S. HRG. 108–428

REAUTHORIZATION OF THE DEFENSE PRODUCTION ACT

HEARING

BEFORE THE

COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS UNITED STATES SENATE

ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

ON

THE RELEVANCE OF THE DEFENSE PRODUCTION ACT, AS WELL AS WHATEVER MODIFICATIONS MAY BE REQUIRED AS A PRELUDE TO ITS REAUTHORIZATION

JUNE 5, 2003

Printed for the use of the Committee on Banking, Housing, and Urban Affairs

U.S. GOVERNMENT PRINTING OFFICE

93–348 PDF WASHINGTON : 2004

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2250 Mail: Stop SSOP, Washington, DC 20402–0001

COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS

RICHARD C. SHELBY, Alabama, *Chairman*

ROBERT F. BENNETT, Utah
WAYNE ALLARD, Colorado
MICHAEL B. ENZI, Wyoming
CHUCK HAGEL, Nebraska
RICK SANTORUM, Pennsylvania
JIM BUNNING, Kentucky
MIKE CRAPO, Idaho
JOHN E. SUNUNU, New Hampshire
ELIZABETH DOLE, North Carolina
LINCOLN D. CHAFEE, Rhode Island

PAUL S. SARBANES, Maryland
CHRISTOPHER J. DODD, Connecticut
TIM JOHNSON, South Dakota
JACK REED, Rhode Island
CHARLES E. SCHUMER, New York
EVAN BAYH, Indiana
ZELL MILLER, Georgia
THOMAS R. CARPER, Delaware
DEBBIE STABENOW, Michigan
JON S. CORZINE, New Jersey

KATHLEEN L. CASEY, *Staff Director and Counsel*
STEVEN B. HARRIS, *Democratic Staff Director and Chief Counsel*
MARTIN J. GRUENBERG, *Democratic Senior Council*
JOSEPH R. KOLINSKI, *Chief Clerk and Computer Systems Administrator*
GEORGE E. WHITTLE, *Editor*

C O N T E N T S

THURSDAY, JUNE 5, 2003

	Page
Opening statement of Chairman Shelby	1
Opening statements, comments, or prepared statements of:	
Senator Allard	3
Prepared statement	28
Senator Corzine	13
Senator Sarbanes	17
Senator Bennett	20

WITNESSES

Ronald M. Sega, Director, Defense Research & Engineering, U.S. Department of Defense	3
Prepared statement	28
Response to written questions of:	
Senator Shelby	40
Senator Reed	41
Suzanne D. Patrick, Deputy Under Secretary for Industrial Policy, U.S. Department of Defense	5
Prepared statement	30
Response to oral questions of Senator Sarbanes	40
Response to written questions of Senator Reed	42
Karan K. Bhatia, Deputy Under Secretary for Industry and Security, U.S. Department of Commerce	7
Prepared statement	33
R. David Paulison, Director, Preparedness Division, Emergency Preparedness and Response Directorate, U.S. Department of Homeland Security	9
Prepared statement	36
Denise Swink, Acting Director, Office of Energy Assurance, U.S. Department of Energy	11
Prepared statement	38
Response to oral questions of:	
Senator Shelby	46
Senator Allard	48

ADDITIONAL MATERIAL SUPPLIED FOR THE RECORD

Prepared Statement of Senator Joseph I. Lieberman with attached "White Paper"	49

REAUTHORIZATION OF THE DEFENSE PRODUCTION ACT

THURSDAY, JUNE 5, 2003

U.S. SENATE,
COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS,
Washington, DC.

The Committee met at 10:01 a.m. in room SD–538 of the Dirksen Senate Office Building, Senator Richard C. Shelby (Chairman of the Committee) presiding.

OPENING STATEMENT OF CHAIRMAN RICHARD C. SHELBY

Chairman SHELBY. The hearing will come to order.

The purpose of this morning's hearing on the Defense Production Act is to examine its continued relevance, as well as whatever modifications may be required as a prelude to its reauthorization.

The Defense Production Act was originally passed in response to the outbreak of war on the Korean Peninsula. Following the end of World War II, the United States had undertaken a major reduction in the size of its armed forces. A combination of the end of war in Europe and the Pacific and the role that would be played in deterring the emerging threat from the Soviet Union by the introduction into the American arsenal of nuclear weapons seemed to dictate the need for far fewer conventional forces. With a much smaller military, industrial facilities that had been converted from commercial to military use to support the war effort reverted back to their original function. The North Korean attack on South Korea, however, jolted the American defense establishment back to reality with respect to conventional military requirements.

Increasing the size of the armed forces was one task. Equipping existing and emerging units for combat, however, was an entirely different matter. It was in that context that the Defense Production Act of 1950 was passed. The Department of Defense desperately needed American industry, that part of it that could support the new war effort, to adapt its production lines once again for military needs. The Defense Production Act was the statutory vehicle that provided the Government authorities it needed to respond to the sudden onset of war. Despite innumerable modifications over the decades, the Defense Production Act remains in large measure what it was originally intended to be: The means by which the U.S. Government ensures that commercial industry is responsive to the requirements of the military in the event of a crisis.

Just as the U.S. economy adapted to the end of the Second World War by ramping down that part of it involved in the production of military equipment, so the economy again responded to the end of

the cold war. The defense industrial base underwent a major contraction. According to the National Defense Industrial Association, some 2.5 million defense workers left that segment of the economy in the decade following the collapse of the Soviet Union, and half of the Nation's 60,000 defense companies—30,000 companies—left the defense business. Manufacturers of many major weapon systems are precariously dependent on decreasingly small numbers of suppliers for components. In addition, the mind-numbing number of defense mergers and acquisitions over the past 10 years has contributed to the evolution of an increasingly precarious defense industrial base. In short, the ability of the economy to respond rapidly to emerging national crises has become the source of increasing concern to those who follow industrial base issues.

It is in this context that we are here today examining the Defense Production Act. The DPA expires at the end of the current fiscal year, and it is the responsibility of the Committee to draft succeeding legislation. That is why this hearing was called, so that we can hear from some of the key Federal agencies involved in using the authorities provided by the Defense Production Act. Today's panel is composed of officials from the Departments of Defense, Commerce, Homeland Security, and Energy.

As the witnesses will illuminate, Defense Production Act authorities continue to be used on a regular basis today, more than 50 years after the Act's original passage into law. It has been used to expedite production and fielding of weapon systems that have played a vital role in the conduct of military operations. The Act's authority to prioritize was key to the rapid fielding of Predator UAV's armed with Hellfire missiles and the provision to the British military of satellite communications technology essential to the conduct of joint operations in Afghanistan. It was used to procure precision-guided munitions, supplies of which were being exhausted by their greater-than-ever rates of expenditure. Other agencies, as I have indicated, also utilized DPA authorities, as was seen in the Transportation Security Administration's use of them to acquire explosive detection devices for the Nation's airports.

The Administration's budget request for fiscal year 2004 includes as part of DPA reauthorization $200 million for radiation-hardened electronic components, a special request that hopefully will not have to be repeated for future activities, but the justification of which in this instance does, I believe, pass the sniff test. Finally, the Administration has requested that Section 707 of the Act be made part of a permanent law and no longer subject to periodic reauthorization. The Administration's justification for this request is the serious need to avoid a recurrence of what happened during Operation Desert Shield, when the Civil Reserve Air Fleet was activated and commercial aircraft were drafted into the war effort. Section 707 provides commercial businesses indemnification from lawsuits resulting from their having to respond to emergency taskings at the demand of the Federal Government.

While the Departments of Defense, Commerce, and Homeland Security are represented here today because of their roles in responding to crises, the Department of Energy is principally represented here today to discuss a slightly less comfortable issue: The possible abuse of DPA authorities by both the previous and current

Administrations to provide relief to the State of California during the period of rolling blackouts. This highly questionable use of DPA authorities represents precisely the type of Government action that must be very closely scrutinized. My predecessor here as Chairman of the Committee, Senator Gramm, held a hearing on this subject 2 years ago. As the DPA expires soon and consequently needs to be reauthorized, I felt this was a good opportunity to address the matter once more for the purpose of preparing legislation.

Testifying before the Committee today are Suzanne Patrick, Deputy Under Secretary of Defense for Industrial Policy; Ronald Sega, Director of the Defense Department's Office of Defense Research and Engineering; Karan Bhatia, Deputy Under Secretary of Commerce for Industry and Security; David Paulison, Director of the Department of Homeland Security's Emergency Preparedness and Response Directorate; and Denise Swink, Acting Director of Energy Assurance, Department of Energy. We look forward to all of your testimony.

First, I want to recognize Senator Allard.

COMMENTS OF SENATOR WAYNE ALLARD

Senator ALLARD. Mr. Chairman, I do not have any statements that I want to make at this time. I do have a statement I would like to submit for the record, and I ask unanimous consent that it be made part of the record.

Chairman SHELBY. Without objection, so ordered.

Senator ALLARD. I want to welcome my good friend, Dr. Sega, to the panel. I look forward to hearing your comments.

