it was—there was a significant chance of supply chain disruption from U.S. and U.S.-friendly suppliers, and the Department of Defense is the last user, and also not just the last user, we are the ones who drive the market.

There are very few materials that fall into that category, as you notice there is one, it is beryllium, we have all seen that. As you look behind this a little bit and what it is coming up the pike, there are other materials that probably make it to that level in near term, four specific applications.

And I won't mention any of those right this moment, but there are a number of different risks that occurred. So the reason the board took that approach is, we know there are a lot of strategic materials, and we know that many of those materials do have risks associated with the supply chain.

And that is going to get worse with time. We have Brazil, Russia and China, and other things coming up. So we want to take it, and

as we move along, we don't want to go into that crisis mode unless we have to. And that is things like we are doing with beryllium, and we are building a plant so that we have the beryllium that we need for our applications. And we are the last big user.

So that is the definition. So, what I said in my testimony, I was trying to deflect it a little bit, was that we created a big list of strategic materials, and that is something that I find to be very interesting and very useful, because we didn't know what we need. When we came into this process, we really didn't know all the materials we used. And of course, we looked at those things that were big first. You look at the Acquisition Category I programs, you know, the ones that are being spent a lot of money. But then you realize it is that little thing that might get you.

It might be the germanium you need for all of our night-vision goggles we might not be able to get. It is not the big programs; it is those things we have to have and then all of a sudden we can't get. So that is the list of materials we want. We want to know everything we need. And since, by definition, it is things we have to have, it is a strategic material. We just don't want to elevate it to critical until we really have to. Thank you.

Mr. ORTIZ. Mr. Taylor.

Mr. TAYLOR. Thank you, gentlemen, for being here, and I thank you for what you do.

What I am curious is, is I am reading what your job is and what you are empowered to do. What I have failed to see is that, is your organization empowered to try to get a better deal for the Nation?

For example, you mentioned in your testimony, the price of metals went way up during the 1980s. You didn't mention that the price of steel and aluminum fell to about half of what it was just two years ago over the course of the last year. And the only reason I found out is my local scrap dealer told me.

And so as someone who has, very fortunately, significant amount of responsibility for shipbuilding, I found it very strange that no one in the Navy came to me and said, hey, the price of steel is down, the price of aluminum is down, let's go buy a bunch of it while we can and save the taxpayers some money.

In fact, when I pointed it out to the Navy, they said, well, it is only five percent of the ship. Well, if you can save 2.5 percent on a $7 billion ship, that is a heck of a lot of money in Bay St. Louis, Mississippi.

So my question to you gentlemen is, to what extent do you get involved, and since you know what things cost and their availability, and that sometimes things are way above cost and sometimes there are bargains, to what extent are you empowered to try to get a better deal for the Nation? And to notify Congress, hey, the price of aluminum down, now is the time to buy? The price of steel is down; now is the time to buy. Or I am told titanium is down by a third from a couple of years ago; now is the time to buy. Are you empowered to do that, and do you ever do that? Guys, it is a fair question.

Mr. HOLDER. That is one of the things that we are looking at in order to transform the current construct of the National Defense Stockpile into a Strategic Materials Security Program, to be able to have those flexibilities and to be able to help the services when

it comes to an acquisition buy of materials. Currently, right now, the materials that we have in the stockpile are considered to be in excess the Department of Defense needs; so, therefore, we are selling off a majority of materials from the stockpile.

Mr. TAYLOR. May I interrupt?

Mr. HOLDER. Yes, sir.

Mr. TAYLOR. To that point, let's say that material happens to be aluminum. Are you empowered to say, guys, this is a bad time to sell aluminum; the price is down from two years ago? It has got to go up at some point. It would be a smart thing for our Nation to hold off on that. And I will give you a perfect for instance.

I was here when we sold off the naval shale reserves, and the price of oil was $13 a barrel. Everybody, including myself, who voted for that should have been shot. If we had just waited a few years, we could have gotten a heck—if we would have waited until last summer, we could have gotten over $100 a barrel for the same oil. So, again, I made a mistake when I voted for that. We happened to have balanced the budget that year; that is the only good thing that came out of it. But is anybody saying, this isn't a good time to sell? Because we all have a civic responsibility to try to get the best deal for the taxpayers.

Mr. HOLDER. Within our sales program, we have that responsibility to determine when is the best time to be able to sell material.

For instance, let me give you an example. We have cobalt within the inventory. The price of cobalt fell down to about $6 a pound. We suspended the sales of cobalt because we knew that over an extended period of time that the price of cobalt was going to rise again, and which it did. We backed out of the market for a year, and basically the price of cobalt began to rise, and we began——

Mr. TAYLOR. So you are empowered right now, under existing law, to make that decision?

Mr. HOLDER. Yes. With the materials we have considered excess within the stockpile.

Mr. TAYLOR. And just as a matter of curiosity, when you see a directive come down to get rid of something and you know it is a bad time to sell it, what is your procedure to notify someone that we really shouldn't be doing this? What do you do? Are you the man that makes that decision?

Mr. HOLDER. I have that authority to make that decision not to sell those materials at that moment in time.

Mr. TAYLOR. But everyone answers to someone.

Mr. HOLDER. Yes, sir.

Mr. TAYLOR. So who do you notify that you have made the decision to hold on to that product until the price gets better?

Mr. HOLDER. We go through the chain of command, which is through, basically, from Industrial Policy and all the way to the stockpile manager; which we have done this time, where we said that we wanted to suspend the sale of 13 commodities within the stockpile because of the fact that we felt that those commodities may have geopolitical issues; we didn't have viable substitutes and were 100 percent import-dependent. Until we made sure that the services—that there was no need for those materials for the services. Right now, those materials are still suspended or curtailed until that analysis is done.

Mr. TAYLOR. And as a matter of curiosity, when you saw that it was a bad time to buy something or sell something, and particularly sell something, has anyone above you ever told you, go ahead and sell it anyway?

Mr. HOLDER. No, sir.

Mr. TAYLOR. I am glad to hear that.

Thank you, Mr. Chairman.

Mr. ORTIZ. Mr. Johnson.

Mr. JOHNSON. Thank you, Mr. Chairman.

And I am just now arriving at this hearing, unfortunately, and so I missed a lot that has taken place prior to my arrival. So I will have no questions or comments today, but next time, I would like to get my five minutes from today added on to.

Mr. ORTIZ. Well, my question is this now. The material that you buy, is there an expiration period where you stockpile it and you say, well, it is only good for five years, six years? And then, you know, most of the stuff we buy today, you look at the bottom of the can or the bottle, expires by such and such a date. Is that the same animal that you face with the stuff that you buy?

Mr. HOLDER. We haven't purchased material in the stockpile probably since the early 1990s. But one of the things that the current Stockpiling Act does allow us to rotate materials. Such as, for instance, years ago, when we had smoked sheet rubber within the inventory, we were able to rotate the stock on a yearly basis to make sure that we had the current available or current specifications of rubber within the stockpile. So that the Stockpiling Act does give us that authority to rotate the stocks to assure that we have the best availability and material.

Mr. ORTIZ. Mike.

Mr. ROGERS. The only question I have in follow-up with Gene's questioning is, is it a problem as far as space? What would be the reason why you couldn't go ahead and take advantage of market pricing volatilities if you saw, as Gene said, steel down 50 percent from what it had been 2 years ago? What would inhibit you from being able to penetrate that market and take advantage of that? Or, would storage costs outweigh the savings you would make on it? I don't know. I am asking.

Mr. HOLDER. Again, with the current construct right now, we have to go through what is considered to be a process of Department determination to determine, what are the requirements that the services will actually need? That is identifying the material. And, right now, the only things we have identified of potential materials right now with the current construct is that materials that we have are considered to be excess. So there is right now no determination for material for us to actually buy at this moment in time.

One of the things that Dr. Thomason testified is that, as we looked at our study, we looked at maybe the top 10 materials that there is the possibility for the Department to do leverage buys because those are the materials that we are saying that there are three quarter of a million tons of materials that possibly that the Department can apply leverage buys to be able to use their buying strength to be able to attain the best overall price for these commodities.

Mr. ROGERS. So then the cost of storing those materials is not going to be a factor that you are concerned about outweighing the price benefit that you may get from a cheaper buy?

Mr. HOLDER. Sir, that would depend on the quantity that we are talking about buying, and also depends on where actually the storage of these locations will be. Currently, right now, Defense National Stockpile has three staff locations where we store material at. Some of those locations basically could possibly maybe handle the storage of those commodities. But then, again, we need to be looking at, should we be storing those commodities? Or basically, should we be looking at vendor management with those materials actually being kept at the facility, and they could basically be holding it as buffer stocks, versus releasing that material to the government and where it can be used or can be released directly to the vendor in times of need?

Mr. ROGERS. Thank you, Mr. Chairman.

Mr. FORBES. Mr. Chairman.

Mr. ORTIZ. Mr. Forbes.

Mr. FORBES. Can I offer one follow-up question?

Mr. Lowden, returning to your definition of strategic material critical to national security. By determining that DOD has to be, in your words, the, quote, last big user of the material for it to be critical to national security, doesn't it create the difficult situation that a material could be critical to every element of the industrial base upon which the Department depends but not considered critical to the Department itself if the material is also used significantly in commercial items and vulnerable to disruption?

Mr. LOWDEN. Well, I think that the health of the commercial market and the commercial industrial base is essential for ours. If you look at materials, we are a relatively small user of materials, although we talk about so many millions of tons of materials. In steel, we are less than one percent in defense. And if you look at aluminum, we are less than six percent. If you look at titanium, we used to be the key in titanium, but with the global aerospace market and the growth in other areas, we are less than five percent of the market now globally.

So when you look at that health of the industrial base——

Mr. FORBES. How about something like fuel that you would be using?

Mr. LOWDEN. I don't know about fuel, sir.

But I can tell you about materials, is that we do look at it from, again, from the bottom up; is that we are only a small player. And when I call it critical to national security through the Strategic Materials Protection Board, as I noted, that was for its purposes, and that was Defense Department purposes.

Mr. FORBES. What does that term the "last big user" really mean?

Mr. LOWDEN. Well, let's look at beryllium. I can use another example. Say it is a corrosion protection material that is hazardous to the health of the users and the people who have it out there, and we are no longer going to use it, and there are a couple out there right now. As we look at our legacy equipment and we find and we look at our current and existing programs to build aircraft or ships, whatever it may be, a ground vehicle, and we see that

this material is no longer to be used in the commercial market; we see that coming, but we have to have it. And we are the last user.

Mr. FORBES. Let me stop you there, and I will wrap up here very quickly. Suppose I have material A, which has to go in some product that you need, and you are concerned about that not being available. But let's say there is a product B that is vitally important for the commercial industry that is producing the product you need. Does that product A ever come in and be counted as a critical to national security?

Mr. LOWDEN. Yes.

Mr. FORBES. Okay.

Mr. ORTIZ. Trying to follow up on Mr. Rogers' question. Do you envision the necessity for Military Construction (MILCON) funding requirements under the storage, under the plan that we are talking about?

Mr. HOLDER. Right now, we are looking at different funding sources. The Department right now has not made a decision on what is the appropriate funding source. As of right now, we operate under the transaction fund, which basically pays for operating in the National Defense Stockpile. Of course, as you know, there is the appropriated fund that is a direct line from the Defense budget, and also there has a revolving fund. These are things that we are exploring, but no decision has been made within the Department what would be the most appropriate fund as we move forward with the new program.

Mr. ORTIZ. Any other questions?

Mr. Taylor.

Dr. THOMASON. Mr. Chairman, may I make one comment on that point?

Speaking to Mr. Rogers' question about the storage requirements, I think Mr. Holder indicated, very much in line with our suggestions and our research, that the model for storage has yet to be determined because there is the question of whether it is more efficient, more efficient for the taxpayer, more efficient for the government to serve as a manager and yet store, for example, at the contractors that are actually doing the production.

But—so it is premature, I would say, from our standpoint, because the issue of the relative merits of one versus the other storage model have not been worked out yet, which bears, I believe, on the chairman's question as well about MILCON requirements.

Mr. ORTIZ. Thank you, sir.

Mr. Taylor.

Mr. TAYLOR. Thank you, Mr. Chairman.

Gentlemen, have all of you been at this job for at least five years? Okay. A real-life scenario that occurred with this committee was a group frustration at the delays it took for our Nation to produce up-armored Humvees. One of the causes of those delays was the shortage of certain types of steel to use in the up-armored portions of the Humvees. I am just curious, and I remember it being a very significant factor, was that type of steel in your inventory? And was any effort made to get that type of steel out of your inventory to the manufacturers that we were calling upon to make the doors and the bodies of the up-armored Humvees? That is the first question; did you have that type of steel in your inventory?

Mr. HOLDER. Sir, the Defense National Stockpile basically has raw materials.

Mr. TAYLOR. I understand.

Mr. HOLDER. These are materials that are basically used in the applying and making of steel.

Mr. TAYLOR. I understand that, too.

Mr. HOLDER. So the answer is, as far as did I have steel within the inventory, the answer is, no.

Mr. TAYLOR. Based on that delay, has anyone within the DOD come to you and said, we got burnt once, maybe we should stockpile this stuff this time?

Mr. HOLDER. No, sir.

Mr. TAYLOR. Just for my information. Who within the DOD ought to be looking at scenarios like that and saying, okay, we made a mistake once, let's not make it again? Whose job is it to analyze that real-life scenario that happened just in the past five years?

Mr. LOWDEN. It is our job. And we did respond, and we did work with the steel community to get the material that was needed.

Mr. TAYLOR. But I think you will agree, Mr. Lowden, it took a very long time.

Mr. LOWDEN. Yes. The hindrance was the availability of ingot steel to be rolled and tempered and quenched in the appropriate manner to make the steel we required, the thin-gauged armor plate. The problem was no one could melt enough steel of the type we needed in this country. And, therefore, we had the capability at Oregon Steel to roll and quench and temper that ingot, but they could not get steel to roll.

And, therefore, the delay and the hindrance was the rule that we could not bring steel that was melted or produced into this country to make armor; from either Canada or the United States was not available. So that, by working with the various organizations, we looked at changing the definition of produced and allowing us to bring in ingot from Mexico from Mittal Steel—that also produces here; it is our number one producer—to be rolled and quenched and tempered at Oregon Steel, and it increased our capacity by 40 percent. So it was that move that in that special situation we had to work through that scenario of getting it because it was not allowed by law to be brought in. And so that is what the hindrance was, was that ability to get ingot steel of the type we needed. We had the capacity to roll, but not the capacity to produce.

Mr. TAYLOR. Given that very real scenario happened not that long ago, that we have also had again group frustration in how long it took to produce the 18,000 MRAPs that we now have in Iraq, that I am sure we are going to continue to feel that frustration in trying to fill the 5,000 all-terrain MRAPs for Afghanistan, to what extent—it is my understanding General Brogan is in charge of that program. To what extent do you work with General Brogan, who is responsible for the acquisition of those 5,000 new MRAPs, to see to it that this type of delay doesn't happen?

And, Mr. Lowden, I am not trying to bust your chops.

Mr. LOWDEN. I understand, sir.

Mr. TAYLOR. But we know for a fact that MRAPs are saving lives. We know for a fact that kids who died in Humvees would

probably have been alive if we had gotten the MRAPs built sooner. Right? We don't want to keep making the same mistakes. So to what extent does your organization get involved in saying, General, you have got some delays here, I have got some expertise within my shop, let me help you find these things?

Mr. LOWDEN. The purpose of industrial policy is to look at the industrial base and make sure we have what we need to do the job. And I would like to——

Mr. TAYLOR. But we also get caught in our own lanes and fail to help the guy in the next lane with some expertise that you might have.

Mr. LOWDEN. I would like to take that for the record, Because I am a materials engineer, and it is not my area of expertise, and I would like to get back to you and provide a more appropriate and informed answer to that.

[The information referred to can be found in the Appendix on page 65.]

Mr. TAYLOR. I would very much appreciate that, because it is going to be a challenge. We have just funded those vehicles. We want to get them fielded right away.

Mr. LOWDEN. Now that I said that, I would like to say something a little bit additional to that.

Mr. TAYLOR. All right.

Mr. LOWDEN. This idea of a Strategic Materials Management Program broadens what we would be doing with respect to materials that we may need or we see problems with. If we are using the military services to help derive the list of materials we need—and it was real interesting. I used two-inch-thick aluminum plate as an example because, in our inquiries out to the services, that came back as a material they were concerned about. If they are concerned about it and they know about it, they can tell us, and then we, as a Strategic Materials Management Program, can plan ahead for that, and we can see what is coming down the pike. And that requires input from the services and the programs. They are crucial to making this work. And so as I look at this program and as we talk about it, this is the idea, is that when we think about stockpiling—and I am going to try not to smile too much.

When I came here when I thought about stockpiling, I said it is a pile of rocks. You know, that is what it is. It is this big pile of rocks that we have kept around for long times, and we are not using it. And now we are looking at having materials in the form we need it when we need it. It doesn't just have to be the pile of rocks anymore. This gives us the opportunity to put things in there in the form we can best use it, whether it be an ingot of steel, an ingot of titanium, or a two-inch-thick aluminum plate, store it at the vendor so that the programs can get it when they need it. That is what we want to look at.

So whether it be titanium or even something as simple as a powder that they use to make magnets, we want to be able to have the material in the form and in the quantities we need to plan for those problems in the future. And that is really what we are talking about here, is taking and making this more flexible and allowing us to do things like that.

Mr. TAYLOR. If I may, Mr. Chairman, one last thing.

Mr. Lowden, and really all of you, and again, we learn from our mistakes. In conversations I had with the acquisitions people in the Navy and the fact that they weren't aware that the price of steel had been cut in half, the price of aluminum had been cut in half, and even that flip remark of, well, you know, it is only five percent. I just put a pencil to it. Okay, so half of 5 percent is 2.5; 2.5 percent of $7 billion is $170 million towards these $7 billion aircraft carriers. That is a heck of a lot of money that somebody was just dismissing as inconsequential.

I would really hope that one of the things that your organization would do, since you track this, is reach out to the other acquisition—other branches, like the Under Secretary of the Navy, and say, you know what? Now is a good time to be doing, whatever. Because I really do—I think many of us have the sense of frustration that the right hand often isn't telling the left hand what they are up to, and that we as a Nation, we as taxpayers end up paying too much for things we shouldn't be, and we miss the opportunities that we ought to be taking advantage of. And I am asking you guys to be an integral part of that because you are tracking the price of materials, and I would hope that you would make that part of your job description.

Mr. HOLDER. One of the things I would like to say, sir, is that one of the things we have done is we have established a pilot program with the Army and the Navy. And with that pilot program, one of the things that we are doing is to do an aggregate buy. For instance, for titanium for the Army and Navy for lightweight armory and also for the Navy submarine program, by them coming in together with their requirements, we are able to enter into a long-term agreement with titanium producers to be able to provide a lower overall cost versus market price where they would buy that material on the spot market. By doing such, we are basically saving the Army possibly avoiding $7 million just for this little small pilot program.

So we are taking small steps to be able to see how we can basically best serve the military services and looking at ways to be able to create new acquisition strategies for the future.

Mr. TAYLOR. Thank you, sir.

Thank you, Mr. Chairman.

Mr. ORTIZ. Mr. Rogers.

Mr. ROGERS. Thank you, Mr. Chairman.

I would just like to point out to the panel but also to the committee members, the person that makes the decision that Mr. Taylor was asking about a little while ago, about looking and making sure we don't make these mistakes again and we start getting the materials that we need, is the Deputy Under Secretary of Defense for Industrial Policy, the position that I questioned Mr. Lowden about, and the published articles that they are talking about demoting that person to a director level. I think, if anything, we need to be looking at investing more power into that person and expecting more of the kind of foresight that Mr. Taylor just referenced. Thank you.

Mr. ORTIZ. It has been a wonderful hearing this morning. It has been very informative, and I think that me personally, I have learned a lot by having this hearing, having you as witnesses

today. But let me ask you a question. Should we expect a legislative proposal for the fiscal year 2011 authorization bill?

Mr. HOLDER. One of the things right now the Department is basically, or, from us, we are planning on submitting a proposal to the Department, and then basically the Department would basically have to review that proposal of our legislation authorities that we are seeking relief for. And so that is where we are currently right now.

Mr. LOWDEN. I would like to add one thing, is that we have a new AT&L, Under Secretary of Defense for Acquisition Technology and Logistics, and we have a number of key leadership positions that are empty right now. So moving that through the system, we will have to wait and see what we have a little bit.

Mr. ORTIZ. Thank you. And like I stated before, we want to work with you, because we are all in the same boat, the same team. And whatever we can do to make what we build better and to save taxpayers money, we should look at it so that we can do better.

You guys have done a great job this morning. And if we don't have any further questions, thank you so much again for your testimony, and we look forward to continuing to work with you. Not hearing any questions, the hearing is adjourned.

[Whereupon, at 11:01 a.m., the subcommittee was adjourned.]

A P P E N D I X

JULY 23, 2009

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

JULY 23, 2009

Opening Statement by Chairman Solomon Ortiz
Readiness Subcommittee Hearing on
Proposed Reconfiguration of the National Defense Stockpile
July 23, 2009

The subcommittee will come to order.

Today the Readiness Subcommittee meets to receive testimony on the proposed reconfiguration of the national defense stockpile.

I thank our distinguished witnesses from the Department of Defense and the Institute for Defense Analyses for appearing before the subcommittee today to discuss management of the nation's stockpile of critical materials.

As we will discuss today, the concept of a federal government stockpile has been in existence for nearly a century. The size and intent of the National Defense Stockpile has fluctuated based on both geo-political and security pressures.

Based on these pressures, stockpile requirements have ranged from as low as $24 million to as high at $17 billion.

In recent years, a sharp decline in requirements resulted in a significant disposal program begun in fiscal year 1992 that continued through fiscal year 2006 during which more than $6 billion worth of materials was sold.

Stockpile management and policy at various times in the past 70 years have fallen into the domain of a number of different federal agencies, from the Treasury Department, to the General Services Administration, and the Federal Emergency Management Agency, or FEMA.

In 1988, Congress transferred both Stockpile policy and operations to DOD.

Although current policy oversight for the Stockpile remains with the Under Secretary of Defense for Acquisition, Technology, and Logistics, the authority for management of the operational aspects of the Stockpile has been delegated to the Defense Logistics Agency.

All this background is relevant because today we find ourselves in a world where China has emerged as a significant economic entity. Increased requirements in developing nations have led to sharp price hikes for many strategic and critical materials.

At the same time, both commercial and military manufacturing firms in the United States are reporting shortages of materials needed for defense production.

In this environment, the current Stockpile statutory and management structure may not be sufficiently flexible to respond to critical defense industrial base needs.

In 2006 and 2007 Congress asked the Department of Defense to review its current stockpiling strategy.

This review included the possibility of reconfiguring the Stockpile and proposing changes in the Stock Piling Act to allow for stockpile requirements based on economic purposes in peacetime. Non war-related stockpiling is now prohibited under current law, the Strategic and Critical Materials Stock Piling Act of 1979.
A preliminary report to Congress found a lack of information detailing which materials were forecasted to be required for future weapons systems, domestic production capacity, and alternatives for addressing shortfalls.
The April 2009 report on the proposed reconfiguration of the National Defense Stockpile which we are addressing in this hearing is the result of the Department's work in response to congressional inquiry.

The Department's goal for a restructured Stockpile would be to create the ability to leverage the buying power of the Department of Defense and other cooperating federal agencies by combining materials requirements, negotiating long-term strategic sourcing arrangements, and enabling planners to capitalize on favorable world market conditions.

To accomplish this, the Strategic and Critical Material Stock Piling Act would have to be modified by Congress to enhance program flexibility.

The Subcommittee recognizes the need for managing strategic and critical materials to sustain major weapons systems, but the question is where should the management of a strategic material program reside?

While the Department may have the necessary internal competency to determine material requirements, the core mission of the Department does not include market management.

Nor does the Department function as a holder of significant national stockpiles for other federal departments and agencies.

The U.S. Government may have sufficient knowledge and mission capabilities outside of DOD to support a strategic material program.

These are the issues we will be exploring today.

Our witnesses today are:

Mr. Rick A. Lowden
Senior Materials Analyst
Office of the Deputy Under Secretary of Defense for Industrial Policy

Mr. Cornel Holder
Administrator, National Defense Stockpile Center
Defense Logistics Agency

and

Dr. James S. Thomason
Senior Analyst and Projects Director
Strategy, Forces, and Resources Division
Institute for Defense Analyses

The Chair recognizes the distinguished gentleman from Virginia, Mr. Forbes, for any remarks he would like to make.

Forbes Statement for Hearing on the Proposed Reconfiguration of the National Defense Stockpile

Thank you, Mr. Chairman. Once again, I want to thank you for your leadership and applaud you for having the vision to bring issues before this subcommittee that are absolutely critical to the readiness of our military forces and our national security, even though they may not be the most glamorous of issues. Today's hearing is on one such topic.

It's one of those things that no one really talks about or worries about—until something goes wrong. It's at that point—the point where we don't have the steel we need to build Mine-Resistant, Armor-Protected (MRAP) vehicles or the rhenium we need to build a Joint Strike Fighter (JSF) engine that the stockpile becomes critically important. So, although a discussion on the stockpiling of manganese, tungsten or rhenium may seem esoteric, the underlying need is very basic and this hearing is very important.

As you noted, the Department's April 2009 report to Congress concluded that reconfiguration of the National Defense Stockpile is necessary to respond fully to evolving conditions in the world markets and to rapidly changing requirements for both traditional and new materials. The report lists several 'Potential Changes' and we are here today to discuss those potential changes and get further understanding of what the Department sees as a desired end-state for the stockpile.

Since it was established by the Strategic Materials Act of 1939, the stockpile has experienced a roller-coaster ride of reductions and buildups. Stockpile requirements are driven by a large number of factors that range from the health of global financial markets to potential for localized civil war in a country that is the sole source of a critical material.

The complexity of setting stockpile requirements is, in itself, extraordinary. The proposed changes would modify increase programmatic flexibility and allow stockpile acquisitions and disposals on the basis of current market conditions. This alone would increase this complexity by an order of magnitude. Furthermore, moving toward an integrated, interagency approach to strategic materials management would likely broaden stockpile requirements and further complicate stockpile management. I am very concerned that we do not have personnel—in the Department of Defense or elsewhere in the federal government—with the expertise necessary to manage an integrated stockpile with latitude to enter and exit as market conditions allow.

DOD's proposed reconfigured stockpile would: '*be founded on an interagency, collaborative approach and bolstered by use of experts and timely market research and intelligence.*'

While I applaud efforts to improve management of this asset that is absolutely critical to national security, I do have concerns that in reality this vision may not be wholly achievable through one sweeping reform initiative.

I'd like to thank our witnesses for being with us today to share some of their expertise with us. As I alluded to earlier, this is an area where we cannot afford to go wrong. It is vital that we understand what it takes to achieve the goals set forth while we also strive to identify the unintended consequences of our actions and your testimony today is a crucial part of that. It is

my understanding that in order for this proposed reconfiguration to take place, this body will have to take legislative action. I hope our witnesses will be also able to share their thoughts and views on potential legislative actions required to improve stockpile management."

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HOUSE COMMITTEE
ON ARMED SERVICES**

STATEMENT BY

MR. RICHARD A. LOWDEN

SENIOR MATERIALS ANALYST

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE

FOR INDUSTRIAL POLICY

BEFORE THE

SUBCOMMITTEE ON READINESS

HOUSE ARMED SERVICES COMMITTEE

**DEPARTMENT OF DEFENSE
INDUSTRIAL POLICY**

RECONFIGURATION OF THE NATIONAL DEFENSE STOCKPILE

JULY 23, 2009

**HOLD UNTIL
RELEASED BY THE
HOUSE COMMITTEE
ON ARMED SERVICES**

Good morning, Chairman Ortiz, Ranking Member Forbes and distinguished Members of the Subcommittee. I am Rick Lowden, a Senior Materials Analyst from the Office of the Deputy Under Secretary of Defense for Industrial Policy. Prior to arriving at my current position, I served as a materials engineer at the Oak Ridge National Laboratory. I appreciate the opportunity to appear today to describe Industrial Policy's role in the reconfiguration of the National Defense Stockpile and in the development of an overarching plan for managing strategic materials for the Department of Defense.

Industrial Policy's mission is to make certain the industrial base on which the Department of Defense depends is reliable, cost-effective, and sufficient. More specifically, Industrial Policy is responsible for ensuring DoD policies, procedures, and actions both stimulate and support vigorous competition and innovation in the defense industrial base and that these policies help establish and sustain cost-effective industrial and technological capabilities that assure military readiness and superiority. Industrial policy does so by monitoring the health and competitiveness of industry; by leveraging DoD decisions to promote innovation and competition; and by utilizing statutory processes.