Thank you, Mr. Chairman.

Chairman SHELBY. Thank you, Senator Allard.

All of your written testimony will be made part of the hearing record in its entirety, and if you would briefly sum up your pertinent, most important remarks.

We will start with you, Dr. Sega.

STATEMENT OF RONALD M. SEGA
DIRECTOR, DEFENSE RESEARCH & ENGINEERING
U.S. DEPARTMENT OF DEFENSE

Mr. SEGA. Good morning, Mr. Chairman and Members of the Committee. I appreciate the opportunity to share with you the Department of Defense views regarding the Defense Production Act and the role it plays in helping to obtain goods and services needed to promote the national defense. Although enacted originally in 1950, the Act provides statutory authorities still relevant and necessary for the Nation's defense in the 21st Century.

The DPA is providing the Department with the tools required to maintain a strong response base necessary for our armed forces. I want to express the Department's support for reauthorizing the Defense Production Act. A key component of DPA is Title III, which will be the focus of my testimony. The Deputy Under Secretary of Defense for Industrial Policy, Ms. Suzanne Patrick, will follow with a discussion of Title I and briefly touch on some of the key components of Title VII.

Title III provides the President unique authorities that are being used to establish, expand, and maintain essential domestic industrial capacity needed to field advanced systems for today and the future. The primary objective of the Title III program is to work with U.S. industry to establish viable production capabilities for items essential to our national security. The Title III program is also being used to transition emerging technologies.

A success story is a good way to highlight the benefits of the program. Gallium arsenide is a semiconducting material used in the fabrication of advanced electronic devices. At the outset of the gallium arsenide Title III project, long-term viability of the U.S. gallium arsenide wafer supplier base was in doubt. Foreign firms dominated the industry with about 75 percent of the world's market share.

With the help of Title III, the U.S. producers made a dramatic turnabout. By the year 2000, these contractors accounted for 65 percent of wafer sales worldwide. Their combined sales of gallium arsenide wafers grew by near 400 percent. In addition, the wafer prices dropped by approximately 35 percent. This reduction in wafer prices and improvement in wafer quality resulted in significant reductions in defense costs for critical electronics.

DOD is initiating two new projects this year. One of these projects will be establishing production capacity for Yttrium Barium Cooper Oxide superconductor wire.

Projects initiated in fiscal year 2002 include a project for radiation hardened microelectronics, which you mentioned. This project illustrates the key role Title III plays in providing our armed forces with the technologies they need to be successful on the battlefield. We were in danger of losing our last remaining suppliers of these critical components needed for our strategic missile and space systems. Because of the small number of components that the Department buys and limited commercial demand, our current suppliers were unable to generate sufficient revenues to purchase the production equipment needed to produce radiation hardened microelectronics at the feature size needed to meet future defense requirements. Title III is helping these companies with equipment purchases and modernization to remain viable suppliers, capable of supporting future defense requirements. Without Title III, it is likely we would have lost this critical production capability.

Most provisions of the Defense Production Act are not permanent law and must be renewed periodically by Congress, as you pointed out. The Department supports reauthorization of the Defense Production Act until September 30, 2008. In addition, we are requesting an increase in the statutory authority limit contained in Section 303 to $200 million to correct the industrial resource shortfall for the radiation-hardened electronics project. The DPA requires the Department to obtain specific authorization for any Title III project that exceeds $50 million. The expected cost of the radiation hardened electronic project is $167 million. However, we are asking for authority up to $200 million in the event of unexpected cost increases for the project.

In conclusion, the DOD needs the Defense Production Act. It contains authorities that exist nowhere else. Current world events make these authorities more important than ever. DPA is a proven

mechanism. Its array of authorities have helped us meet the challenges of the last 50 years. By judiciously applying its authorities to the challenges facing us today, the DPA will see us to a more secure future. I hope that I have conveyed to you the significant role the Defense Production Act plays in ensuring our Nation's defense. The Department fully supports the bill before the Committee to reauthorize the DPA.

Thank you very much for the opportunity to discuss the Defense Production Act.

Chairman SHELBY. Thank you, Dr. Sega.

Ms. Patrick.

STATEMENT OF SUZANNE D. PATRICK
DEPUTY UNDER SECRETARY FOR INDUSTRIAL POLICY
U.S. DEPARTMENT OF DEFENSE

Ms. PATRICK. Good morning, Mr. Chairman, Senator Allard, and Members of the Committee, their staff, and other people in the audience. I really appreciate the opportunity to share with you the DOD views regarding the Defense Production Act.

As Dr. Sega indicated, this Act provides statutory authorities that are vital for DOD, both in time of contingency or conflict, as well as during peace. It helps DOD obtain the goods and services we need to promote national defense.

With your permission, I will be summarizing the testimony I have submitted for the record. Dr. Sega talked about Title III. My testimony today focuses on Title I of the Defense Production Act, and I want to briefly mention Title VII of the Act, which is also very important to the Department.

As you know, the Defense Production Act Titles II, IV, V, and VI have been repealed. I particularly want to describe to you today why Title I authority is important and how we are using it today.

Title I, which addresses priorities and allocations, provides the President the authority to require preferential performance on contracts and orders, as necessary or appropriate to promote the national defense. These authorities are important in peacetime and vital in the event of conflict. These authorities are implemented through the Defense Priorities and Allocations System and applied via contract clauses. The clauses are like insurance. They are present in nearly all defense system contracts, subcontracts, and orders, but actually executed only when absolutely necessary.

During peacetime, Title I authorities are important in setting priorities among defense programs that are competing for scarce resources and industrial production of parts and subassemblies. Delayed industrial supplies increase costs of weapon systems and affect our readiness. DPAS serves as an important tool to prioritize and accelerate deliveries and minimize cost and schedule delays for the Department's orders.

During times of conflict, DPAS is vital, indeed, indispensable. DPAS gives the Department of Defense the necessary power and the flexibility to quicken deliveries in order to address critical warfighter needs effectively and expeditiously. The role of DPAS to increase interoperability and assist allies is also very important.

I would like to mention three specific cases that illustrate the absolutely necessary power that DPAS provides the Department, and

Chairman Shelby has actually mentioned some of these in his opening remarks.

Predator UAV's armed with Hellfire missiles were used for the first time in Afghanistan. They included an upgraded sensor package, the Multi-Spectral Targeting System. The contractor's original delivery date for these systems was March 2003, just a couple months ago. Using DPAS, we jumped this order to the head of the production line, and the contractor was able to deliver three systems in December 2001, 18 months earlier than originally promised. Since that time, we have further used DPAS to accelerate 40 additional Multi-Spectral Targeting Systems. We are all aware of the dramatic impact that unmanned Predators had in waging war in Afghanistan, and most recently in Iraq.

During Operations Enduring Freedom and Iraqi Freedom, a new, lighter kind of body armor proved remarkably effective in minimizing fatal battlefield injuries. That latest generation Army and Marine body armor is comprised of protective vests with inserts made of an extremely tough fiber—Spectra—which is bonded to a ceramic plate. We used DPAS authority to direct the Spectra manufacturer's production to the highest priority Army and Marine requirements in order to maximize small arms protection for the warfighters.

Let me now give you an example for our allies. For Operation Iraqi Freedom, the U.K. MOD needed Precision Lightweight GPS Receivers. The U.K. requirements were critical to the warfighting effort. We used DPAS to give the U.K. order an industrial priority rating and it was moved ahead of some lesser priority U.S. orders that were not needed for deployed forces or for deploying forces. The U.K. received the equipment in a timely manner to support their forces and our forces in theater.

I would like to conclude my remarks on Title I of the DPA by noting that our warfighters are the real DPAS beneficiaries. Limiting our authority to apply these provisions has the potential to put their lives at risk.

Turning now to Title VII, I want to briefly express support for these authorities, also very important for the Department. Title VII contains miscellaneous provisions, including enforcement mechanisms, which help protect the Nation's security. For example, Section 707 provides that, "No person shall be held liable for damages or penalties for any act resulting from compliance with rules, regulations, or orders issued under the Defense Production Act." This provision is necessary to protect suppliers from breach of contract claims when commercial contracts are displaced in the interest of national security. This provision should be permanently authorized in order to protect contractors during periods when the Defense Production Act has lapsed, as has happened temporarily.

Section 721 represents another example of important Title VII authorities. Section 721 allows the President to suspend or prohibit a foreign acquisition of a U.S. firm when that transaction would represent a credible threat to the national security of the United States and imposes remedies to eliminate that threat that are not available under other statutes. This authority is increasingly important in today's globalized, industrialized environment.

In closing, I would like to reaffirm the DPA authorities are critical as a tool in the Department of Defense's arsenal. Time and again, particularly during times of conflict, we use DPA authorities to promote our Nation's security. Given the challenges in the current uncertain environment, we urge you to remove the uncertainty associated with the short duration of these authorizations and reauthorize the Act through September 30, 2008. It would be very difficult for the Department of Defense to meet its national security responsibilities without these tools.

Thank you very much.

Chairman SHELBY. Mr. Bhatia.