Currently, strategic and critical materials are the subject of intense discussion within and outside the Department. Since 2003 and until the recent economic downturn, metal prices had risen sharply. The prices of both titanium and molybdenum, metals required for many important defense systems, increased from around $5 per pound to a high of over $30 per pound. The price of rhenium, a metal needed for high-temperature alloys used in jet engines, had at one point increased by over 1000%. In addition, the

availability of certain materials, such as the rare earths used in high-strength permanent magnets, has been the subject of many recent inquiries.

I believe it is important to discuss the definition of "strategic material." The concept of materials being of significant importance to national security is not new. The scarcity of manganese, potash (potassium salts), tin, tungsten, and other minerals during World War I prompted the War Industries Board to ask the Assistant Secretary of War to prepare a list of strategic materials described as the *"raw materials essential to the prosecution of war, which cannot be procured in sufficient quantities from domestic sources and for which no domestic substitution has been found."* In Stockpile legislation, strategic materials are defined as "*materials that (A) would be needed to supply the military, industrial, and essential civilian needs of the United States during a national emergency and (B) are not found or produced in the United States in sufficient quantities to meet such need.*" There are additional definitions for strategic material; however; all share two common elements: criticality of application - the material is needed, and vulnerability of supply – the material may not be available.

It would appear that the definition of strategic material is clear, and the implications obvious; however, many factors can complicate interpretation of this terminology. Recently, certain metals were given special consideration in Section 2533b of Title 10 of the United States Code, enacted under Section 842 of the John Warner National Defense Authorization Act for Fiscal Year 2007. This amendment provides a list of specialty metals that are "strategic materials critical to national security" which appears to have caused some confusion regarding the definition of "strategic material." The specialty metals presented in the provision are clearly "strategic materials"; however,

the list of strategic materials is not limited to these metals. There are many additional metals and non-metallic materials that could also be considered strategic.

The John Warner National Defense Authorization Act for Fiscal Year 2007 also directed the Secretary of Defense to establish a Strategic Materials Protection Board to analyze the needs and risks associated with materials designated as "critical to national security" and to recommend strategies to ensure the availability of these materials. The Board is to be composed of representatives from the Office of the Secretary of Defense; the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Under Secretary of Defense for Intelligence; and the Secretaries of the Army, Navy, and Air Force. The Secretary of Defense delegated responsibility to the Under Secretary of Defense for Acquisition, Technology, and Logistics to chair the Board who then delegated to the Deputy Under Secretary of Defense for Industrial Policy responsibility to act as the Board's Executive Secretary. The delegation of this responsibility explains Industrial Policy's connection to reconfiguration of the Stockpile and involvement in other matters concerning strategic and critical materials.

The statute that established the Board does not define "materials critical to national security," therefore, in order to distinguish between terms, the Board developed definitions to be used for its purposes. The Board determined that for a material to be designated as strategic that material should meet certain technical criteria. First, the material should be essential for important defense systems and secondly, it must be unique in the function it performs - in other words, there are no viable alternatives. This definition is consistent with respect to earlier definitions in that it includes the aspect of criticality of application, but unlike earlier variants, it does not include a vulnerability of

supply factor. The Board's definition of strategic material is thus less restrictive and expands the list of materials that would be considered strategic. It must be noted that additional criteria such as vulnerability of supply would have to be considered in order to elevate a strategic material to a higher level of concern.

To ensure consistency for the various Department activities and complete Congressional reporting requirements related to strategic materials and the Stockpile, the Strategic Materials Protection Board's Executive Secretary established the Strategic and Critical Materials Working Group. The Working Group was chaired by the Deputy Under Secretary of Defense for Industrial Policy and conducted the requested analyses and prepared the report that was submitted to Congress in April. The Working Group was dissolved upon completion of the report.

The Working Group developed a new process by which the strategic and critical materials required for national defense can be identified, supply chain risks assessed, and mitigation strategies selected and applied. The Working Group employed a lengthy, deliberative process to collect material information from a wide variety of sources to construct an initial list of strategic materials (using the Board's technical definition). The initial list included a total of 128 different materials, which was a more comprehensive list than had been assembled previously. Security of supply criteria were then applied to this list to assess risks and vulnerabilities associated with the supply of these materials and determine which materials were of concern and would require application of risk mitigation strategies.

The Strategic Materials Protection Board played an important role in the development of the new process and will continue to participate in the implementation of

a strategic materials management system. The Board will support a new process by requiring that respective Military Services participate in the maintenance of the list of material needs and identification of possible risks and vulnerabilities associated with these materials. It will continue to review and validate material requirements, with the process linked to the Quadrennial Defense Review cycle.

Any new system for managing strategic materials must be dynamic and proactive. As the Department's requirements change, the list of materials essential to the strategic defense interests of the U.S. will also change, and thus the methods by which supply chain risks are monitored, measured, and mitigated must also change. In addition to traditional stockpiling, new and unique acquisition strategies such as buffer stocks, vendor-managed inventory, and strategic purchases, will be needed to ensure a reliable, cost-effective, and sufficient supply of materials. We must look beyond traditional stockpiling methods, and select and apply the most effective and efficient methods to manage the materials essential to national defense. This is our challenge and we look forward to working with Congress and this Subcommittee on this endeavor. I thank you for the opportunity to testify before the Subcommittee. I sincerely appreciate your time and your interest in this important matter. I would be happy to address any questions you may have for me.

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STATEMENT OF

MR. CORNEL A. HOLDER

ADMINISTRATOR, DEFENSE NATIONAL STOCKPILE CENTER

DEFENSE LOGISTICS AGENCY
HEARING BEFORE THE
HOUSE COMMITTEE ON ARMED SERVICES
READINESS SUBCOMMITTEE

JULY 23, 2009

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HOUSE COMMITTEE ON ARMED SERVICES

Good morning, Mr. Chairman and distinguished Members of the Subcommittee. I am Cornel Holder, Administrator of the Defense National Stockpile Center, a field activity of the Defense Logistics Agency. The Defense Logistics Agency's mission is to function as an integral element of the military logistics system of the Department of Defense. The Defense Logistics Agency is responsible for the procurement, management, storage and distribution of some five million items. The Defense Logistics Agency provides food, fuel, and medical items, as well as most of the clothing, construction materials and spare parts for worldwide support of this country's land, sea and airborne platforms and weapons systems and the forces that operate and sustain them. The Defense Logistics Agency's number one priority is logistics support to the American warfighter.

As a field activity of the Defense Logistics Agency, the Defense National Stockpile Center administers the storage, management and disposal of the Department of Defense's strategic and critical materials to ensure that the United States has sufficient materials to supply military, industrial, and essential civilian needs for national defense. I welcome the opportunity to appear today to discuss the Defense National Stockpile Center's management of the National Defense Stockpile and to specifically discuss the proposed reconfiguration of the National Defense Stockpile.

The National Stockpile operates under authority of the Strategic and Critical Materials Stockpiling Act, 50 United States Code §§ 98 et seq. This Strategic and Critical Materials Stockpiling Act provides that strategic and critical materials are stockpiled in the interest

of national defense to preclude dependence upon foreign sources of supply in times of national emergency.

The concept of a Federal Government stockpile dates back to World War One when shortages caused an imbalance in production schedules and program delays. The first real initiative to establish a reserve inventory of strategic and critical materials began with passage of the Naval Appropriations Act of 1938 and the Strategic Materials Act of 1939 which provided funds and a legal framework for stockpiling. The Munitions Board, established in 1922, had already established three separate lists of materials categorized as critical, strategic, and essential. These lists served as the basis for a postwar stockpile.

In 1946, Congress passed the Strategic and Critical Materials Stock Piling Act. Then in 1979 Congress passed the Strategic and Critical Materials Stock Piling Act, the second major revision of the 1939 legislation, which remains the basic statutory authority today. The 1979 Strategic and Critical Materials Stock Piling Act established the Transaction Fund which allowed the stockpile to be a self-funding agency based on sales of outdated materials.

Over the years the National Defense Stockpile fell under different agencies for administration while retaining its core mission of maintaining critical and strategic materials in the interest of national defense. Between 1949 and 1988, the General Service Administration and Federal Emergency Management Agency were responsible for the National Defense Stockpile.

In 1988, the responsibility for the program was delegated to the Secretary of Defense. The management and overall policy responsibilities for the National Defense Stockpile rest with the Undersecretary of Defense for Acquisition, Technology and Logistics as the Stockpile Manager. Program operation was assigned to the Defense Logistics Agency. The Defense National Stockpile Center was established within the Defense Logistics Agency to manage the program.

The requirements for materials in the National Defense Stockpile were based on military and national security scenarios which resulted in the National Defense Stockpile having build-up and reduction phases. In 1992, the requirements determination process concluded most of the materials held in the National Defense Stockpile were excess to defense industrial and essential civilian needs. Since then the sales of materials in the National Defense Stockpile have totaled in excess of $6.4 billion. In 1994, there were 90 commodities stored in 85 locations. Today there are 24 commodities stored in 11 locations. The remaining inventory is valued at about $1.4 billion.

Concerns regarding the global availability of strategic and critical materials by both the Department of Defense and Congress have resulted in a re-examination of the need for a reconfiguration of the National Defense Stockpile. Subsequently, Congress passed legislation and report language directing the Department of Defense to review the current National Defense Stockpile program and assess the need to reconfigure the National Defense Stockpile to meet current and future strategic and critical material needs.

The Department conducted a review of the current National Defense Stockpile disposal policy and identified a requirement for an in-depth analysis to assess the need to reconfigure the National Defense Stockpile. The National Materials Advisory Board of the National Academy of Sciences (NAS) was commissioned to conduct an independent study to assess the effectiveness of the National Defense Stockpile to respond to current needs and threats. The National Academy of Sciences study indicated a need for a new National Defense Stockpile strategy to meet current and future strategic and critical material needs of the Department and recommended the establishment of a new system for managing the supply of materials.

Following receipt of the National Academy of Sciences study, the Undersecretary of Defense for Acquisition, Technology and Logistics (USD/AT&L) established the Department of Defense Strategic Materials Working Group. The Strategic Materials Working Group was chaired by the Deputy Undersecretary of Defense for Industrial Policy and included representatives from the office of the Deputy Undersecretary of Defense for Industrial Policy, the office of the Deputy Undersecretary of Defense for Logistics and Material Readiness , the Defense Logistics Agency Defense National Stockpile Center, the Departments of the Army, Air Force, and Navy, the Joint Chiefs of Staff Force Structure, Resources, and Assessment and the Defense Contract Management Agency . The United States Geological Survey, the Department of Commerce and the Institute for Defense Analyses performed research and analysis on behalf of the group.

The Strategic Materials Working Group was tasked to determine whether the National Defense Stockpile should be reconfigured to adapt to current world market conditions to ensure future availability of strategic and critical material for defense needs and report to Congress its findings and determinations.

Concurrently, the Undersecretary of Defense for Acquisition, Technology and Logistics made the decision to suspend or curtail continued sales of 13 commodities in the National Defense Stockpile based on the limited access and availability of required inventory levels due to import dependency, lack of viable substitutes and the potential for market, geopolitical and logistical disruptions.

The report on the reconfiguration of the National Defense Stockpile submitted to Congress in April 2009, concluded the Department's National Defense Stockpile policy required reconfiguration to ensure future availability of strategic and critical material for defense needs. Material management is a complex and rapidly changing field. Increasing global competition for raw materials has added a new depth of complexity, and continued reliance on the strength of the United States buying power is proving problematic. Ensuring the current and future availability of strategic and critical materials requires a more integrated and responsive approach on the national level.

The National Defense Stockpile has been successful in acquiring and holding strategic material, but has had isolated success in using the material strategically. Transforming the National Defense Stockpile into a Strategic Materials Security Program (SMSP) would enable the Nation to adapt more quickly to current world market conditions and

ensure the future availability of materials required for defense and national security needs. The proposed attributes being considered for the Strategic Materials Security Program include a broader internal Department of Defense profile albeit a reduced physical footprint, an expanded interface with other federal agencies, greater latitude in entering and exiting markets, and flexibility to develop risk-based value propositions.

The first step is for the reengineered program to be more properly aligned to sense and respond to today's military material needs in scenarios ranging from non-conflict to full mobilization. The current National Defense Stockpile is designed to respond to global war scenarios – those requiring national mobilization of all sectors of the economy – whereas today's military must respond to asymmetric national security threats wherever and whenever they occur, frequently on several fronts simultaneously.

The global growth in demand for scarce raw materials and the industrial surges in China, India, Russia, Brazil, and other developing countries require that the United States employ a new, integrated and responsive strategy for identifying and ensuring, on a continual basis, an adequate supply of strategic and critical materials required for the United States security needs.

In today's global economy, it is critical to ensure a strong domestic defense industrial base capable of meeting national security needs. Accordingly, the Department has developed a plan for a comprehensive Strategic Materials Security Management System that would identify, on an ongoing basis, those strategic and critical materials required for

national security. The Strategic Materials Security System would be founded on an interagency, collaborative approach, and bolstered by the use of experts and timely market research and intelligence. The system would employ an integrated risk assessment construct, compare demand to supply by analyzing supply sources and risks of supply chain interruption, and identify mitigation strategies to ensure an adequate and timely supply of those materials. The reshaped National Defense Stockpile, the Strategic Materials Security System, would continuously monitor global markets, establish supply chain commitments with producers/suppliers; monitor performance to ensure timely availability of materials, and store only limited amounts and types of materials.

The current policy to dispose of materials in the National Defense Stockpile could be modified to reflect the realities of today's global marketplace. Analysis by the Strategic MaterialsWorking Group and risk assessment modeling supported the National Defense Stockpile's action to suspend temporarily or limit the sale of 13 selected commodities in the National Defense Stockpile inventory. The analysis also indicated that 39 other materials should be monitored, studied and/or considered candidates for future mitigation strategies to ensure availability. Further, the Strategic MaterialsWorking Group concluded that 11 materials used in the largest quantities by the Department be addressed as potential candidates for strategic sourcing. The Department defines strategic sourcing as "...the collaborative and structured process of analyzing [what] an organization spends and using the information to make business decisions about acquiring commodities and services more effectively and efficiently..." Sales should continue for those materials still deemed in excess to the Nation's defense needs.

Challenges to implementing the Strategic Materials Security Program include ensuring the Department has programmatic flexibility to acquire the right materials efficiently and effectively and to ensure that essential strategic materials are available to respond to current and future needs and threats and ensuring the Department has sufficient resources to make strategic acquisitions, undertake other risk mitigation strategies and operate the stockpile program.

In closing, I would like to thank you for to the opportunity to discuss the Department's strategy to reconfigure the National Defense Stockpile to ensure the current and future availability of strategic and critical materials to meet national defense needs and I look forward to working with Congress as we implement this vital program.

Statement of Dr. Jim Thomason

Research Staff Member
Institute for Defense Analyses, Alexandria, Virginia
to the House Committee on Armed Services
Readiness Subcommittee
23 July 2009

Good morning, Chairman Ortiz and distinguished members of this subcommittee. I am Jim Thomason, of the Institute for Defense Analyses (IDA), a Federally Funded Research and Development Center with headquarters in Alexandria, VA. I am honored to appear before you today to summarize the key findings from IDA research related to the National Defense Stockpile. IDA was commissioned by DoD last year to do three specific things in this area: a) develop initial assessments of DoD's ongoing needs for a range of materials; b) design and test an initial framework for evaluating the risks that DoD and the US could face with regard to such materials-- in war and in less-than-full-war conditions; and c) offer recommendations for reconfiguring the NDS in light of these assessments. I led a team at IDA that conducted these assessments, drawing on the best available information. We have provided DoD our independent assessments and recommendations. Today, I am pleased to offer them to you as well. These findings have contributed to the DoD proposal to reconfigure the National Defense Stockpile of strategic and critical materials. Portions of our research were incorporated by DoD into Appendices B and C of its Reconfiguration Report.

Our research suggests two major points relevant to this Subcommittee's purpose this morning:

1) First, the magnitude of DoD's purchases of strategic and critical materials warrants an on-going program of analysis to promote purchasing efficiencies and to ensure the stockpile remains relevant in the context of current and emerging national security risks. DoD buys significant amounts each year of many materials that are broadly known as strategic and critical. A sample of the results of IDA's initial efforts to assess these ongoing purchases is provided in Appendix B of DoD's NDS Reconfiguration Report to Congress. That appendix shows that DoD regularly buys at least three-quarters of a million tons of such materials each year.

2) A second major point is that while the current basis for estimating NDS requirements centers on US material needs and potential shortages in the context of a full-scale national security emergency scenario (consistent with Sect 14 of the Strategic and Critical Materials Act), such a focus may be too narrow. While a full-scale emergency scenario should be a key part of the US materials security challenge, the appropriate full future "challenge space" for assessing such material needs (both essential defense and essential civilian needs) and associated risks also ought to encompass a range of plausible, less-than-full-scale emergency

situations. These additional situations should include potential material supply disruptions due to natural disasters, political instability in key foreign countries, and selective terrorist attacks. IDA has made several recommendations to DoD regarding potential scenarios that could be used for this purpose, and provided initial results of risk assessments conducted using such scenarios.

IDA recommended that DoD consider establishing a Materials Security Program, incorporating several major components, including:

- A component focused on identifying and then leveraging DoD's significant buying power in various materials markets – in order to reap potential economies of scale.
- A component that would regularly assess the risks to material supplies across a range of possible disruption scenarios –from peace to full scale war. Such a component would also aim to identify and evaluate the benefits and costs of applying various strategies to mitigate such risks. Mitigation strategies could surely include, when appropriate, stockpiling -- as in the NDS. But they could also include: setting up special contingency contract material supply arrangements with US and highly reliable foreign producers; working out expedited supply procedures such as under the Defense Priorities and Allocation System (or DPAS); exploring feasible material substitution possibilities; and, when warranted, investing in domestic production capacity. Failing to work through practical risk mitigation strategies might result in lower *materiel* readiness, which in turn could inhibit operational performance of the US military on high priority tasks under some scenario conditions.

- A final component would work closely with major DoD materials users (chiefly the services and defense agencies) to systematically monitor and update DoD's regular and emergency demands for, and supply chains of, both traditional materials (such as those covered in the 2005 NDS Requirements Report to Congress) as well as leading edge, advanced materials (of the sort depicted in Appendix C of the DoD NDS Reconfiguration Report to Congress). With a strong, ongoing, collaborative partnership of this kind, the fragility of material and vital parts supply chains for essential military and civilian needs will be better understood than they are today. And the risks to materiel readiness and national security should be better mitigated as well.

This concludes my prepared testimony, Mr. Chairman and distinguished members of this Subcommittee. Thank you very much for inviting me to summarize our research on this important proposal this morning. I would be pleased to respond to any questions that you may have about these assessments and recommendations.

About Dr. Thomason:

Dr. Jim Thomason is a senior professional staff member and study director at the Institute for Defense Analyses in Alexandria, Virginia. His degrees are in political science and international relations from Harvard (AB with honors) and Northwestern (MA, PhD). He has taught international relations and research methods at Northwestern University and at the University of Hawaii. At IDA he leads the National Defense Stockpile project, the Defense Planning Scenario project, and the Global Defense Posture Project. In recent years he has led a project for DoD to evaluate the strategic risks to the nation of depending on one or another future force; several studies for the Office of the Secretary of Defense on ways to strengthen the Quadrennial Defense Review process; and studies for DoD and for the Commission on Roles and Missions to evaluate the benefits of U.S. military presence activities for the 21st century. He was a senior study group member of the "Hart-Rudman" Commission on National Security for the 21st Century. Dr. Thomason has published more than 60 reports and articles on strategic topics, including IDA papers and pieces in *Phalanx*, *Parameters*, *Armed Forces and Society*, and *Joint Forces Quarterly*. He may be reached at jthomaso@ida.org.

7/22/9

DISCLOSURE FORM FOR WITNESSES
CONCERNING FEDERAL CONTRACT AND GRANT INFORMATION

INSTRUCTION TO WITNESSES: Rule 11, clause 2(g)(4), of the Rules of the U.S. House of Representatives for the 110th Congress requires nongovernmental witnesses appearing before House committees to include in their written statements a curriculum vitae and a disclosure of the amount and source of any federal contracts or grants (including subcontracts and subgrants) received during the current and two previous fiscal years either by the witness or by an entity represented by the witness. This form is intended to assist witnesses appearing before the House Armed Services Committee in complying with the House rule.

Witness name: Dr. James S. Thomason, IDA (FFRDC)

Capacity in which appearing: (check one)

✓ Individual w/ Institute for Defense Analyses

___ Representative

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

FISCAL YEAR 2009

federal grant(s) / contracts	federal agency	dollar value	subject(s) of contract or grant
DE-6-1736	DoD/DLA/DNSC	0	NDS

FISCAL YEAR 2008

federal grant(s) / contracts	federal agency	dollar value	subject(s) of contract or grant
DE-6-1736	DoD/DLA/DNSC	$1.1M	NDS

FISCAL YEAR 2007

Federal grant(s) / contracts	federal agency	dollar value	subject(s) of contract or grant
DE-6-1736	DoD/DLA/DNSC	0	NDS

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

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

Current fiscal year (2007): _____;
Fiscal year 2006: _____;
Fiscal year 2005: _____.

Federal agencies with which federal contracts are held:

Current fiscal year (2007): _____;
Fiscal year 2006: _____;
Fiscal year 2005: _____.

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

Current fiscal year (2007): _____;
Fiscal year 2006: _____;
Fiscal year 2005: _____.

Aggregate dollar value of federal contracts held:

Current fiscal year (2007): _____;
Fiscal year 2006: _____;
Fiscal year 2005: _____.

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

Number of grants (including subgrants) with the federal government:

Current fiscal year (2007):_____;
Fiscal year 2006:_____;
Fiscal year 2005:_____.

Federal agencies with which federal grants are held:

Current fiscal year (2007):_____;
Fiscal year 2006:_____;
Fiscal year 2005:_____.

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

Current fiscal year (2007):_____;
Fiscal year 2006:_____;
Fiscal year 2005:_____.

Aggregate dollar value of federal grants held:

Current fiscal year (2007):_____; $0
Fiscal year 2006:_____;
Fiscal year 2005:_____.

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

JULY 23, 2009

RESPONSE TO QUESTION SUBMITTED BY MR. FORBES

Mr. LOWDEN. The purpose of the National Defense Stockpile is to protect the nation against a dangerous and costly dependence upon foreign sources of supply of strategic and critical materials in time of national emergency. The NDS is a reserve of strategic and critical materials which are unavailable in the U.S. in sufficient quantities to meet anticipated national security emergency requirements. Mining regulations that result in the closure of existing mines and/or hinder the development of additional domestic resources have the potential to expand dependence upon foreign supplies and thus could theoretically increase the number of materials which would require stockpiling. [See page 13.]

RESPONSE TO QUESTION SUBMITTED BY MR. TAYLOR

Mr. LOWDEN. The Department relies on its prime contractors (as an integral part of their program management responsibilities) to identify, manage, and solve program/supplier issues and risks. The DOD program office is responsible for maintaining frequent and open communications with the prime and key suppliers to keep appraised of any issues that could potentially affect the program's cost, schedule, or performance. The Military Services are encouraged to resolve identified industrial capability issues at the lowest level possible. However, there are cases when issues may impact more than a single program or Service.

The Defense Acquisition Guidebook directs program offices to elevate an industrial capabilities matter via their Program Executive Officer to the Office of the Deputy Under Secretary of Defense (Industrial Policy) when an item produced by a single or sole source supplier meets one or more of the following criteria (even if the program office has ensured that its program requirements can and/or will be met):

- it is used by three or more programs
- it represents an obsolete, enabling, or emerging technology
- it requires 12 months or more to manufacture
- it has limited surge production capability

The Mine Resistant Ambush Protected (MRAP) is a good example of the process. There was a shortfall in thin gauge MIL-A grade steel armor production capacity necessary to support rapid production of the MRAP vehicle and other operationally-important ground vehicles requiring protective armor. The MRAP managers elicited the assistance of Industrial Policy in uncovering the details associated with the shortage and resolving the problem. The availability of steel, generally, was not a production constraint; but the availability of the specialized thin gauge, quenched and tempered steel (a "specialty metal") needed for DOD armor applications was a constraint. The Department was required to waive various statutory domestic source restrictions to meet operational requirements.

The primary "beneficiary" of the waivers was U.S.-located Evraz-Oregon Steel. Although Oregon Steel quenches and tempers its steel in the United States, it does not have a blast furnace and buys its ingot from Mittal in Mexico. The addition of Oregon Steel increased relevant domestic production capacity by about 40 percent.

For MRAP, the Department waived restrictions concerning armor plate in the Defense Federal Acquisition Regulation. When the Department faces shortcomings in the industrial base (such as shortages of strategic or critical materials), it has authorities, responsibilities, and resources to address these deficiencies and promote innovation and competition. For example, the Department can:

- Directly fund innovation in its science and technology accounts, and encourage industry to do the same via their independent research and development accounts;
- Induce innovation by employing acquisition strategies that encourage competition at all levels of contract performance;

- Use contract provisions to preclude the ability of contractors to favor in-house capabilities or long-term teammate products over more innovative solutions available elsewhere;
- Block exclusive contractor teaming arrangements that effectively reduce the number of suppliers in a given market, especially if the teammates are dominant in a particular market sector; and/or
- Utilize other authorities such as Title III of the Defense Production Act to maintain or expand capacity for needed items or materials.

The Department also can, and does, formally establish restrictions within the Defense Federal Acquisition Regulation Supplement on the use of foreign products for certain defense applications, when necessary, to ensure the survival of domestic suppliers required to sustain military readiness.

Additional details regarding policies, procedures, and circumstances under which the Department will take action when there are problems with a supply chain or to preserve endangered industrial capabilities can be found in DOD Directive 5000.60, "Defense Industrial Capabilities Assessments," and the accompanying DOD Handbook 5000.60-H, "Assessing Defense Industrial Capabilities." [See page 25.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

JULY 23, 2009

QUESTIONS SUBMITTED BY MR. ORTIZ

Mr. ORTIZ. You stated that your office interprets "critical materials" as those for which a crisis in availability already exists. Is there some other defined term or way in which a strategic material for which availability to the Department is an issue of concern (but not at the crisis level) is or could be designated for review for policy action?

Mr. LOWDEN. The Department's analysis of and resulting definitions for "strategic" and "critical" materials were validated by the Strategic Materials Protection Board (SMPB) and published as the "*Analysis of National Security Issues Associated With Specialty Metals*," in the Federal Register (Volume 74, Number 34, Monday, February 23, 2009, in Notices).

From the publication:

" . . . the SMPB agreed that the term "Strategic Material" shall mean—

A material:

(1) which is essential for important defense systems,

(2) which is unique in the function it performs, and

(3) for which there are no viable alternatives. Strategic Materials include those specialty metals listed in 10 U.S.C. 2533b, and any other materials the Board may designate.

The SMPB also agreed that the term "Material Critical to National Security" (or "Critical Material") shall mean—

A "Strategic Material" for which:

(1) the Department of Defense dominates the market for the material,

(2) the Department's full and active involvement and support are necessary to sustain and shape the strategic direction of the market, and

(3) there is significant and unacceptable risk of supply disruption due to vulnerable U.S. or qualified non-U.S. suppliers."

It is evident that there are many materials that meet the definition of "strategic." It is also apparent that some of the "strategic" materials have risks and vulnerabilities associated with their supply, but do not meet all of the given criteria to be elevated to "critical." Even though these materials are not "critical," these "at risk" materials must still be monitored, and when appropriate, action taken to ensure their availability. The Department's proposed strategic materials management program includes a reproducible and dynamic process for identifying materials that are essential to national security and defense; and for identifying, analyzing, and watching strategic materials that are "at risk." When necessary, the process will also guide the selection and application of risk mitigation strategies to ensure a reliable supply of the materials.

Mr. ORTIZ. As part of the Strategic Materials Security Management System as described in your report, you note representation and analysis will be provided by such agencies as the Department of Commerce and the United States Geological Service. Do you anticipate cooperation and representation with the Department of Homeland Security as well?

Mr. LOWDEN. Currently, DNSC relies on the cooperation and support of other federal agencies that serve on the Interagency Market Impact Committee (MIC). The Department of Homeland Security is a member of the MIC. The co-chairs of the MIC are Department of Commerce and Department of State. Both the Department of Commerce and the United States Geological Service have been instrumental in providing analytical and technical support to DNSC in formulating the requirements report on material needs. This collaborative effort will continue to support the Strategic Materials Security Program.

Mr. ORTIZ. A number of references within the reconfiguration report make the statement that the new program would "require a stable funding source to make strategic acquisitions, undertake other risk mitigation strategies and operate the stockpile program". The report did not stipulate whether these funds should be appropriated or revolving in nature, only a "stable source of funding." Would a revolving fund be more appropriate for this type of program?

Mr. LOWDEN. The operation of the National Defense Stockpile is currently funded by the Transaction Fund which was established under the Strategic and Critical Materials Stock Piling Act. The implementation process for the Strategic Materials Security Program is an evolutionary one. There would be no need for additional funding to get the process started. As we begin the implementation we know there will be challenges, at that time the Department will work with the Administration and Congress to identify the available options for stable funding sources and the implications of each option.