STATEMENT OF KARAN K. BHATIA
DEPUTY UNDER SECRETARY FOR INDUSTRY AND SECURITY
U.S. DEPARTMENT OF COMMERCE

Mr. BHATIA. Thank you, Mr. Chairman, and other Members of the Committee. I appreciate the opportunity to testify before you today on the reauthorization of the Defense Production Act.

The Commerce Department fully supports extension of the DPA. We do so because in our experience the DPA has been a critically important tool in enabling Government to work effectively with industry to meet contemporary challenges to our security. My written statement, supplied for the record, discusses in detail the various ways in which the Commerce Department is involved in the exercise of DPA authorities and provides a number of relevant examples. In the interest of brevity, I won't duplicate that testimony here. But I would like to briefly identify several authorities under the Act that facilitate particularly key Commerce Department activities.

First, under Title I of the DPA, the Department administers the Defense Priorities and Allocations System, which Ms. Patrick just discussed as well. DPAS seeks to ensure the timely availability of products, materials, and services that are needed to meet national defense and emergency preparedness requirements with minimal interference to the conduct of normal business activity. It does this by creating a system of priority ratings that can be attached to procurement contracts by agencies to which Commerce has delegated rating authority, such as the Department of Defense. The DPAS also provides an operating structure to support a timely and comprehensive response by U.S. industry in the event of a national emergency.

In addition to the DPAS, the DPA also provides authority to the Commerce Department to collect data, perform analysis, and prepare reports on critical defense industrial base issues, and specifically it requires the submission to Congress of annual reports analyzing offsets in defense trade. It is also the source of authority for the reports that Commerce prepares each year, commonly at the request of Congress or the armed forces, analyzing various sectors of the defense industrial base.

Let me pause in this context to note the Commerce Department for a minor but we believe important amendment to the DPA that would clarify that the President's investigative authorities under the DPA encompass the authority to obtain information necessary

to produce such industry studies. The current Section 705 of the DPA provides the Commerce Department investigative authority regarding the defense industrial base, and we have used this authority in the performance of our industrial base assessments. And while we are confident that this is consistent with Congress' intent, we think it would be helpful if that intent were made completely explicit in the language of Section 705, and to that end, we support a slight amendment that would make clear that the investigative authority "includes the authority to obtain information in order to perform industry studies assessing the capabilities of the U.S. industrial base to support the national defense." Such an amendment has already been approved by the House Committee on Financial Services.

Finally, the DPA authorizes review of the national security implications of foreign acquisitions of U.S. companies and, if necessary, the prohibition of acquisitions where there is credible evidence that the foreign interest acquiring the U.S. company might take action that threatens to impair U.S. national security. The Commerce Department is one of the Federal agencies that participates in the analysis of such a transaction.

When this Committee last convened at a hearing to consider reauthorization of the DPA almost 2 years ago, none of us could have predicted the security challenges that the United States would soon encounter at home and abroad, nor the important role that DPA authorities would play in meeting those challenges. But they have played precisely that role. Pursuant to DPA authorities, the DPAS has worked to secure delivery of a number of items ranging from guidance system components for "smart bomb" munitions to search and rescue radios for both U.S. and allied forces.

Here at home, the DPA has helped facilitate a number of post-September 11 initiatives to secure the homeland. DPAS support has been provided to the FBI to upgrade its communications and data-processing capability, to the Transportation Security Administration, as Senator Shelby mentioned, to achieve timely delivery of explosive detection systems equipment, and we are currently working with the Department of Homeland Security regarding possible DPAS support for the Customs Service's Automated Commercial Environment Port Security System.

Finally, DPAS authority has facilitated the completion of a number of in-depth studies of the defense industry, including most recently a comprehensive analysis of the impact of offsets on defense trade over a 6-year period, and we understand that report has been well received by both Congress and industry.

In short, thanks to this Committee's work in reauthorizing the DPA 2 years ago, we have had in place vitally important statutory authority enabling the Federal Government to meet the new and diverse challenges to our security. As it has over the past 50 years, this statute has again demonstrated its utility and value. We strongly support its reauthorization.

Chairman SHELBY. Mr. Paulison.

STATEMENT OF R. DAVID PAULISON
DIRECTOR, PREPAREDNESS DIVISION
EMERGENCY PREPAREDNESS AND RESPONSE DIRECTORATE
U.S. DEPARTMENT OF HOMELAND SECURITY

Mr. PAULISON. Thank you, Mr. Chairman and Members of the Committee. On behalf of Secretary Ridge, I appreciate the opportunity to appear before you this morning to support the 5-year reauthorization of the nonpermanent provisions of the Defense Production Act.

The DPA is the President's primary authority to ensure timely availability of industrial resources for both military and civil emergency preparedness and response. Expiration of these provisions would severely undermine the Nation's ability to prevent, as well as respond to disasters that are truly catastrophic—whether natural or manmade.

The Department of Homeland Security combines many Government functions that focus on protecting our Nation's borders and airports, among other activities, and ensuring that we are prepared for and able to respond to terrorist attacks and natural disasters. The Defense Production Act authorities are critical to the Department's strategic objectives to prevent terrorist attacks within the United States, to reduce America's vulnerability to terrorism, minimize the damage, and to hasten the recovery from attacks that may occur.

Since September 11, 2001, we have seen the effectiveness of the Defense Production Act in reducing the Nation's vulnerability to terrorism. Specifically, the Defense Priorities and Allocations System authorized under Title I of the DPA, as you pointed out earlier, Mr. Chairman, was used by the Transportation Security Administration to expedite the production of explosive detection and communication systems within our major airports. Without the use of these priority orders, the manufacturers could not have delivered these systems in a timely fashion. In addition, we expect to request assignment of a DPA priority rating from the Department of Commerce to support the Bureau of Customs and Border Protection within our Department to obtain equipment that will enable us to track containerized shipping arriving at our borders.

The Defense Production Act can also be used for preparedness, response, and recovery activities in catastrophic disasters such as an earthquake, a hurricane, or an incident involving a weapon of mass destruction. This use is being integrated into planning for such catastrophic occurrences now.

DHS understands the need to have a Priorities and Allocations System ready to ensure the timely availability of resources to meet our civil emergency requirements. Such a priorities and allocations system will enable Federal, State, and local governments to acquire items needed urgently to meet the needs of affected populations when such items are not readily available in the marketplace. Without this system, our response and recovery operations could be severely hindered.

Other DPA authorities are important to the DHS mission. These authorities include the use of: Financial incentives, subject to Presidential designation, to establish industrial capacity for products and services, such as vaccines to protect against biological agents,

under Title III; industrial agreements to enhance preparedness and response capabilities—for example, critical infrastructure protection, under Section 708; and also an executive reserve to provide expertise from the private sector during an emergency, under Section 710.

Within the new Department, DPA authorities reside with the DHS Under Secretary for Emergency Preparedness and Response. DHS is preparing departmental guidance on the use of these DPA authorities. Specifically, DHS is implementing its DPA responsibilities by: Serving as an advisor to the National Security Council on DPA authorities and national security resource preparedness issues and reporting on activities under Executive Order 12919; providing central interagency coordination of the plans and programs under the authorities of Executive Order 12919; developing guidance and procedures under the DPA for approval by the national Security Council; resolving issues on resource priorities and allocations; making determinations on use of priorities and allocations for essential civilian needs supporting the national defense; and coordinating national Defense Executive Reserve program activities of departments and agencies in establishing the National Defense Executive Reserve units and providing guidance for recruitment, training, and activation.

The Department of Homeland Security National Defense Executive Reserve program is being evaluated in terms of what private sector expertise can be mobilized when needed to respond to today's threats. The national Defense Executive Reserve units are valuable assets to several Federal departments and agencies, and the reauthorization of the DPA is required to continue this program.

The Department of Homeland Security also recognizes the importance of Section 708 of the Defense Production Act that provides authority for the creation of voluntary industry agreements to support preparedness for national defense and civil emergencies. This authority allows industry and the Federal Government to work together to solve problems that inhibit the availability of resources in an emergency. The Homeland Security Act authorizes the use of this provision for critical infrastructure protection planning and information sharing. Section 708 provides narrow antitrust and limited liability protections for infrastructure sectors and industry that are asked to prepare preparedness plans. The Department of Homeland Security will be reviewing the guidelines of this program and determining if they need to be revised or streamlined to meet the current environment.

We will work with the National Security Council, the Homeland Security Council, and appropriate Federal departments and agencies to ensure that the Department of Homeland Security issues proper guidance and procedures for the implementation of these DPA authorities. We view the DHS responsibilities under the DPA seriously, and we recognize the potential of the Act to support the efforts of other departments and agencies to prevent, prepare for, respond to, and recover from potential terrorist attacks and other emergencies.

In summary, the Department of Homeland Security is committed to fulfilling its responsibilities under the DPA and recognizes the

potential to significantly enhance the Nation's ability to respond to a homeland security threat.

Thank you for the opportunity to appear today, and I will be pleased to answer any questions you might have.

Chairman SHELBY. Thank you, Mr. Paulison.

Ms. Swink.

STATEMENT OF DENISE SWINK
ACTING DIRECTOR, OFFICE OF ENERGY ASSURANCE
U.S. DEPARTMENT OF ENERGY

Ms. SWINK. Good morning, Mr. Chairman and Members. I am pleased to appear before the Committee in response to its request for testimony by the Department on the reauthorization of the Defense Production Act. The Committee's invitation letter requested the Department to address, in particular, the role of the Department of Energy in responding to crises in which Defense Production Act authorities are required.

The DOE Office of Energy Assurance is responsible for protecting critical infrastructures and key assets in the energy sector. Our office leads the effort to ensure a secure and reliable flow of energy to America's homes, businesses, industries, and critical infrastructure. In carrying out our mission, we work closely with the Department of Homeland Security and in partnership with industry and State and local governments. The Department's energy assurance program is conducted in direct support of the President's National Strategy for Homeland Security and the President's National Energy Policy.

A comprehensive discussion of the authorities contained in the DPA and of how they might be used in responding to energy emergency situations is contained in a 1982 Department of Justice memorandum of law for the President which was submitted to Congress in compliance with the Energy Emergency Preparedness Act of 1982. The memorandum's discussion of the DPA remains valid today. As the Justice Department's memorandum makes clear, whether the Defense Production Act authorities placed in the President might be useful in responding to energy crises would be highly fact-dependent. However, we do believe that a number of the Act's provisions could be potentially useful in addressing energy needs, and I will address their past use by the Department and ways in which the authorities could be useful in the future.

Title I of the Defense Production Act contains two separate priority contracting provisions authorizing the President to require performance on a priority basis of contracts or orders in certain circumstances. The Secretary of Energy has been delegated authority by the President to exercise the Title I priority contracting authorities, in Executive Order Numbers 11790 and 12919. The first provision, Section 101(a) of Title I, deals with priority contracting to "promote the national defense." Under Section 101(a), the Secretary may require performance on a priority basis of contracts for energy supplies that the Secretary deems "necessary or appropriate to promote the national defense." This authority could be used, for example, to require the acceptance of and priority performance under contracts relating to production, deliver, or refining of petroleum products or other forms of energy, including natural gas, to

meet the energy needs of the Department of Defense and its contractors. It also could be used to facilitate transportation of energy supplies to meet national defense needs, for example, by requiring pipelines, marine terminals, and other facilities to perform energy transport contracts necessary to meet the priority needs of the Department of Defense and its contractors.

In determining what the national defense requires, it is clear the Secretary may consider the potential impact of shortages of energy supplies. In the Energy Security Act of 1980, Congress specifically designated energy as a "strategic and critical material" within the meaning of the Defense Production Act and also added language to the DPA Declaration of Policy that establishes a link between assuring the availability of energy supplies and maintaining defense preparedness. The Defense Production Act's Declaration of Policy states: "[I]n order to ensure national defense preparedness, which is essential to national security, it is necessary and appropriate to assure the availability of domestic energy supplies for national defense needs."

The second priority contracting provision in Title I of the Defense Production Act is 101(c), linked to facilitating projects that maximize domestic energy supplies rather than to meeting the needs of the national defense. Section 101(c) authorizes the Department of Energy to require priority performance of contracts for goods and services for projects which would maximize domestic energy supplies, if the Secretaries of Energy and Commerce make certain findings, including that the goods or services are scarce and critical and essential to maximizing domestic energy supplies. If world circumstances were such that the President directed a drawdown of the Strategic Petroleum Reserve, and coincident with that direction from the President there was a significant breakdown in the Strategic Petroleum Reserve facilities, that would be the type of circumstance where, if it were urgent to replace scarce and backlogged specialized pumps and other apparatus, the Department could rely upon Section 101(c) to bring the facility back online in an operational sense as promptly as possible. Absent the Defense Production Act, it would be exceedingly difficult to persuade vendors to put our order at the head of the line for fear of third-party contract liability that they otherwise might expose themselves to, even if they were otherwise willing to cooperate with the Department in the interests of the country.

Section 101(c) also might be used alone, or in tandem with Section 101(a), to assist in restoring critical energy infrastructures following widespread terrorist attacks or a natural disaster, for example, to assist electric utilities, oil companies, or other energy companies in obtaining equipment needed to repair damaged facilities, or to provide fuel oil or natural gas to electric utilities to ensure continued supply of electricity.

Section 101(c) was used in the late 1970's and again in the 1980's and early 1990's to facilitate petroleum production development of the Alaskan North Slope. The Department also relied on Section 101(c), as well as 101(a), as a complement to the emergency provisions of the Natural Gas Policy Act, in its January 2001 orders, directed by former President Clinton, to the Pacific Gas and Electric Company and a number of natural gas suppliers to ensure the

continued supply of natural gas necessary for continued availability of electric service in the central and northern regions of California.

A third Defense Production Act provision which has been used in the past to address energy supply problems is Section 708, which, as Mr. Paulison mentioned, provides a limited antitrust defense and breach of contract protection for the industry participating in voluntary agreements and plans of action "to help provide for the defense of the United States through the development of preparedness programs and the expansion of productive capacity and supply beyond levels needed to meet essential civilian demand in the United States." This provision has its roots in our World War II experience and was an important vehicles for gaining the help of the oil industry during and after the Korean War. For example, in 1951–52, a voluntary agreement under Section 708 was used to protect a group of oil companies which agreed to provide heating oil to redress a winter shortfall in New England. Later, Section 708 was used for the first voluntary agreement of U.S. oil companies which had agreed to participate in the International Energy Agency's standby emergency preparedness programs. Subsequently, in 1975, Congress enacted very similar voluntary agreement authority in Section 251 of the Energy Policy and Conservation Act.

In the future, in the event of widespread damage to energy production or delivery systems caused by acts of terrorism or natural disasters, the DPA's Section 708 voluntary agreement authority might be used in establishing a voluntary agreement of energy service companies to coordinate the planning of the restoration of the damaged facilities.

Finally, to facilitate communications among stakeholders and to broaden our partnerships with the private sector, we have established Information Sharing and Analysis Centers among energy industry stakeholders to improve infrastructure security. We expect to confer with the ISAC's on all of the authorities available to the President and to the Department that might be useful in protecting and, if necessary, restoring critical energy infrastructures.

The Secretary believes that the authorities the DPA confers on the President are important tools that should remain available to the President unimpaired to use in appropriate circumstances. Accordingly, the Department joins the rest of the Administration in supporting a 5-year extension of the Defense Production Act.

I will be pleased to respond to any questions.

Chairman SHELBY. Thank you.

Senator Corzine, do you have any comments? I know you have to go somewhere.

COMMENTS OF SENATOR JON S. CORZINE

Senator CORZINE. Thank you very much, Mr. Chairman. I do have a question.

Chairman SHELBY. Go ahead.

Senator CORZINE. I appreciate it very much. I will be brief.

First of all, I think it is vital what you are doing, Mr. Chairman.

Chairman SHELBY. Thank you.

Senator CORZINE. I congratulate you for bringing this forward, and I thank the witnesses for their testimony.

I have a question that really relates to the financial services industry and its critical nature with regard to our Nation's infrastructure, and particularly some of the large dollar payments that are associated with the Federal Reserve System and other financial intermediaries that are connected to that. I know there is a high interdependence on that. Some of it actually is an international interdependence as well. Reliable and resilient telecommunications systems make that system work, and we saw some issues after September 11 where maybe some of those networks were not everything that one would have hoped they would be in their backup. A lot of circuit diversity might not have been in place.

I really want to know whether in a large-scale attack or other situations whether there is thought of using the DPA in those circumstances for building up some of that diversity, improving the reliability, whether that has been looked at in the Department of Homeland Security, potentially in Commerce. And I guess the basic question is: Do you think that this is the kind of application that the Act might be readily for—to encourage the private sector to participate more fully in developing that duplication, that redundancy that we might want in the system? Is that an appropriate application of the Act? I guess I will leave it there.

Mr. PAULISON. Yes, sir, I think it would be in the case of some type of catastrophic incident. We feel like the DPA does address our critical infrastructures, and that is part of our critical infrastructure. We are currently under HSPD–5 going through the DPA to make sure that it does address all of our critical infrastructures. Right now we think it does. We want to make sure, and we will have that report ready probably right around the first week in September, but definitely if part of our communications critical infrastructure was destroyed that we could use this to rebuild that.

Senator CORZINE. How about in the forward planning of building in that redundancy? It may be for competitive reasons, in the same way that we heard other examples that there wouldn't be the incentive for the private sector to go into a situation where more monopolistic or at least—and I only mean that in the narrow geographical context, that there wouldn't be a reason for that diversity to develop. Could the Act be used without an incident?

Mr. PAULISON. I would have to do some significant research. If I am answering your question correctly, with our cooperative agreements that we do with the Federal Government and some companies, I think the answer is yes. I think that by having companies go together and given the limited protection, we could use some type of redundancy between different—Company A and Company B providing the same types of communications systems, the answer is yes. But I can give you a more definitive answer after some research. I believe the answer is, yes, we can do that.