Mr. ORTIZ. IDA's risk assessment recommended that the Department convene senior panels to review the most current assessments and make policy recommendations as to which supply scenarios the DOD should use as benchmarks to determine how much risk it is prepared to accept with respect to material sources in the years ahead. What has the Department done in this regard?

Mr. LOWDEN. ODUSD-Industrial Policy (IP) has tentatively identified mid-September 2009 for conducting an IP-Chaired Working Group for assessing supply side assumptions and making appropriate recommendations to ODUSD (L&MR) regarding supply side risk. Proposed representation at this time includes such offices as L&MR, PAE, OUSD (Policy), OUSD (P&R) and J-5. Another panel is planned to address demand-side assumptions after issuance and analysis of the Quadrennial Defense Review (QDR). DNSC's role in this process would be to provide input to the Working Group and implement policy decisions emanating from OSD.

Mr. ORTIZ. IDA also recommended that the Department should consider continuing to compile data from the military services on materials used to produce key weapon systems. What has the Department done in this regard?

Mr. LOWDEN. The Strategic and Critical Materials Working Group assembled the initial Integrated Materials List employing a robust process that included de-consolidation of weapons platforms down to basic materials, discussions with program offices, and interviews of experts to determine required materials. The Military Departments also provided input regarding materials with which they had encountered problems or believed would cause difficulties in the near future. The Military Departments and program officers are a necessary and valuable source of information and their participation is crucial to maintaining a dynamic and complete list of strategic materials and in identifying risks, vulnerabilities, or other problems associated with essential materials.

The Department, through the Strategic Materials Protection Board, is considering a new process of requiring the respective Military Departments to participate in the maintenance of the list of material requirements and in the identification of possible risks and vulnerabilities associated with these materials.

Mr. ORTIZ. What is the risk if we don't make the proposed changes to configuration and management of the National Defense Stockpile?

Mr. LOWDEN. Without the proposed changes to the configuration and management of the NDS, the primary risk is a shortage of the strategic and critical materials required for current and future defense and essential civilian needs. Reconfiguration is necessary to fully respond to evolving conditions in the world market and to the nation's rapidly changing requirements for both traditional and new materials, particularly during this era of increased dependence on foreign sources of supply. Reconfiguration will address non-conflict as well as conflict scenarios, and the nation's key users of strategic and critical materials, both essential civilian and defense.

The program will take into consideration fluctuating domestic and foreign industrial consumption and production capacities; technological advances; geopolitical issues; and supply chain vulnerabilities. Risk mitigation strategies and contingency plans will be developed and put in place. The reconfigured Stockpile will maintain close relationships with material users, and will readjust and assist as necessary to further reduce the risk of material unavailability. Establishing partnerships with friendly nations will enhance the nation's ability to ensure current and future availability of key materials; and the procuring and stockpiling selected materials deemed truly critical to the nation's security will provide the insurance policy for the Nation's needs.

Mr. ORTIZ. What are the economic implications involved in stockpile management? How would the proposed reconfiguration affect those implications?

Mr. LOWDEN. There will be some economic implications. First to clarify, with current funding, we can meet service and operational requirements. In the reconfigured organization, we would not build the Stockpile to previous levels. However, we may need additional investments, e.g., additional infrastructure and strategic sources. The amount of investment will depend upon input from the military services and commodities they identify as critical to their needs. When investment needs are determined, we will work within the Department to determine the most appropriate sources of funding.

Under the current configuration acquisition of strategic and critical materials is made in accordance with established Federal procurement practices. Both acquisition and disposal of strategic and critical materials from the stockpile are made under the following parameters:

(1) Competitive procedures are used.

(2) Efforts are made to avoid undue disruption of the usual markets of producers, processors, and consumers of such materials and to protect the United States against avoidable loss.

The Market Impact Committee as described in Question 3 plays an integral role in this process. Under the reconfiguration these practices would continue.

Mr. ORTIZ. Marketplace action and reaction would be another critical piece of the reconfiguration plan. Where would DOD get the workforce competencies and market research and intelligence expertise that would be required to manage the stockpile in this environment? Would this be a more appropriate function for the Department of Commerce? If so, what impediments could that cause?

Mr. LOWDEN. Over the past 15 years, the National Defense Stockpile/Defense National Stockpile Center (DNSC), on DOD's behalf, has managed a very robust marketing and sales program. DNSC's aggressive efforts to dispose of (sell) materials determined to be excess to defense needs have generated over $6 billion worth of revenue, and have afforded DNSC the opportunity to develop and strengthen the precise core competencies required to successfully manage the reconfigured stockpile.

With its extensive experience in the domestic and international marketplace, DNSC possesses the necessary expertise in all facets of commodity marketing and sales, as well as commodity procurement. Integral to each process is DNSC's demonstrated ability to effectively evaluate global market conditions; e.g., determine supply and contractor reliability, pricing, etc., and to analyze supply chain risks. For example, after conducting extensive market research and intelligence, an internal DNSC economist has prepared and issued a comprehensive "Alert" of pertinent issues regarding alumina/aluminum, a commodity included in the list of 11 materials used in the largest quantities by DOD.

DNSC's extensive communication network, customer outreach, and strong, established relationships with commodity traders, producers, processors, individual consumers, and foreign and local governments further point to DNSC as the best manager for the reconfigured stockpile.

In the reconfigured stockpile, DNSC's efforts would be augmented through interagency, collaborative efforts involving the use of experts from such organizations as the Departments of Commerce and State, DCMA, and the U.S. Geological Survey, as well as from the formally established Stockpile Market Impact Committee (MIC). The Department of Commerce and the State Department are co-chairs for the Stockpile's MIC, and DHS, Agriculture, Energy, Interior and Treasury are representatives. DNSC has standing Memoranda of Agreement with DOC, USGS and Census for data collection and analysis, and collaborates with DCMA on a regular basis.

Within DOD, the effect of the Strategic and Critical Materials Working Group has been to establish closer relationships among DNSC, the Military Services, Research Laboratories, and OSD, and the revised requirements determination process will build upon that relationship.

Mr. ORTIZ. Please explain what is meant in the report by "the reconfigured program requires a broader internal DOD profile."

Mr. LOWDEN. Building on the relationships established during the DOD Strategic and Critical Materials Working Group, the Stockpile will adopt a more proactive, preventive approach to material management by increasing the collaboration and communication flow among OSD, the Military Services, Joint Chiefs of Staff J–8, and research labs. Stockpile-issued material alerts will keep OSD and key stakeholders abreast of important developments in the global marketplace. Aggressive outreach and consultation to the Military Services will provide expertise in strategic sourcing and other risk mitigation strategies. Senior OSD panels will consider and provide policy decisions for issues such as supply and demand-side assumptions/scenarios, and the DOD Strategic Materials Protection Board (SMPB) will provide guidance and validation of materials determined to be at risk.

Mr. ORTIZ. In the hearing, you mentioned a Pilot Program with the Army and Navy. Could you provide additional details on what the pilot is, and what the program hopes to achieve in the future? What would be the next steps if the pilot is successful?

Mr. HOLDER. Under the pilot program, DNSC awarded a strategic sourcing contract to procure titanium to support select Army and Navy programs. The contract vehicle enabled DNSC to aggregate the quantity of material needed by the two serv-

ices in order to leverage a more favorable unit price. This material was previously purchased by the defense contractors often as a spot market transaction where prices are traditionally high.

The commitment under the pilot program was for approximately 368,800 lbs of titanium over four years. Army provided 10,000 lbs of offal (scrap) material as feedstock to reduce the out of pocket cost for the material. This scrap material was purchased by the contractor at prevailing scrap market value. The contract included a provision for a scrap management program under which DOD would receive value for any scrap material resulting from the manufacturing processes either as a credit against future deliveries or priced at prevailing scrap market value.

The pilot program realized a cost avoidance of approximately $1.0M for the Army. The Navy program (the Virginia Submarine Program) is still drawing against the contract. Other Navy programs have also purchased titanium against this contract as the unit cost for the material was lower than what they previously were charged when the material was purchased by the defense contractor.

DNSC is currently partnering with Army Armament Research, Development and Engineering Center (ARDEC) to expand the footprint of the pilot program. ARDEC is capturing information on program needs to facilitate a more comprehensive procurement strategy for not only titanium but other strategic materials. Army plans to assist DNSC in working with the other services in identifying material requirements in order to maximize the benefit to DOD in material leverage procurements.

Mr. ORTIZ. When can we expect to see Legislative Proposals to implement this proposal?

Mr. HOLDER. DLA has prepared a legislative proposal to implement the recommendations contained in the DNSC Reconfiguration Report and this proposal is being considered by the Department for submission in the Department of Defense legislative package for Fiscal Year 2011. The legislative proposal includes a requirements determination process that consists of a wide variety of conflict and non-conflict planning scenarios, expands the ability to release strategic and critical materials from the stockpile, and overall allows greater flexibility in meeting needs of the military services for strategic and critical materials.

Mr. ORTIZ. As part of the Strategic Materials Security Management System as described in your report, you note representation and analysis will be provided by such agencies as the Department of Commerce and the United States Geological Service. Do you anticipate cooperation and representation with the Department of Homeland Security as well?

Mr. HOLDER. Currently, DNSC relies on the cooperation and support of other federal agencies that serve on the Interagency Market Impact Committee (MIC). The Department of Homeland Security is a member of the MIC. The co-chairs of the MIC are Department of Commerce and Department of State. Both the Department of Commerce and the United States Geological Service have been instrumental in providing analytical and technical support to DNSC in formulating the requirements report on material needs. This collaborative effort will continue to support the Strategic Materials Security Program.

Mr. ORTIZ. A number of references within the reconfiguration report make the statement that the new program would "require a stable funding source to make strategic acquisitions, undertake other risk mitigation strategies and operate the stockpile program". The report did not stipulate whether these funds should be appropriated or revolving in nature, only a "stable source of funding." Would a revolving fund be more appropriate for this type of program?

Mr. HOLDER. The Department has not determined which funding source would be the most appropriate to support the National Defense Stockpile reconfigurations. Currently Defense National Stockpile Center operating costs and payments to entities mandated by Congress are paid out of the Transaction Fund.

Mr. ORTIZ. IDA's risk assessment recommended that the Department convene senior panels to review the most current assessments and make policy recommendations as to which supply scenarios the DOD should use as benchmarks to determine how much risk it is prepared to accept with respect to material sources in the years ahead. What has the Department done in this regard?

Mr. HOLDER. The Office of the Deputy Under Secretary of Defense for Industrial Policy (IP) in cooperation with the Office of the Deputy Under Secretary of Defense for Logistics and Materiel Readiness (L&MR) is convening the senior panel for this purpose. IP has tentatively identified mid-September 2009 for conducting this IP-Chaired Panel. Proposed panel members include representatives from L&MR, Program Analysis and Evaluation, OUSD (Policy), OUSD (Personnel & Readiness) and J–5.

DNSC's role in this process would be to provide input to the Panel and implement policy decisions emanating from OSD.

Mr. ORTIZ. IDA also recommended that the Department should consider continuing to compile data from the military services on materials used to produce key weapon systems. What has the Department done in this regard?

Mr. HOLDER. Recognizing the need to develop a more comprehensive listing of materials needed by the services to support their weapon systems, DNSC will be awarding a contract to develop a process to compile "live" data on the quantity and character of strategic materials purchased and consumed in support of DOD vehicles, weapons and related systems. For the purpose of demonstrating the effectiveness and efficiency of the process, the contractor will be required to compile information on the titantium procured to support eleven cross-service systems. Data collected will include: form and quantity of the material purchased; specific end item part or sub-system to which the material was applied; supplier of the material; unit price; lead time; amount of material consumed; and amount of scrap material with the possibility of reclamation at each step of the manufacturing phases.

Mr. ORTIZ. What is the risk if we don't make the proposed changes to configuration and management of the National Defense Stockpile?

Mr. HOLDER. The primary risk is a shortage of the strategic and critical materials required for current and future defense and essential civilian needs. Reconfiguration is necessary to fully respond to evolving conditions in the world market and to the Nation's rapidly changing requirements for both traditional and new materials, particularly during this era of increased dependence on foreign sources of supply. Reconfiguration will address non-conflict as well as conflict scenarios, and the Nation's key users of strategic and critical materials, both essential civilian and defense.

Mr. ORTIZ. What are the economic implications involved in stockpile management? How would the proposed reconfiguration affect those implications?

Mr. HOLDER. There will be some economic implications. The current authorization allows us to operate the National Defense Stockpile. During the initial implementation of the Strategic Materials Security Program no additional funding would be required. In the reconfigured organization, we would not build the Stockpile to previous levels. However, additional funding may be needed for the limited additions to the stockpile and the implementation of the risk mitigation strategies. The amount of investment will depend upon input from the military services and commodities they identify as critical to their needs. When investment needs are determined, we will work within the Department to determine the most appropriate sources of funding. The efficiencies and flexibility of the reconfigured program will allow the Department to realize cost avoidances and savings by aggregating material acquisitions and entering into long term contracts.

Under the current configuration acquisition of strategic and critical materials are made in accordance with established Federal procurement practices. Both acquisition and disposal of strategic and critical materials from the stockpile are made under the following parameters:

(1) Competitive procedures are used.

(2) Efforts are made to avoid undue disruption of the usual markets of producers, processors, and consumers of such materials and to protect the United States against avoidable loss.

The Market Impact Committee as described in Question 3 plays an integral role in this process. Under the reconfiguration these practices would continue.

Mr. ORTIZ. Marketplace action and reaction would be another critical piece of the reconfiguration plan. Where would DOD get the workforce competencies and market research and intelligence expertise that would be required to manage the stockpile in this environment? Would this be a more appropriate function for the Department of Commerce? If so, what impediments could that cause?

Mr. HOLDER. Over the past 15 years, the National Defense Stockpile/Defense National Stockpile Center (DNSC), on DOD's behalf, has managed a very robust marketing and sales program. DNSC's aggressive efforts to dispose of (sell) materials determined to be excess to defense needs has generated over $6 billion worth of revenue, and has afforded DNSC the opportunity to develop and strengthen the precise core competencies required to successfully manage the reconfigured stockpile. With its extensive experience in the domestic and international marketplace, DNSC possesses the necessary expertise in all facets of commodity marketing and sales, as well as commodity procurement. Integral to each process is DNSC's demonstrated ability to effectively evaluate global market conditions, i.g., determine supply and contractor reliability, pricing, etc., and to analyze supply chain risks.