Senator CORZINE. I would appreciate very much a response in writing.

Mr. PAULISON. Absolutely.

Senator CORZINE. I would love to work with you and make sure those kinds of incentives are there.

Mr. PAULISON. I realize that is an important issue.

Senator CORZINE. And, really, it probably gets beyond the financial services arena in a number of other critical infrastructure

nodes in the economy where the telecommunications industry tends to have one network, because there wouldn't be a buyer otherwise, and there may be a real need to look at this.

Mr. PAULISON. Yes, and I think part of the answer to your question also is our interoperability issue with our radio communications, especially with our first responders. We are putting monies out in the very near future—in fact, we are gathering proposals now from different States and different cities to evaluate those, and we have millions of dollars to put out there to do some prototype best practices, if you will, systems in different cities. I think that is the issue, the interoperability issue. And I agree with you, what we do not want is a nationwide communications system because that is very vulnerable. The system we have now where each city has its own communications system has its positives. There is no one point of attack. But also the negative is they cannot talk to each other. So that is one of the issues we are dealing—totally outside the DPA. So, I think there is more than one approach to resolving the issue you are talking about.

Senator CORZINE. Okay. I wonder if any of the other panelists have thought about this at all.

Mr. BHATIA. Well, to go back to the immediately preceding point, Senator—the question of whether there is the ability to use DPA authority proactively—there was a critical amendment to the DPA—I think it was in 1994, the Stafford Act—which took the phrase "to promote the national defense" and defined "national defense" to include "emergency preparedness." And if you trace through the definition a little bit, "emergency preparedness" includes activities that would occur—that you would undertake obviously after and during, but also before the act itself.

So while this is always a very fact-driven kind of thing—you have to look at the particular case—I think it would be fair to say that by virtue of that 1994 amendment, it is contemplated within DPA that you would be taking activities beforehand, or that the authorities would be available to be used for activities that might occur beforehand in preparation of a hazard or national disaster.

Senator CORZINE. We would very much like to work with you on the elements that relate to these payment systems, which I think are very critical to our work and our economy.

Thank you, Mr. Chairman.

Chairman SHELBY. Thank you, Senator Corzine.

Senator Allard.

Senator ALLARD. Thank you, Mr. Chairman.

I would like to inquire a bit about the investigative authority that the Department of Commerce was requesting. Could you elaborate a little more on that?

Mr. BHATIA. Sure. We produce studies, Senator, generally analyzing the health of specific sectors of the defense industrial base, often at the request of Congress. To give you just one example, in the fiscal year 2003 appropriations bill there was a specific request put into the report language asking the Commerce Department to produce a report analyzing the health and welfare of the textile and apparel industry and the implications of that health and welfare to our national defense and to the armed forces. That is just an example. We have done other similar studies on other things.

The investigations that we do to satisfy those requests have a number of components to them. We look at open source information. We would with trade associations and with members of industries. We work closely with the Defense Department and the armed forces.

But one of the things that we do is we issue surveys to industries that would be within that area—so, for instance, the textile and apparel industry, asking questions such as "what is your health and welfare," or things designed to get to that issue. And we do that under the investigative authorities of the DPA. The results of those surveys, the responses of the surveys have been very helpful to us in producing studies.

Senator ALLARD. And your investigation's purpose is to establish the criteria to determine whether you want to put these incentives toward the private sector?

Mr. BHATIA. It is not incentives particularly. This would just be to do an assessment, really just a study of what the health and welfare is, and thereby inform Members of Congress or the Defense Department itself as to whether there is a problem in the area.

Senator ALLARD. How do you look at, for example, exports of dual-use military equipment, that type of thing?

Mr. BHATIA. I happen to wear two hats. We both in the Commerce Department do DPA-related activities along the lines of what I described in my testimony. We also are the agency charged with administering our dual-use export control system. That is outside of the scope of the DPA. We do that——

Senator SARBANES. So, you are taking off one hat and putting on the other.

Mr. BHATIA. Exactly.

Chairman SHELBY. You do not have anything—but as far as this Act is concerned, dual-use is not a consideration or anything?

Mr. BHATIA. Again, we do look at dual-use export licenses under the Export Administration Act, but those activities are not germane to the DPA.

Senator ALLARD. Okay. Now, I think several of you were requesting a 5-year reauthorization in the testimony. Do you think that is adequate, or do you want more or less?

Mr. BHATIA. I know the other panelists may have something to say on this as well. Our view is that this is a good Act, and it provides useful authorities both for our national defense and for our armed forces, and it is also useful for industry to have the security the DPA provides and to know that those authorities are out there.

I think we would welcome a longer extension, but our sense is, just from looking at past history of extensions, that 5 years is probably what we could expect.

Senator ALLARD. I think we need to have adequate oversight on the legislative side also.

Mr. BHATIA. Understood completely.

Senator ALLARD. Are you receiving any complaints from your businesses about production requirements, whether they are unreasonable or unfair? What kind of complaints do you get from businesses? I would be interested in hearing each panelist's response.

Ms. PATRICK. What kind of production requirements were you alluding to?

Senator ALLARD. Well, do some businesses want to qualify for the program and others do not? Are there complaints in that regard? Or are there some that think that once they get into the program, maybe the requirements are too rigid and restrictive? I would like to get a feel of what concerns might be coming out of the private sector.

Ms. PATRICK. Yes, let me start with that. First of all, as I said in my testimony, the DPA is really a form of insurance that works to the benefit of the Department in terms of reprioritizing or reallocating under existing contracts. And so it is something that really is existing in the vast majority of the contracts that we have in the Department. I would say over 98 percent of them, in fact. And we really have not received any complaints, at least in my tenure, or, as I know from the historical memory of my staff, in terms of companies complaining about DPA authorities.

We, on the other hand, do work very hard with companies when we have specific requirements that we need to prioritize to make sure that we do not in some way unnecessarily or excessively jeopardize their commercial markets or their ability to serve their commercial clients. And so when we implement the authority, it is really subject to some very close negotiations with the companies affected.

One of the examples that I gave you on Spectra, for example, involving Honeywell, we worked very judiciously to make sure that our warfighters got what they needed, but we did not unduly put any strains on Honeywell's production lines for other materials. And so it is something that, as I said, has worked very collaboratively between the companies and the Department. But I am aware of no complaints with regard to the actual provision.

Senator ALLARD. Mr. Chairman, I see that my time has expired. Thank you.

Chairman SHELBY. Senator Sarbanes.

COMMENTS OF SENATOR PAUL S. SARBANES

Senator SARBANES. Thank you very much, Mr. Chairman.

I was not here at the outset when they made their opening statements, but I do want to make one observation before I move to questions.

Chairman SHELBY. You proceed. Yes, sir.

Senator SARBANES. First, Mr. Chairman, I want to commend you for holding today's hearing. The DPA is an important part of the responsibility of the Banking Committee, and its importance has been underscored by the witnesses at the table. It is not an issue that gets a lot of public attention, but it is a matter of seriousness, and I am pleased that you are focusing attention on it.

I am a little concerned by the transmission of the Administration's request to the Congress for the reauthorization of the DPA, the one that is up here now.

Chairman SHELBY. Yes, sir.

Senator SARBANES. We last reauthorized the DPA in 2001. In fact, we had held an oversight hearing ahead of the Administration's submission of authorization, which came from the Federal Emergency Management Agency and was transmitted to this Committee, the reauthorization request.

This year, the Administration's transmission to the Congress requesting a reauthorization came not from FEMA nor to the Committee, but came from the Defense Department as part of the request for the national defense authorization bill and went to the Vice President in his capacity as President of the Senate.

Now, I recognize, of course, that the Department of Defense has a central interest in the workings of the DPA, but the DPA heretofore—and I hope hereafter—is not under the jurisdiction of the Armed Services Committee, and under ordinary circumstances wouldn't be considered as part of the defense authorization bill.

I think this Committee has been attentive to its jurisdictional responsibilities for the DPA, and, Mr. Chairman, I know you asserted our Committee's role.

Chairman SHELBY. Absolutely. We are going to assert our jurisdiction.

Senator SARBANES. Absolutely. But I just wondered why it happened this way. Perhaps it is because there was the disruption created by the transfer of FEMA to the Department of Homeland Security, which I gather now has the lead responsibility for the administration of DPA. And I guess that is really the first question I want to ask.

Ms. PATRICK. Senator Sarbanes, let me take that question for the record as to why the process by which this particular provision came to you was different this time than it had been previously. I would rather not speculate on what the reasons might have been.

Senator SARBANES. Okay, but it was included in the national defense authorization bill, which, of course, is the big authorization bill handled by the Armed Services Committees.

Ms. PATRICK. Yes, sir, and I am sure it was not an intended slight.

Senator SARBANES. That is a complete departure from past precedent with respect to the DPA, and I was interested to know why that occurred.

Ms. PATRICK. We will provide that for the record, sir.

Senator SARBANES. All right. I would like to have that. Mr. Paulison, I noticed in your statement you said, "The DPA is the President's primary authority to ensure the timely availability of industrial resources for both military and civil emergency preparedness and response." This goes in part to the question that Senator Corzine put.

Does anyone have any doubts that the authorities of the DPA can be used for efforts to enhance the preparedness of U.S. critical infrastructure, such as the financial or telecommunications systems, to withstand disruption that might occur from terrorist attacks or, indeed, from other natural or manmade events? Is it your reading of the DPA that the authorities provided there are adequate for these purposes?

Mr. PAULISON. Yes, sir, that is our understanding. It can be either civil or military. The DOD uses it for military, and I think the other agencies here would use it for civil emergencies or disasters within the United States.

Senator SARBANES. What is the view of other members of the panel on this rather important question, I think?

Mr. BHATIA. Again, Senator, from the Commerce perspective, we asked our chief counsel's office to look at the issue. They believe that the 1994 amendment under the Stafford Act, which broadened the definition of "national defense" to include "emergency preparedness" is a broad term that encompasses many programs that could be used to protect critical infrastructure in a preventive, preparatory, responsive, or recuperative manner.

I would also point out that a number of the exercises of DPA power that I referenced in my testimony are fundamentally critical infrastructure protection-related activities—for instance, supporting the Transportation Security Administration in the acquisition of explosive detection equipment, and the FBI, for instance, with respect to telecommunication systems.

So, I think we see it as a statute by virtue of the amendments that were wisely adopted 10 years ago to be sufficiently flexible, but it is something that we will continue to be attentive to.

Ms. SWINK. Yes indeed, with respect to Energy, we are still referring to the 1982 Department of Justice memorandum, which makes clear that it might be useful to use the DPA authorities in responding to energy crises.

Senator SARBANES. Thank you.

Mr. Chairman, I see my time is up. I would like to just make one final point.

Mr. Paulison, you are now the Director of the Preparedness Division within the Emergency Preparedness and Response Directorate of the Department of Homeland Security; is that correct?

Mr. PAULISON. Yes, sir, that is correct.

Senator SARBANES. You used to be the Director of the Federal Emergency Management Agency; correct?

Mr. PAULISON. No, sir. I was the U.S. Fire Administrator, and still hold that title. The Director of the Federal Emergency Management Agency was Joe Allbaugh, and then Mike Brown.

Senator SARBANES. Well, if they were still around, would they now be the Director of the Preparedness Division; is that what happened?

Mr. PAULISON. Yes, sir. Mike Brown is now the new Under Secretary for——

Senator SARBANES. Okay. Now, do you think that our homeland security or any security has been enhanced in any marked way by now having a Preparedness Division within the Emergency Preparedness and Response Directorate of the Department of Homeland Security? Why don't we just continue with the Federal Emergency Management Agency? We all knew it, and I am not sure that we loved it, but we respected it, and it seemed to do its job—oh, you do not have to answer that question.

[Laughter.]

Chairman SHELBY. Well, I think there is more respect than love up here.

Mr. PAULISON. I will take that comment back to Secretary Ridge.

Senator SARBANES. All right. Thank you.

Thank you, Mr. Chairman.

Chairman SHELBY. Senator Bennett.

COMMENTS OF SENATOR ROBERT F. BENNETT

Senator BENNETT. Thank you, Mr. Chairman.

My questions are going to sound somewhat redundant because I am going in the same direction as Senator Corzine and Senator Sarbanes. But I have been trying for several years to get a firm statement out of the Administration with respect to DPA's role in critical infrastructure. I wrote to the President on October 31, 2001, following the attack on September 11, trying to get a clear answer, and to date, I have not felt that I have had one, so let me ask the direct question.

In the opinion of the Administration, may the President of the United States invoke the DPA to address critical infrastructure concerns such as critical infrastructure protection or critical infrastructure restoration—the kind of thing that Senator Corzine was responding to. Is there a "yes" or "no"?

Mr. PAULISON. Yes, sir, I need to answer that. I have just taken over the responsibilities of the DPA for Homeland Security, and I do have your letter, and I will offer a personal apology that you have not received an answer.

Senator BENNETT. I am not worried about that.

Mr. PAULISON. I understand. But the answer is yes, we do feel that the DPA authority gives us the ability to handle critical infrastructure, and we are still reviewing that and will make sure of that; but right now, the answer is yes.

Senator BENNETT. Good. Then, let me give you a hypothetical that will help focus the question from my point of view.

As you know, my almost obsession up here is cyber-terrorism, attacks through hackers, the computers going down, and so on. So let us assume that a few disgruntled employees of a major commercial bank exploit their positions to sabotage and take off-line the critical data networks of the entire financial sector, and they also prevent normal redundancy and backup measures from being implemented. We have had hearings on that very recently in this Committee.

So let us establish a worst case scenario where a major bank hacks into the network of this financial institution and not only shuts it down but also shuts down the redundancy. Okay. Now, Company "X" is the sole provider of the key hardware and software necessary to restore the critical data points, so the affected financial institutions all immediately call Company "X" and say, "Send us your widgets so we can fix this." All right. Company "X" is loaded with commercial and military orders, and they say, "We cannot supply your needs for another 6 months."

May the President invoke DPA and use DPA's contract priority provisions to override those previous contracts and say you can supply what is necessary to get the financial sector back up with the software and hardware that you have and delay your deliveries someplace else?

Mr. PAULISON. Although I hate hypothetical questions——

Senator BENNETT. We made it as pointed as we could.

Mr. PAULISON. Yes, sir. Based on what you have laid out, my understanding would be that yes, we could do that.

Senator BENNETT. Okay. You are answering them all properly.

If the President may use the DPA, do you believe it would be the Administration's policy to do so? In other words, will the President as a matter of policy give as much attention to critical infrastructure in the cyber world as he might, for example, in Ms. Swink's world of energy? I know you cannot forecast what the President would do, but what would you recommend to the President?

Mr. PAULISON. The answer is yes. How we function in today's society, our cyber world is extremely important in the protection of this country, and obviously, my advice would be yes, that we do that.

Senator BENNETT. Mr. Chairman, I have learned in business that when you have made the sale, get out of the room, so, I will not ask any more questions.

Thank you.

Mr. PAULISON. Thank you, Senator Bennett.

Chairman SHELBY. Senator Bennett, you are entitled to stay here, and we would welcome you to stay here.

Senator Allard, do you have any further observations or any questions?

Senator ALLARD. I do not, Mr. Chairman.

Chairman SHELBY. Thank you.

I have a question for the whole panel. The Defense Production Act was passed at a time and under circumstances that clearly indicated that it was intended to provide the means to respond to emergency contingencies, primarily armed conflict. It has been reauthorized and modified more times than one can count since its passage in 1950. Over the years, there has been a noticeable evolution in the declaratory policy from which the Act's authority should reasonably follow toward greater apparent concern about the peacetime industrial base required to ensure adequate levels of military readiness.

It can be inferred that the Defense Production Act has become more and more oriented toward questions of broader industrial policy than perhaps was originally intended. For example, the current Section 2062, Declaration of Policy, begins with the apparently obligatory finding—and I will quote:

> The vitality of the industrial and technological base of the United States is a foundation of national security that provides the industrial and technological capabilities employed to meet national defense requirements in peacetime and in time of national emergency.
>
> In addition, implementing Executive Orders over the years, especially Executive Orders 12742 in 1991, and 12919 in 1994, have explicitly articulated the importance of maintaining a robust defense industrial base.
>
> Executive Order 12919, for example, stated: "The U.S. must have an industrial and technology base capable of meeting national defense requirements and capable of contributing to the technological superiority of its defense equipment in peacetime and in times of national emergency. The domestic industrial and technological base is the foundation for national defense preparedness."

Can the panel comment on this issue? Executive Order 12919 was issued under the authority of the Defense Production Act. So much of DPA's authorities are intended to provide the President the means to respond to an emergency, especially the outbreak or imminent outbreak of armed conflict. Hence, the establishment of the Defense Priorities and Allocation System and the role of the Secretary of Commerce in administering it.

I know this is long and involved, but you are familiar with this.

In the view of the agencies represented here today, how should the DPA's authorities be drafted in order to provide the Federal Government the explicit authorities it apparently needs in order to better meet the demand set forth in its own Declaration of Policy Could you comment on the practical utility in terms of defense industrial base preservation of the Berry amendment?

Dr. Sega—I know that was long, but this is technical stuff that we are dealing with.

Mr. SEGA. Yes, it is technical. I will start, because I will only offer a piece of the answer, I think, and in the area of Title III, which is the area of my responsibilities, the need for us to prepare in peacetime for wartime is essential.

In the case of the radiation hardened electronics, we need to buy the equipment and design the devices, build the devices, and put them into our strategic missile systems.

Chairman SHELBY. Absolutely.

Mr. SEGA. So the need to provide the DPA authorities in this realm of bringing forward technologies that are relatively unique is important in the area that I have responsibility.

Now, I will pass it off and have that answer expanded as we go forward.

Chairman SHELBY. Ms. Patrick.