In the reconfigured stockpile, DNSC's efforts would be augmented through interagency, collaborative efforts involving the use of experts from such organizations as the Departments of Commerce and State, DCMA, and the U.S. Geological Survey, as well as from the formally established Stockpile Market Impact Committee (MIC).

The Departments of Commerce and the State Department are co-chairs for the Stockpile's MIC, and DHS, Agriculture, Energy, Interior and Treasury are representatives. DNSC has standing Memoranda of Agreement with DOC, USGS and Census for data collection and analysis, and collaborates with DCMA on a regular basis. Within DOD, the effect of the Strategic and Critical Materials Working Group has been to establish closer relationships among DNSC, the Military Services, Research Laboratories, and OSD, and the revised requirements determination process will build upon that relationship.

Mr. ORTIZ. Please explain what is meant in the report by "the reconfigured program requires a broader internal DOD profile."

Mr. HOLDER. Building on the relationships established during the DOD Strategic and Critical Materials Working Group, the Stockpile will adopt a more proactive, preventative approach to material management by increasing the collaboration and communication flow among OSD, the Military Services, Joint Chiefs of Staff J-8, and research labs. Stockpile-issued material alerts will keep OSD and key stake holders abreast of important developments in the global marketplace. Aggressive outreach and consultation to the Military Services will provide expertise in strategic sourcing and other risk mitigation strategies. Senior OSD panels will consider and provide policy decisions for issues such as supply and demand-side assumptions/scenarios, and the DOD Strategic Materials Protection Board (SMSP) will provide guidance and validation of materials determined to be at risk.

Mr. ORTIZ. IDA's risk assessment recommended that the Department convene senior panels to review the most current assessments and make policy recommendations as to which supply scenarios the DOD should use as benchmarks to determine how much risk it is prepared to accept with respect to material sources in the years ahead. What was the analysis behind this recommendation?

Dr. THOMASON. The risk analysis process that IDA has designed for DOD in this area has several key steps. One important step involves DOD selecting the specific scenarios (including assumptions about essential material demands and material supply conditions) for which the United States should be prepared. Such planning scenarios normally have both material demand-side and material supply-side assumptions. Scenario-related decisions such as what defense and civilian equipment (and derived material) demands it is essential to meet, and what supplies of material production will be available from the US (and potentially elsewhere) on what schedules to meet those demands, are crucial. Such scenario-related decisions are important in this process because IDA's analysis has shown repeatedly that these decisions can have major effects on estimated shortages of materials such as titanium, tungsten, cobalt, tantalum and many others.* Based on a variety of such analyses, IDA has recommended to DOD that such scenario decisions should be made explicitly in the risk assessment process—in a structured and transparent way. DOD has had key elements of such an explicit decision process in place for the NDS requirements report for a number of years. For a reconfigured stockpile (materials security) program, IDA again recommends that DOD have an explicit process for such decisions, and in particular that DOD convene an official advisory group to set key assumptions for each major material security assessment. IDA does not have a specific recommendation as to which offices should be members of this advisory group.

Mr. ORTIZ. IDA also recommended that the Department should consider continuing to compile data from the military services on materials used to produce key weapon systems. Why do you believe this is necessary?

Dr. THOMASON. OSD-led research in 2008 identified some materials of concern to one or more of the Services. These materials were summarized in Appendix C of the April 2009 NDS Reconfiguration Report to Congress. IDA believes, based on its research, that obtaining ongoing and even more specific information of this kind from the Services—about the scope, nature and persistence of any problems they have had or anticipate with those materials—could be useful to DOD for at least three reasons. First, detailed, timely evidence from the Services can help DOD diagnose the problems more clearly and thus promote the most cost-effective risk-mitigation approaches. Second, obtaining high-quality evidence of material demands of each individual DOD component for key systems can help DOD identify and leverage opportunities to achieve purchasing efficiencies department-wide. Third, new types of materials are being introduced into high-priority weapon systems regularly

*The last DOD NDS Requirements Report to Congress (2005) provides considerable analysis and evidence of such major effects. (See table 2 and figure 1, pp 11-12 of that report.) Appendix B of the April 2009 DOD NDS Reconfiguration Report to Congress references a similar set of IDA analyses for DOD showing the major effects that selecting one or another Peacetime Supply Disruption Scenario may have upon estimated material shortages.

and DOD would manage material risks best with clear, timely visibility into the DOD-wide demands for such materials and into the specific suppliers of those materials, both in the US and abroad.

Mr. ORTIZ. What is the risk if we don't make the proposed changes to configuration and management of the National Defense Stockpile.

Dr. THOMASON. There are at least two types of risk. One risk is that more serious material shortages will occur for DOD, with extra shortages in turn degrading the *materiel* readiness and operational performance of DOD forces more than otherwise. A second type of risk of not reconfiguring is that DOD will be unable to implement an integrated program to achieve purchasing efficiencies for strategic materials as readily as it could with reconfiguration. Savings achieved through these purchasing efficiencies can be applied to other critical needs in DOD, thus further mitigating operational risk.

Mr. ORTIZ. What are the economic implications involved in stockpile management? How would the proposed reconfiguration affect those implications?

Dr. THOMASON. Our research suggests that if DOD can achieve purchasing efficiencies in its buys of selected materials through such a reconfiguration, this result could regularly free up DOD funds, potentially millions of dollars per year, for other high-priority defense budget items.

Mr. ORTIZ. Marketplace action and reaction would be another critical piece of the reconfiguration plan. Where would DOD get the workforce competencies and market research and intelligence expertise that would be required to manage the stockpile in this environment? Would this be a more appropriate function for the Department of Commerce? If so, what impediments could that cause?

Dr. THOMASON. The reconfiguration proposal calls for a team effort with other departments and agencies, such as through the existing interagency Market Impact Committee (MIC), which the DOC chairs. Interagency expertise has proven useful to DOD in the past, including research by DOC, DOI and DOS, and should continue to be a strong part of a reconfigured materials security program.

Mr. ORTIZ. Should DOC have the lead instead of DOD? If DOC had the lead, would there be any problems?

Dr. THOMASON. IDA was not asked to study this issue. Whichever organization leads this effort, interagency collaboration is essential.

Mr. ORTIZ. Please explain what is meant in the report by "the reconfigured program requires a broader internal DOD profile."

Dr. THOMASON. IDA was not involved in developing or supporting development of this conclusion. I cannot, therefore, explain its meaning beyond the language contained in the report itself.

QUESTIONS SUBMITTED BY MR. LAMBORN

Mr. LAMBORN. In your testimony you state that there is "some confusion regarding the definition of strategic material." Additionally, you state that the designation of "critical material" is only given in the instance that the Department of Defense (DOD) is the "last big user" of that material. Is it DOD Industrial Policy's position that a material will only be deemed "critical" if DOD is the sole consumer of that material in the marketplace? If so, how does DOD ensure availability of supply of defense articles for materials that utilize materials with only limited supply in the supply-chain, but that have some commercial applications? How does refusing to classify materials, such as rare earth metals (which are predominately available from Chinese sources), as "critical" make sense when these materials are required in the production of vital DOD components? Is there a long-term strategy for ensuring a supply of materials, such as defense-specific components containing rare earth metals, considering there are some commercial uses of these rare earths or will DOD simply let the market dictate their availability before taking any action?

Mr. LOWDEN. The Department's analysis of and resulting definitions for "strategic" and "critical" materials were validated by the Strategic Materials Protection Board (SMPB) and published as the "*Analysis of National Security Issues Associated With Specialty Metals,*" in the Federal Register (Volume 74, Number 34, Monday, February 23, 2009, in Notices). A more detailed discussion of these definitions can be found in the answer to Congressman Ortiz's question #11.

Additional information and analysis regarding the definitions of "strategic material" and "material critical to national security" or "critical material" will be provided in the report to the House and Senate Armed Services Committees as described on page 351 of H.R. 2647, National Defense Authorization Act for Fiscal Year 2010.

Mr. LAMBORN. This Committee clarified in the FY09 and FY10 National Defense Authorization Bill via "Items of Special Interest" that it was concerned about DOD's implementation of Section 842 of the National Defense Authorization Act for Fiscal Year 2007 and Section 804 and 884 of the National Defense Authorization Act for Fiscal Year 2008. In fact, the committee has contacted DOD on numerous occasions with concerns over the definition "production." Has DOD noted those concerns and how were they addressed in the release of the Final Rule by DOD on July 29, 2009? How does DOD justify a definition of "production" that allows late stage finishing processes to qualify as a major production process that will allow minimal manufacturing of metal to occur in the United States?

Mr. LOWDEN. The issues concerning "produced" are addressed in "*Defense Federal Acquisition Regulation Supplement; Restriction on Acquisition of Specialty Metals (DFARS Case 2008–D003),*" published in the Federal Register, Volume 74, Number 144, Wednesday, July 29, 2009, under Rules and Regulations. This is the final rule amending the Defense Federal Acquisition Regulation Supplement (DFARS) to address statutory restrictions on the acquisition of specialty metals not melted or produced in the United States. The rule implements Section 842 of the National Defense Authorization Act for Fiscal Year 2007 and Sections 804 and 884 of the National Defense Authorization Act for Fiscal Year 2008. All input was considered in the decision making process. Additional analysis regarding the definition of "produce" will be included in the report to the House and Senate Armed Services Committees as described on page 351 of H.R. 2647, National Defense Authorization Act for Fiscal Year 2010.

From the Federal Register:

"The law has never provided a definition of "produce" with regard to the requirement to acquire domestic specialty metals. The 1973 DOD Appropriations Act (Pub. L. 92–570) added specialty metals to the annual Berry Amendment restrictions, requiring that restricted items be "grown, reprocessed, reused, or produced in the United States." The Secretary of Defense at that time (Melvin Laird), in a memorandum setting forth DOD planned implementation of this restriction, interpreted this requirement to mean "melted" when applied to specialty metals, and the reasonableness of this interpretation was upheld in the courts. This does not mean that this is the only possible interpretation. When Congress created the new 10 U.S.C. 2533b, while following the Laird memo traditions in many respects, it reinstated "or produced," allowing that melting was not the only acceptable process for creation of domestic specialty metal.

According to DOD technical experts, quenching and tempering is not an insignificant process. Melting is only one stage in a multi-step process that is used to produce an item with properties that meet the requirements of an application, i.e., specifications. Melting for most metals accounts for about one third of the final price of a wrought product. Manufacturers have stated that the operations associated with forming and heat treating account for more than one-half of the price of a mill product such as plate. (The prices for mill products used by the military are typically higher than for commercial products due to more stringent military requirements.) Although alloying elements are added during "melting," the primary casting (ingot, slab, bloom, etc.) does not possess the microstructures and/or phases that are required to produce desired properties. Using steel as an example, after primary casting, the metal is shaped and then heat treated to produce the desired properties in the final product. This is true for plate, wire, sheet, etc. Steel's versatility is primarily due to its extraordinary response to heat treatment. Heat treatment is used to control the microstructure and thus the properties of the steel. Different iron carbon phases form at critical temperatures, and it is the combination and concentration of these phases that produce the desired mechanical properties in the steel. DOD experts believe that heat treatment may be the single most important stage in metals processing for DOD applications. The final properties of the metal are determined by the heat treat schedule. This is true for most if not all metals and their alloys. Heat treatment results in a product with properties that meet the specified requirements. The specifications for a material typically include not just chemistry but also the mechanical and physical properties as well as the condition of the product, i.e., surface finish, flatness, waviness. Forming and heat treatment processes are very important to producing an item that meets the requirements of an application. It is after heat treatment that the item possesses all of the attributes that are needed for the required application.

The concern that magnetization can be considered production under this rule is unfounded. The definition of "produce" has not been left to open ended interpretation. It has narrowly specified what processes other than melting are included, and does not include magnetization. DOD does not see any impact on the high perform-

ance magnet industry from the definition of "produce," because tempering and quenching processes are specifically restricted to the production of steel plate, and gas atomization and sputtering are restricted to the production of titanium.

DOD acknowledges the additional restriction on armor plate in DFARS 252.225–7030, which requires that armor plate be melted and rolled in the United States. Therefore, any acquisition of armor plate by DOD must satisfy both statutory restrictions.

DOD performed an industrial capabilities assessment in 2007 to support rapid production of the MRAP vehicles and other important defense programs relying on protective armor. The assessment found that availability of thin gauge MIL–A grade steel armor was the limiting factor in domestic production. The industrial capabilities assessment identified a total of four North American steel mills collectively capable of producing up to 12,000 tons per month of thin gauge armor steel plate. All four reported that quench and temper operations (not steel melting capacity or ingot/slab availability) were the limiting factor in their ability to produce the thin gauge armor needed to meet U.S. military demand. In contrast to the demonstrated maximum North American MIL–A grade thin gauge armor steel plate production capacity of 12,000 tons per month, the American Iron and Steel Institute (via its Web site) asserts that domestic raw steel melt production per week is usually in excess of 2 million tons (8 million tons per month). To meet peak MRAP and other DOD requirements, the four mills made capital investments and process improvements that enabled a 100 percent increase (to 24,000 tons per month) in thin gauge armor steel plate production capacity. However, two of the mills rely on ingot/slab melted outside the United States. If these mills had been excluded from participation, the sustained MRAP production rate would have been limited to about 600 vehicles per month (instead of the actual sustained rate of 1,100 vehicles per month); and it would have taken twice as long to deploy MRAP vehicles into Iraq and Afghanistan.

DOD also notes that the specialty steel industry does not object to the other expansions DOD provided in the definition of "produce," such as gas atomization, sputtering of titanium, or titanium alloy powder. None of these processes is a melting process. It is inconsistent to accept some non-melt processes, but not others.

DOD considered processing a domestic non-availability determination under the non-availability exception or the national security exception, but both avenues represented significant obstacles, and were rejected as unsuitable options. A national security exception requires that the contractor become compliant. The availability exception was determined to be impracticable, time-consuming, and inefficient."

Mr. LAMBORN. DOD recently released a Final Rule implementing Section 842 of the National Defense Authorization Act for Fiscal Year 2007 and Section 804 and 884 of the National Defense Authorization Act for Fiscal Year 2008. In that rule, it defined "high performance magnets" as "a permanent magnet that obtains a majority of its magnetic properties from rare earth metals (such as samarium)." However, Congress explicitly defined "high performance magnet" in its Conference Report (H.R. 110-477), which states that "'high performance magnet' means permanent magnets containing 10 or more percent by weight of materials such as cobalt, samarium, or nickel." How can DOD justify a redefinition that ignores congressional intent, particularly considering its impact on the alnico magnet industry? Was DOD unaware of the congressional definition?