Ms. PATRICK. We certainly agree with the spirit of your question and some of the implications, but I think it is also very important to point out that we vouch for the vitality and the responsiveness and the productivity of our defense industrial base using a number of means available at our disposal.

The Title I DPAS provisions are particularly imperative in times of war or where the prioritization of contracts is not suitable for a given contingency during peacetime, and I would like to compliment Senator Bennett on his perfect example of how it is we would use the DPA authority even in the case where the model was not an element of the financial system but a key defense contractor, say, who by hacking had lost its critical designs or was no longer able to operate its machine tools. It is a ubiquitous problem throughout this state-of-the-art industrial base that we have in this country, so your example was perfect.

But it is also important to remember that one of the key sources of innovation and direction to the defense industrial base is the overall defense budget and the way we allocate that defense budget and the way we see to it that the defense budget expresses the needs and vision of the Department and most specifically the needs of the warfighter.

So there are a number of tools at our disposal for making sure we have a vibrant defense industrial base. DPAS in Title I is one of them. Title III, of course, is also very important, where we see that we have gaps or there is a capability that we are not getting otherwise—all very important to the future of the country.

Chairman SHELBY. Mr. Bhatia.

Mr. BHATIA. Mr. Chairman, your question touches on a lot of critical parts of the DPA. One that particularly resonated for me was the question of industrial policy and whether this is, in fact, a form of industrial policy.

Chairman SHELBY. There is a little difference between basic industrial policy that a lot of us are very nervous about and priorities for defense.

Mr. BHATIA. Right.

Chairman SHELBY. They are two different things, and I think you have to make that——

Mr. BHATIA. Absolutely, absolutely. We wear two hats—again, two hats—but play a number of roles in this. On the one hand, we are particularly attuned to the concerns of American industry and American business. We at the same stage play the role of administrator of the DPAS's regulations and the mediator between the national defense, armed forces, and industry where problems arise.

One thing I would point out—and I think this touches back on a question that Senator Allard raised—is how few instances of real problems we see coming up in this area. Last year, my understanding was that there were 300,000—or some number like that—priorities put on contracts. We had requests for mediation assistance in 20, and those were all, I believe, resolved amicably between the parties.

Although it is a statute with very strong powers in situations of national emergency—in terms of its day-to-day administration, we see it as being something that is not market-distorting and not industrial policy being put into action.

Chairman SHELBY. Mr. Paulison.

Mr. PAULISON. I think Ms. Patrick laid it out very clearly, and I really have nothing else to add. She did a great job.

Chairman SHELBY. Ms. Swink, do you have any comment on that, other than what has been said?

Ms. SWINK. I have one comment, and that is the whole situation of cascading effects and interrelationships of the critical infrastructures are absolutely key for sustaining that robust industrial base. So, I think that that is an important aspect of the DPA, that when we do have emergencies that appear only in one critical infrastructure, the reality is that you could do major harm to the industrial base without quick response.

Chairman SHELBY. I think so, too.

I have another question for you, Ms. Swink. Two American Presidents have found it appropriate to utilize Defense Production Act authorities to provide relief to the State of California during its self-imposed energy crisis. The justification proffered was that the rolling blackouts were impeding the ability of both the Space Agency and the State's military installations to execute their missions in support of the national defense.

Two years ago, the Energy Department's then acting general counsel provided this Committee a fairly comprehensive description of how the energy crisis came about. There was no hint of the crisis being the result of anything other than the State's own flawed energy policy.

Energy security is clearly well within the mandate of the Defense Production Act. Section 2076 designates energy as a "strategic and critical material," placing it alongside less abstract strategic and critical materials like cobalt and chromium.

Given the importance of oil-rich regions of the world to U.S. foreign and national security policies, I believe this is appropriate.

What is less clearly appropriate, however, is the notion that the jurisdiction's self-imposed energy problem is within the spirit let alone the letter of the DPA. The Department of Energy is designated certain responsibilities within the Defense Product Act.

The Committee's purpose in asking the Department to testify today was to request a clarification of its understandings of the nexus between isolated energy problems that do not result from hostile action—unless, of course, one considered California State government a threat to its own well-being—and that do not affect the entire Nation or threaten its national defense.

Could you now or for the record provide this Committee the Energy Department's understanding of its role and responsibilities in implementing the Defense Production Act and what criteria you use at the Department of Energy in determining that a threat to national defense has materialized warranting its intervention in crises like that which affected California?

If you want to do it now, or you want to do it in more detail——

Ms. SWINK. In more detail for the record, please.

Chairman SHELBY. Okay; for the record, if you would do that.

I have another question. Dr. Sega, I will direct this to you. The Defense Department has been using the DPA authorities to recapitalize the industrial base for radiation hardened electronics—you have already mentioned this—and its fiscal year 2004 budget request includes $200 million, I believe—is that right—to continue this work.

Mr. SEGA. That is right.

Chairman SHELBY. According to the Defense Threat Reduction Agency, which is not represented here today, only two vendors still make radiation hardened parts. I assume that refers to Honeywell and BAE Systems; is that correct?

Mr. SEGA. That is correct.

Chairman SHELBY. I understand, however, that a $275 million contract announcement was made last year for Mission Research Corporation in support of the DTRA's radiation hardened microelectronics program.

It is also my understanding that Boeing and Peregrine Semiconductor have also been awarded contracts in the past few years to support this effort. In addition, there is U.S. Semiconductor Corporation, Intel, and Lockheed Martin.

Could our witnesses—and could you, from the Department of Defense, too—help us and provide the Committee a sense of the state of the industrial base for hardened electronics to date, which I think is very important for the national security? How has it changed since the end of the cold war, during which we were placing a lot of emphasis on hardening weaponry and related command, control, and communication systems against the threat of electromagnetic pulse?

I understand the Department currently estimates a total cost of $167 million for this project, but how much has been spent to date on this effort, both in contracts signed under DPA authorities and in total, and what is the anticipated requirement for radiation hardened parts, and what is the Department's goal for recapitalizing that industry?

I know that is a lot in one question.

Doctor, do you want to start?

Mr. SEGA. Yes, Mr. Chairman, I will start to answer the question.

The request in fiscal year 2004 for the Radiation Hardened Electronics Capital Expansion Project, I believe, is in the area of $65, $66 million, and the total cost of this CAPEX project on radiation hardened parts to a feature size, which is one of the pieces that we have to talk about, of .25 micron and capable of going toward .15 micron, is to be at $167 million.

The request is for $200 million in the event of—we do not expect that cost to go beyond $167 million, so it would be the flexibility given by the request.

That is for the equipment for a certain class of components that are engaged in this radiation hardened problem. I chair a Radiation Hardened Electronics Oversight Council, so it is the leaders in the defense community, those that need it, those that are producing it, those that are designing chips for the production lines and so forth, and it is from that work that there is a road map built for guiding us forward on the radiation hardened requirements.

The "high/hard" category generally involves nuclear weapons in terms of what effect they would potentially have on our electronics. Some of the effects are in the electromagnetic pulse area; others are in the particle or dose rate kinds of things. The facilities that are being funded, BAE and Honeywell, are in that latter category of components. But there are many parts of strategic and satellite systems that need radiation hardness, so this is addressing one part of it. We do have a process to get us to the net requirements——

Chairman SHELBY. You have to get to the whole, don't you?

Mr. SEGA. Yes, absolutely, absolutely.

Chairman SHELBY. Okay.

Ms. Patrick, will you stay with what he has said?

Ms. PATRICK. I have nothing to add; absolutely.

Chairman SHELBY. I have one more question. Despite the Defense Department's emphasis today on incorporating into its weapon systems and platforms commercial off-the-shelf technologies, there is no question, I believe, that modern military requirements are simply too demanding for the Department to become dependent on that approach, economically attractive though it might be.

Certainly such an approach is desirable, but presumably, the U.S. military seeks capabilities well beyond what is found today off the shelf in the commercial market.

Has the Defense Department formulated a long-range plan for preservation of the industrial base necessary to ensure adequate levels of military readiness in the years ahead? The Committee is aware of the uses to which the Defense Production Act authorities are applied, but is it fair to suggest that what we have seen to date represents more of an ad hoc, piecemeal approach than something representative of a well-thought-out long-term strategy?

In addition, would you comment on the defense industrial base language included in the House-passed version of the defense authorization bill?

Ms. Patrick, do you want to take that one?

Ms. PATRICK. Yes, I will certainly take a stab at that.

Chairman SHELBY. First of all, the commercial shelf is not going to provide all of our needs as much as we would like to buy it sometimes because it is cheaper; right?

Mr. SEGA. That is correct, Mr. Chairman.

Ms. PATRICK. I think there is always a balancing act between overspecification of military end-items that carries with it a presumption that only specific military components can fill a given requirement—and on the other hand the cost benefits to be gained if indeed you can successfully incorporate commercial off-the-shelf equipment into weapon systems.

One of the things that I think is very important in order to procure what you need for the warfighter is to get that mix right—in other words, not to overpay for things that are commercially available. What the Department or our high-technology companies do is application of fairly routine things into very complex solutions or very high-technology systems, and to make sure that we do not overpay where we can save money by buying commercial off-the-shelf equipment.