Mr. LOWDEN. The issues concerning "high performance magnets" were addressed in "*Defense Federal Acquisition Regulation Supplement; Restriction on Acquisition of Specialty Metals (DFARS Case 2008–D003),*" published in the Federal Register, Volume 74, Number 144, Wednesday, July 29, 2009, under Rules and Regulations. This is the final rule amending the Defense Federal Acquisition Regulation Supplement (DFARS) to address statutory restrictions on the acquisition of specialty metals not melted or produced in the United States. The rule implements Section 842 of the National Defense Authorization Act for Fiscal Year 2007 and Sections 804 and 884 of the National Defense Authorization Act for Fiscal Year 2008. All input was considered in the decision making process.

To define "high performance magnets" as "permanent magnets containing 10 percent or more by weight of materials such as cobalt, samarium, or nickel" is technically unsound and open-ended. Cobalt and nickel have been primary alloying elements for permanent magnet materials since exploration of these materials began over 100 years ago. By this unbounded definition, almost all magnets would be covered. The table listing compositions of many magnetic materials containing specialty metals is provided to highlight this assertion.

Composition of Magnetic Materials Containing Specialty Metals

Magnetic Material	Wt. % Specialty Metal		
	Cobalt	Nickel	Titanium
Cobalt Steels			
17% Co Steel	17	-	-
38% Co Steel	38	-	-
Al-Ni-Co			
Alnico 1	5	21	-
Alnico 2	13	19	-
Alnico 3	-	25	-
Alnico 5	24	14	-
Alnico 6	24	16	1
Alnico 8	35	15	5
Alnico 8HC	38	14	8
Alnico 9	35	15	5
Sm-Co			
$SmCo_5$	66	-	-
Sm_2Co_{17}	77	-	-
Other permanent magnet alloys			
AlNiFe	-	25	-
Remalloy	12	-	-
CuNiCo	29	21	-
Vicalloy	52	-	-
FeCrCo	12	-	-
NdFeB	Up to 16	-	-

DOD does not consider alnico magnets to be "high performance magnets." The Department does note that representatives from permanent magnet suppliers established in discussions with DOD technical experts that virtually all alnico and samarium cobalt magnets are made to unique customer specifications and are not COTS items. Accordingly, direct DOD purchase of such permanent magnets almost certainly would involve non-COTS magnets, which must comply with specialty metals provisions, whether or not the magnets are judged to be high performance magnets. With respect to permanent magnets incorporated into COTS subsystems or end items, such magnets, whether COTS or non-COTS, high performance or not high performance, are by statute not required to utilize specialty metals melted or produced in the United States. Therefore, the definition of high performance magnet makes a difference only with regard to the 2 percent minimum content exception and has no significant impact on the use of alnico magnets for defense applications.

The text addressing "high performance magnets" from the DFARS rule referenced earlier is provided for easy reference.

"With regard to whether it is meaningful to define "high performance magnet" as a permanent magnet that obtains a majority of its magnetic properties from rare earth metals: Cobalt, iron, and nickel are the three primary ferromagnetic metals and, therefore, are present in most, if not all, permanent magnets. However, it is the very strong magnetocrystalline anisotropy (the property of being directionally dependent) of certain rare earth elements that produces the exceptional magnetic behavior in the materials to which they are added. The partially filled 4f electron subshells in rare earths lead to magnetic properties in a manner similar to the partially filled 3d electron subshells in transition elements such as cobalt, iron, and nickel. However, the magnetic moment of a rare earth material is typically an order of magnitude greater than that in a transition element; and rare earths exhibit a

large anisotropy due to dipolar interactions. In summary, rare earths possess very unique electron structures that produce extreme anisotropy in their magnetic properties.

DOD technical experts have concluded that there is no industry standard definition for high performance magnets. However, magnet performance is measured using magnetic properties and temperature capability.

- Magnetic properties are summarized using maximum energy product. DOD technical experts reviewed various references that place heavy emphasis on the maximum energy product of a magnet as "the figure of merit" by which permanent magnet materials are judged. The greater the maximum energy product of a permanent magnetic material, the more powerful the magnet, and the smaller the volume (and typically the weight) of the magnet required for a given application. The maximum energy products for rare earth magnets are significantly higher than those for ferrite and alnico materials, thus supporting their designation as "high performance magnets."
- Temperature stability is measured using maximum operating and Curie temperatures (the temperature below which there is a spontaneous magnetization in the absence of an externally applied magnetic field). Although alnico magnetic materials rank well on maximum use temperature and Curie temperature, this does not overcome the substantially lower maximum energy product.

The maximum energy product ranking of various magnetic materials and temperature stability measurements are as follows:

Magnetic Material	Max. Energy Product (kJ/m^3)	Max. Energy Product (MGOe)	Max. Use Temp. (°C)	Curie Temp. (°C)
Steel	< 2	low	< 100	
Co-Steels	1 – 8	< 1	100	
Ferrites	8 – 32	1 – 4	300	450
Alnico (AlNiCo)	11 – 72	1 – 9	550	860
Samarium-Cobalt ($SmCo_5$)	130 – 210	16 – 25	300	750
Samarium-Cobalt (Sm_2Co_{17})	160 – 260	20 – 32	550	825
Neodymium-Iron-Boron ($Nd_2Fe_{14}B$)	200 – 450	25 – 50	150	315

Of today's permanent magnets containing specialty metals, only samarium cobalt magnet materials possess the combination of properties necessary to be considered "high performance magnets." The only other permanent magnets today that obtain a majority of their magnetic properties from rare earths are neodymium-iron-boron magnets. Neodymium-iron-boron magnets are high performance magnets, but normally do not contain specialty metals. Ferrites are not high performance magnets (as was erroneously stated in the preamble to the proposed rule), nor do they contain specialty metals.

Representatives from permanent magnet suppliers asserted in discussions with DOD engineers that alnico magnets possessed superior toughness and calibration sensitivity qualities, and those qualities supported designating alnico magnets as high performance magnets. DOD engineers considered, but ultimately did not accept, that rationale.

- Mechanical strength and toughness generally are not employed as measures of merit for permanent magnets, because all permanent magnetic materials of interest (ferrites, rare-earths, and alnico) are hard and brittle. Section I, subsection 6.0, of Magnetic Materials Producers Association Standard No. 0100–00, Standard Specifications for Permanent Magnet Materials, states that most permanent magnet materials lack ductility and are inherently brittle. Such materials should not be utilized as structural components in a circuit. Measurement of properties such as hardness and tensile strength are not feasible on commercial materials with these inherent characteristics. Therefore, specifications of these properties are not acceptable.

- Finally, calibration sensitivity is an indication of precision but not of high performance.

DOD technical experts agree that, in addition to maximum energy product, parameters such as temperature stability, temperature range, resistance to demagnetization, corrosion resistance, mechanical toughness, and machinability contribute to the decision as to which type of magnet to use for a military application. However, just because a particular magnetic material is most appropriate for a particular application does not mean that it is a high performance magnet. Not every application requires the use of a high performance magnet.

Although DOD does not consider alnico magnets to be high performance magnets, regardless of the impact of this decision on the industry, DOD notes that representatives from permanent magnet suppliers further established in discussions with DOD technical experts that virtually all alnico and samarium cobalt magnets are made to unique customer specifications and are not COTS items. Accordingly, direct DOD purchase of such permanent magnets almost certainly would involve non-COTS magnets, which must comply with specialty metals provisions, whether or not the magnets are judged to be high performance magnets. With respect to permanent magnets incorporated into COTS subsystems or end items, such magnets, whether COTS or non-COTS, high performance or not high performance, are by statute not required to utilize specialty metals melted or produced in the United States. Therefore, the definition of high performance magnet makes a difference only with regard to the 2 percent minimum content exception and has no significant impact on the use of alnico magnets for defense applications. To define "high performance magnets" as "permanent magnets containing 10 percent or more by weight of materials such as cobalt, samarium, or nickel" would be technically unsound and open-ended. Cobalt and nickel have been primary alloying elements for permanent magnet materials since exploration of these materials began over 100 years ago. By this unbounded definition, almost all magnets would be covered. Therefore, no change has been made to the definition of "high performance magnet."

Mr. LAMBORN. Following up on Mr. Kissell's question regarding any potential vulnerability in our DOD supply chain what does DOD consider to be viable, reliable alternative sources of supply for the following materials?

Titanium—Is there a sufficient quality and quantity of aerospace grade titanium produced in the United States to meet the needs of the Department of Defense? Would it be acceptable if DOD suppliers were reliant on VSMPO in Russia for a substantial quantity of aerospace titanium? Are all potential sources of aerospace grade titanium, i.e., U.S., Russia, China, considered equally reliant?

Mr. LOWDEN. The three domestic titanium producers have been boosting capacity to support the upcoming growth in the aerospace market (Airbus A380, Boeing 787 and Joint Strike Fighter). In 2007, U.S. production of titanium metal products rose to record levels with production of ingot and mill products increasing by 11% and 6%, respectively, from the previous year. Despite the current economic downturn, the domestic titanium producers continue to expand production capacity and expect much of the new capability to be on-line by 2011. Domestic sponge capacity will be double that of 2005 levels and mill product capacity increased by almost as much. A recently released RAND study predicts there will be excess titanium production capacity by 2010. In addition to these factors, the continued delays in Airbus A380, Boeing 787 and Lockheed Martin's Joint Strike Fighter have given extra breathing space for a market that previously anticipated a shortfall in availability.

Mr. LAMBORN. Alnico magnets—Are there alnico magnets produced in sufficient quality and quantity to meet the needs of the Department of Defense from other than Chinese sources? Would it be acceptable if DOD suppliers were reliant on Chinese suppliers for alnico? Are all potential sources of alnico, i.e., U.S. or China, considered equally reliant?

Mr. LOWDEN. There are three primary domestic Anico magnet producers. Alnico alloys have some of the highest Curie points of any magnetic material and thus are favored for elevated temperature applications. In spite of this advantage, they are being superseded by rare earth magnets, whose stronger fields (Br) and larger energy products (BHmax) allow smaller size magnets to be used for a given application. Current production of Alnico magnets is rather low and continues to decline as the availability of the rare earth materials improves and engineering approaches are being explored to allow the use of low cost ferrites in as many applications as possible. The high temperature stability of Sm-Co magnets now matches or exceeds that of the Alnico materials. Sm-Co magnets can thus be used in the same applications as Alnico magnets, but due to their improved magnetic properties, the Sm-Co magnets would be smaller. Many sources show growth for every permanent mag-

netic material market with the exception of Alnico for which some experts predict the market to shrink by 1/3 in the next ten years.

Mr. LAMBORN. Neodymium Iron Boron magnets—Are there neodymium-iron-boron magnets produced in sufficient quality and quantity to meet the needs of the Department of Defense from sources other than Chinese manufactures? When considering the manufacturing of magnets, is the base neodymium metal available from other than Chinese sources? Do any U.S. suppliers produce neodymium iron boron magnets (excluding late stage finishing process such as magnetization, shaving or finishing)? Does DOD have a strategy to ensure a long-term supply of neodymium iron boron magnets?

Mr. LOWDEN. Presently, there is no domestic NdFeB magnet production capability. The NdFeB magnets presently contained in certain defense systems are procured from reliable foreign suppliers. The Department is aware of the issues regarding the rare earth elements. The Department plans to commission in FY2010 a study of rare earth resources, associated supply chains, and defense systems that utilize these materials. The results of the study will be used to help guide Department decisions and future actions.

Mr. LAMBORN. In your testimony, you cite DOD's review of 128 potential strategic materials. Can you provide that list to Congress?

Mr. LOWDEN. Please see table entitled, "Integrated Strategic Materials List."

Mr. LAMBORN. Of those materials, how many were in the "gray area" between strategic and critical? What were those materials?

Mr. LOWDEN. There are materials that meet the definition of strategic and have risks associated with their supply, but do not meet all of the criteria to be elevated to critical. These are the materials in the "gray area" between strategic and critical. These "at risk" materials must monitored, and when appropriate, action taken to ensure a reliable supply.

Initial risk assessment modeling by the Institute for Defense Analyses indicated the 13 commodities for which the NDS has temporarily suspended or limited sales are "at risk" and thus by the aforementioned definition would be in the "gray area." The risk analysis also indicated that 39 other materials should be monitored, studied and/or considered candidates for future mitigation strategies to ensure availability. These are the strategic materials included in the accompanying Integrated Strategic Materials List with recommendations such as "Monitor", "Hold/Study" or "Study/PB." These too may be considered to be in the "gray area." Materials with possible supply chain vulnerabilities are also included in Table 1 of Appendix C of the Reconfiguration of the National Defense Stockpile Report to Congress, entitled, "Supplementary Risk Assessments." The analysis of the risks associated with the materials presented in the tables is also included in Appendix C.

Mr. LAMBORN. What was your methodology for determining if a material is strategic, critical or neither?

Mr. LOWDEN. The Working Group employed the definitions for "strategic" and "critical" materials validated by the Strategic Materials Protection Board (SMPB) and published as the "*Analysis of National Security Issues Associated with Specialty Metals,*" in the Federal Register (Volume 74, Number 34, Monday, February 23, 2009, in Notices).

Mr. LAMBORN. How did you ascertain the original list of 128 materials?

Mr. LOWDEN. The Strategic and Critical Materials Working Group employed a lengthy, deliberative process to collect material information from a wide variety of sources to construct an initial list of strategic materials. Details regarding the methods and sources are included in Appendix B of the Reconfiguration of the National Defense Stockpile Report to Congress, entitled, "Key Materials for High-Priority Weapon Systems, and Assessing Risks to their Supply."

Mr. LAMBORN. Will DOD simply let a domestic industry fail before it crosses over into the "critical" category? For example, what are the plans for ensuring a long-term availability of strategic materials such as titanium, alnico magnets, samarium cobalt magnets or neodymium iron boron magnets—items that are found in critical defense applications, but that may have limited (or no) production in the United States?

Mr. LOWDEN. The Department of Defense has focused resources (as well as policies, processes, and structured procedures) that ensure, when indications of potential industrial concerns arise, they are identified, analyzed, and effectively integrated into key DOD budget, acquisition, and logistics processes. DOD Directive 5000.60, "Defense Industrial Capabilities Assessments," and the accompanying DOD Handbook 5000.60-H, "Assessing Defense Industrial Capabilities," establish the policies, procedures, and circumstances under which the Department will take action when there are problems with a supply chain or to preserve endangered industrial capabilities.

Integrated Strategic Materials List

Material	Identification Method	Recommendation
Elements		
Aluminum	SA	Study/PB
Antimony	SA	Study/PB
Beryllium	RR	Hold/Goal Material
Bismuth	SA	Study/PB
Boron	SA	Monitor
Cadmium	SA	Study
Cerium	MIL	Study
Chromium	RR	Hold/Study
Cobalt	RR	Hold/Study
Copper	SA	Study/PB
Europium	MIL	Study
Gadolinium	MIL	Study
Gallium	SA	Study/PB
Germanium	RR	Hold/Study
Gold	MIL	None
Hafnium	SA	Study
Indium	SA	Study/PB
Iridium	RR	Hold/Study
Lanthanum	MIL	Study
Lithium	MIL	Study
Lead	SA	Study/PB
Magnesium	MIL	None
Manganese (electrolytic)	SA	Study/PB
Mercury	SA	Hold/Study
Molybdenum	SA	Study/PB
Nickel	SA	Study/PB
Niobium (Columbium)	RR	Hold/Study
Osmium	MIL	None
Palladium	SA	Study/PB
Platinum	RR	Hold/Study

Rhenium	SA	Study/PB
Rhodium	SA	Study
Ruthenium	MIL	Study
Scandium	MIL	None
Selenium	MIL	Study
Silver	SA	Study/PB
Tellurium	SA	Study
Tantalum	RR	Hold/Study
Tin	RR	Hold/Study
Titanium (sponge)	SA	Study/PB
Tungsten	RR	Hold/Study
Vanadium	SA	Study
Yttrium	SA	Study/PB
Zinc	RR	Hold/Study
Zirconium	SA	Study
Minerals & Other Raw Materials		
Aluminum Oxide (fused)	SA	Study/PB
Bauxite Refractory	SA	Study/PB
Beryl Ore	SA	Study/PB
Chromite Ore	SA	Study/PB
Ferro Chromium	RR	Hold/Study
Ferro Manganese	RR	Hold/Study
Fluorspar (acid grade)	SA	Study/PB
Fluorspar (metal. grade)	SA	Monitor
Magnesium Oxide	MIL	None
Manganese Dioxide (battery grade, natural)	SA	Monitor
Manganese Dioxide (battery grade, synthetic)	SA	Study/PB
Manganese Ore (chemical – metal grade	SA	Monitor
Petroleum	MIL	None
Zirconium Ores and Concentrates	SA	Monitor
Metal Alloys		
Aluminum-Lithium Alloys	MIL	Study
Beryllium-Copper Alloy	MIL	None

Ferro-Magnetic Materials	MIL	None
Steel (specialty)	MIL	Study
Super Alloys		
A-286 (Fe-Ni-Cr)	MIL	None
AMS 5536 (Hastelloy X)	MIL	None
C 1023 (Ni-Cr-Co-Mo-Al)	MIL	None
Hastelloy S (Ni-Cr-Mo)	MIL	None
Hastelloy X (Ni-Cr-Fe)	MIL	None
Haynes 25 (Co-Cr-Ni)	MIL	None
Haynes 31 (Co-Cr-W)	MIL	None
Haynes 188 (Co-Cr-Ni)	MIL	None
Inconel 625 (Ni-Cr)	MIL	None
Inconel 713C (Ni-Cr)	MIL	None
Inconel 718 (Ni-Cr-Fe)	MIL	None
Incoloy 901 (Ni-Fe-Cr)	MIL	None
L-605 (Co-Cr-W-Ni)	MIL	None
Mar M 509 (Co-Cr-Ni)	MIL	None
PWA 607 (Mar M 509)	MIL	None
PWA 655 (Ni-Cr-Al-Mo)	MIL	None
PWA 1447 (Ni-Co-W-Cr)	MIL	None
PWA 1480 (Ni-Ta-Cr)	MIL	None
PWA 1484 (Ni-Co-Fe-Cr)	MIL	Study
Rene 41 (Ni-Cr-Co-Mo)	MIL	None
Rene 77 (Ni-Cr-Co-Al-Mo)	MIL	None
Rene 80 (Ni-Cr-Co-Ti)	MIL	None
Rene 88 (Ni-Co-Cr)	MIL	None
Rene 95 (Ni-Cr-Co)	MIL	None
Rene 125 (Ni-Co-Cr-W)	MIL	None
Rene 142 (Ni-Co-Cr-W)	MIL	None
Rene N4 (Ni-Cr-Co-W)	MIL	None
Rene N5 (Ni-Co-Cr-Al)	MIL	Study
Rene N6 (Ni-Co-Al-Cr)	MIL	None
Waspaloy (Ni-Cr-Co)	MIL	None
X 40 (Co-Cr-Ni-W)	MIL	None
X 750 (Ni-Cr)	MIL	None

Titanium Alloys		
Ti-6Al-2Sn-4Zr-2Mo	MIL	None
Ti-6Al-4V	MIL	None
Ti-8Al-1Mo-1V	MIL	None
Ti-17 (5Al-2Sn-2Zr-4Cr-4Mo)	MIL	None
Non-Metallic Materials		
Al Nitride/Copper Substrate	MIL	Study
Boron Filament	SA	Study
Boron Nitride	SA	Study/PB
Barium Titanate	MIL	None
Carbon Fiber	MIL	Study
Ceramics (unspecified)	MIL	Study
Kovar (Fe-Ni-Co alloy)	MIL	None
Glass fiber (E)	MIL	None
Glass fiber (S-2)	MIL	None
High-Purity, Intrinsic Silicon Boule	MIL	None
Kevlar (para-aramid fiber)	MIL	Study
Nomex (meta-aramid fiber)	MIL	Study
Polycarbonate Film	MIL	None
Polytetrafluoroethylene (Teflon)	MIL	None
Quartz	SA	Goal Material
Raw Sapphire	MIL	None
Rubber (natural)	SA	Study/PB
Silicon Carbide	SA	Study/PB
Silicon Wafers	MIL	None
VEL-THERM™ (thermally-conductive gasket)	MIL	None
Chemical Compounds		
Ammonium Perchlorate	MIL	None
Di-Beta-Naphthyl-P-Phenylene	MIL	None
Dibutyl Tin Dilaurate	MIL	None
Lithium-ion battery materials: cathode and electrolyte	MIL	None
Petroleum-Based Structural Epoxy	MIL	None
Miscellaneous		

Helium	MIL	Study
Deuterium	MIL	Study
Tritium	MIL	Study
Xenon	MIL	Study
Image Intensification Tubes	MIL	Study

SA – Systematically analyzed
RR – Recommended for reserve
MIL – Identified by DoD respondents (military services)
PB – Potential Buy or Other Risk Mitigation Initiative

Mr. LAMBORN. When considering DOD's long-term needs for strategic materials such as titanium, high performance magnets (i.e. SmCo, Alnico, NdFeB) and components containing rare earth materials, how does DOD Industrial Policy ensure availability of these items? Your testimony repeatedly states that the Office of Industrial Policy responds to what the services need. "What systems does the Office of Industrial Policy use to predict and inform the services of the materials they will need today and in the future (and vice versa)?" In other words, how do you and the services know what materials readiness and supply-chain availability shortfalls exist in their current and future weapon systems? How is DOD determining if a supply of strategic materials is available and how does it ensure it will always be available? For example studies by the National Academies refused to list tungsten as a critical material for the military, because there was no history of its supply interruption. Yet the US today is approaching 100% import reliance on China for tungsten. Is it likely that China would ship tungsten for armor plate to the US in the event of a confrontation or actual conflict with North Korea, or its energy supplier, Iran? America and Canada have ample deposits of tungsten, but only Canada is developing new resources of tungsten as well as trying to maintain production from large existing mines in the face of Chinese predatory pricing. How will DOD predict future material shortages? Do you have data and statistics, not only on material usage, but also on US industrial capacity? Isn't this lack of foresight a contributor to the recent MRAP steel shortage?

Mr. LOWDEN. This series of questions addresses the fundamental aspects of program development and planning, acquisition, and program management. The Defense Acquisition System exists to manage the Nation's investments in technologies, programs, and product support necessary to achieve the National Security Strategy and support the United States Armed Forces. The objective is to rapidly acquire quality products that satisfy user needs with measurable improvements to mission capability at a fair and reasonable price. The fundamental principles and procedures that the Department follows in achieving those objectives are described in DOD Directive 5000.01 and DOD Instruction 5000.02.

The Office of the Deputy Under Secretary of Defense (Industrial Policy) is a participant in the acquisition decision process whose primary role is to advise the Under Secretary of Defense for Acquisition, Technology & Logistics (AT&L) and the Secretary and Deputy Secretary of Defense on matters concerning defense industrial capabilities. Industrial Policy's mission is to make certain the industrial base on which the Department of Defense depends is reliable, cost-effective, and sufficient. More specifically, Industrial Policy is responsible for ensuring DOD policies, procedures, and actions both stimulate and support vigorous competition and innovation in the defense industrial base and that these policies help establish and sustain cost-effective industrial and technological capabilities that assure military readiness and superiority. Industrial Policy does so by monitoring the health and competitiveness of industry; by leveraging DOD decisions to promote innovation and competition; and by utilizing statutory processes.

However, it is important to note that the Department relies on its prime contractors (as an integral part of their program management responsibilities) to identify, manage, and solve program/supplier issues and risks. The DOD program office is responsible for maintaining frequent and open communications with the prime and key suppliers to keep appraised of any issues that could potentially affect the program's cost, schedule, or performance. The Military Services are encouraged to re-

solve identified industrial capability issues at the lowest level possible. However, there are cases when issues may impact more than a single program or Service. The Defense Acquisition Guidebook directs program offices to elevate an industrial capabilities matter via their Program Executive Officer to the Office of the Deputy Under Secretary of Defense (Industrial Policy) when an item produced by a single or sole source supplier meets one or more of the following criteria (even if the program office has ensured that its program requirements can and/or will be met):

- it is used by three or more programs
- it represents an obsolete, enabling, or emerging technology
- it requires 12 months or more to manufacture
- it has limited surge production capability

The Mine Resistant Ambush Protected (MRAP) is a good example of the process. There was a shortfall in thin gauge MIL–A grade steel armor production capacity necessary to support rapid production of the MRAP vehicle and other operationally-important ground vehicles requiring protective armor. The MRAP managers elicited the assistance of Industrial Policy in uncovering the details associated with the shortage and resolving the problem. The availability of steel, generally, was not a production constraint; but the availability of the specialized thin gauge, quenched and tempered steel (a "specialty metal") needed for DOD armor applications was a constraint. The Department was required to waive various statutory domestic source restrictions to meet operational requirements. The primary "beneficiary" of the waivers was U.S.-located Evraz-Oregon Steel. Although Oregon Steel quenches and tempers its steel in the United States, it does not have a blast furnace and buys its ingot from Mittal in Mexico. The addition of Oregon Steel increased relevant domestic production capacity by about 40 percent.

Tungsten is specifically mentioned in your inquiry. Tungsten is a metal that is used in a number of important defense systems, such as armor penetrating munitions, and in the manufacture of a variety of components, e.g., in carbide machine tools. A Department of Commerce analysis of tungsten is included as an appendix to the Reconfiguration of the National Defense Stockpile Report to Congress. According to the 2009 USGS Mineral Commodity Summaries, the U.S. net import reliance on imported tungsten has decreased since 2004, due in part to the fact that a mine in California made limited shipments of tungsten concentrates in 2008. Tungsten contained in scrap represented approximately 35% of the materials consumed that same year. Canada and the United States have noteworthy tungsten resources and a number of domestic tungsten manufacturers are vertically integrated allowing them to process ore and scrap to produce precursor material and/or powder. Tungsten is a strategic material for which there is some concern regarding supply; however, current indications do not warrant significant action.

Additional details regarding policies, procedures, and circumstances under which the Department will take action when there are problems with a supply chain or to preserve endangered industrial capabilities can be found in DOD Directive 5000.60, "Defense Industrial Capabilities Assessments," and the accompanying DOD Handbook 5000.60–H, "Assessing Defense Industrial Capabilities."

The Reconfiguration of the National Defense Stockpile Report to Congress presents a strategic materials management program that includes many of the processes and procedures addressed in your questions. It is a system for managing strategic materials that is dynamic and proactive so that as the Department's requirements change, and the list of materials essential to the strategic defense interests of the U.S. also changes, the methods by which supply chain risks are monitored, measured, and mitigated also change. The proposed strategic materials management program includes all of the basic components essential to managing risk—indentify, study, monitor, and act. Strategic materials will be identified. These materials will be studied and risks examined. The materials with supply chain vulnerabilities will be monitored. When problems arise, action will be taken. Strategic materials risk management is a crucial part of ensuring a reliable, cost-effective, and sufficient supply of the materials that are essential to national security and defense.

Mr. LAMBORN. You mentioned potential stockpiling of powders to make magnets. Are you aware that stockpiling of rare earth magnet powders would likely result in having the incorrect composition for the production of customized magnet alloys needed by the Department of Defense? A form very useful to meet customized DOD needs would be to stockpile rare earth un-alloyed metals of purity of 99.9% minimum purity and 99.5% minimum total rare earth purity.

Mr. LOWDEN. Magnet powder was used as an example of a form of a material, other than ore or ingot that could be stockpiled or managed utilizing different ap-

proaches in the future. The statement was made to support the concept of flexibility in the types of materials that could be included as part of a strategic materials management program. In some instances, it may be beneficial to acquire and manage materials in a form more easily processed into finished products.

Mr. LAMBORN. Are you aware that even without a conflict, rare earth metals supply are in jeopardy due to the production of Chinese rare earths potentially equaling domestic Chinese consumption within a few years according to expert sources, thereby squeezing out access of rare earths to the DOD not only for rare earth magnets but also for metal hydride batteries, and numerous other commercial magnet and non-magnet uses? What are the Department's plans to ensure availability of rare earth metals in the event of a supply disruption due to a conflict or simply being cut off due to China consuming the entire world's production of these elements?

Mr. LOWDEN. The Department is aware of the issues regarding the availability of rare earth elements as Chinese consumption increases. The Department plans to commission in FY2010 a study of rare earth resources, associated supply chains, and defense systems that utilize these materials. The results of the study will be used to help guide DOD decisions and future actions.

Part of the Department's plan to respond to the issue raised is the purpose of the National Defense Stockpile—to protect the nation against a dangerous and costly dependence upon foreign sources of supply of strategic and critical materials in time of national emergency. The NDS is a reserve of strategic and critical materials which are unavailable in the U.S. in sufficient quantities to meet anticipated national security emergency requirements. It is worth noting the U.S. and Canada do possess ample rare earth resources. However, regulations that result in the closure of existing mines and/or hinder the development of additional domestic resources would increase dependence upon foreign supplies of these materials.

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