So, I think it is very important to keep an eye on that. And the other point that I think——

Chairman SHELBY. Do you keep an eye on it?

Ms. PATRICK. We do keep an eye on it. And I think the other thing that bears mention is that in many of the industrial base studies that we have done over the last many years, many of the key solutions to some of our most demanding challenges are likely to come not just from legacy defense companies but from commercial suppliers and indeed from emerging defense companies that we expect will have their roots as commercial suppliers. So, we have to make sure that we get the technology where it is most available—and it is not true in all cases that the defense applications are that much ahead of the commercial market. That is certainly the case in some of the IT applications. Some of the applications so critical for homeland security and emergency response actually have come to us and to Homeland Security from the commercial vendors, and it really would be a pity to insist on overspecifying systems that are immediately available if you can buy them on the open market.

Chairman SHELBY. Yes. Thank you.

Senator Allard, do you have any comments?

Senator ALLARD. I have just one question. One of the things that I see as a possible threat to national security and would certainly be an issue is if our rare metals and elements and whatnot were to become unavailable. For example, the Endangered Species Act may prevent us from extracting a necessary element or metal. Is there authority in current law that allows defense priorities to override perhaps the Endangered Species Act as far as extracting needed minerals from the ground?

Ms. PATRICK. I do not know the specific case of the Endangered Species Act, but let me take that——

Senator ALLARD. Do you feel you have that authority?

Ms. PATRICK. I think in most cases, we have ample authority to manage the defense industrial base to the benefit of the warfighter, yes, I do.

Senator ALLARD. I was thinking about energy, for example—maybe I should direct this to Ms. Swink—on energy needs. If a shortage of electricity suddenly develops for one of our major production manufacturers in California—and California has a number of them, and something were to happen to the lines, preventing the rebuilding of those lines or perhaps building an alternative line system, do you feel that you have the authority to override existing law, for example, the Endangered Species Act. Would the ESA or other laws prevent you from reconstructing the line? I think you could override existing law if it were a local community concern, but for something that would be a national law like the Endangered Species Act, could you override that to reconstruct lines if our national security were at stake?

Ms. SWINK. We will have to supply a response for the record.

Senator ALLARD. Would you do that, please?

Ms. SWINK. Yes.

Senator ALLARD. Thank you, Mr. Chairman.

Chairman SHELBY. Thank you, Senator Allard.

I want to thank all of you for appearing here today. I think what you are doing is very important, and what this Act allows you to do is more important.

Thank you all.

The hearing is adjourned.

[Whereupon, at 11:30 a.m., the hearing was adjourned.]

[Prepared statements, response to written questions and additional material supplied for the record follow:]

PREPARED STATEMENT OF SENATOR WAYNE ALLARD

I would like to thank Chairman Shelby very much for holding this hearing on reauthorization of the Defense Production Act. I am pleased to see that you are actively exercising the Committee's authorizing jurisdiction, and I look forward to the opportunity to working with you on reauthorization of the Defense Production Act.

It would be easy to simply ignore the need for reauthorization. After all, we are coming off of major military victories, so there would not seem to be any direct need for the Defense Production Act. However, it is tools such as the Defense Production Act which can help our nation be well prepared for military events or domestic emergencies.

As a member of the Armed Services Committee, I spend a great deal of time on the issue of military readiness. It is critical that our men and women in uniform have access to the supplies and technology that they need in a timely manner. The Defense Production Act gives them this capability. Furthermore, it can help promote new technologies that will reinforce our military efforts.

I would like to thank our witnesses for being here today to share their comments on reauthorization of the Defense Production Act. I look forward to your testimony.

PREPARED STATEMENT OF RONALD M. SEGA

DIRECTOR, DEFENSE RESEARCH & ENGINEERING
U.S. DEPARTMENT OF DEFENSE

JUNE 5, 2003

Good morning, Mr. Chairman and Members of the Committee. I appreciate the opportunity to share with you the Department of Defense's (DOD) views regarding the Defense Production Act (DPA) and the role it plays in helping to obtain the goods and services needed to promote the national defense. Although enacted originally in 1950, the Act provides statutory authorities still relevant and necessary for the national defense in the 21st Century.

Let me start by saying a few words on why the Defense Production Act (DPA) is important to the Department of Defense. A strong domestic industrial and technology base is one of the cornerstones of our national security. The DPA provides the Department the tools required to maintain a strong base, responsive to the needs of our armed forces. A key component of the DPA is Title III which will be the focus of my testimony. The authorities contained in the DPA continue to be of vital importance to our national security and I want to express the Department's support for reauthorizing the Act through September 30, 2008. The Deputy Under Secretary of Defense for Industrial Policy, Miss Suzanne Patrick, will discuss Title I and Title VII.

Title III provides the President unique authorities that are being used to establish, expand, and maintain essential domestic industrial capacity needed to field advanced systems for today and the future. The primary objective of the Title III program is to work with U.S. industry to establish economically viable production capabilities for items essential to our national security. The Title III program meets this objective through the use of incentives to stimulate private investment in key industrial capabilities. The incentives most used by the Department include sharing in the costs of capital investments, process improvements, material qualification, and providing when necessary, a purchase commitment that will ensure a market for their product. Through these incentives, domestic industry is encouraged to take on the business and technical risks associated with establishing or maintaining a commercially viable production capacity.

The Title III program is also being used to transition emerging technologies. Title III can facilitate the transition of new technologies by first eliminating market uncertainties and reducing risks that discourage potential producers from creating new capacity. Second, Title III incentives can create more efficient, lower cost, production capabilities, which reduce prices and increase demand. Third, Title III projects can generate information about the performance characteristics of new materials and support testing and qualification to promote the incorporation of these materials into defense systems. Without a program like Title III, the insertion of these new technologies, at best, could be delayed for many years.

As a means of assuring Congressional oversight, Title III projects may not be initiated until a Presidential determination has been made and the project has been identified in the Budget of the United States. The Presidential determination verifies that: 1. the shortfall being addressed by the Title III project is essential for

national defense; 2. industry cannot or will not on their own establish the needed capacity in a timely manner; 3. Title III is the most cost effective or the most expedient method for meeting the need; and 4. defense and commercial demand exceed current domestic supply.

A success story is the best way to highlight the benefits of the program. Gallium arsenide is a semiconducting material used in the fabrication of advanced electronic devices. It can provide advantages in terms of speed, power consumption, performance, and reliability over more commonly used semiconductor materials, such as silicon. Electronic devices built on gallium arsenide semiconductors are enabling technologies for a wide variety of defense weapon systems including radars, smart weapons, electronic warfare systems, and communications. These semiconductors can be found in such systems as the Airborne Early Warning/Ground Integration System, the B–2 Bomber, the Longbow Apache helicopter, fighter aircraft (including F–15, F–16, and F–18), missiles (including Patriot, Sparrow, and Standard), and various radar systems.

At the outset of this Title III project, the long-term viability of U.S. gallium arsenide wafer supplier base was in doubt. Foreign firms dominated the industry with a 75 percent world market share. United States firms were discouraged from competing more vigorously by the relatively small market for these wafers, by the dominant market position of the foreign suppliers, and by the high capital investment required to remain competitive. Foreign firms led the way on pricing, availability, and the pace of technological advancement.

With the help of Title III, the U.S. producers made a dramatic turnabout. By 2000, these contractors accounted for 65 percent of wafer sales worldwide. Their combined sales of gallium arsenide wafers grew by nearly 400 percent. In addition, wafer prices dropped by approximately 35 percent. This reduction in wafer prices and improvement in wafer quality resulted in significant reductions in defense costs for critical electronics.

Title III Projects

There are currently eight active Title III projects and DOD is initiating two new projects this year, one of which is to establish production capacity for Yttrium Barium Copper Oxide (YBCO) superconductor wire. This initiative will establish a domestic production capacity for YBCO, a high temperature superconductor material, which could significantly enhance the development of future directed energy weapons and electric power generation. Title III projects address a variety of advanced materials and technologies and generally fall into the following two categories:

Electronic Materials and Devices

Projects in this category include recently completed projects in gallium arsenide, and indium phosphide wafers and ongoing projects for silicon carbide wafers, and radiation hardened electronics. These are enabling technologies, without which potential advances in microelectronics would be far more limited. These materials offer advantages in terms of faster device performance, greater resistance to radiation and temperature, reduced power requirements, reduced circuit size, increased circuit density, and the capability to operate at higher frequency levels. Advances in electronic materials can enable new capabilities for defense systems and improvements in old capabilities.

Advanced Structural Materials

Recently concluded projects established production capabilities for discontinuous reinforced aluminum, aluminum metal matrix, and titanium metal matrix composites. These new structural materials offer improvements in terms of the strength, weight, durability, and resistance to extreme temperatures. These benefits are particularly important in aerospace applications.

Projects initiated in fiscal year 2002 include:

Radiation Hardened Microelectronics

This project illustrates the key role Title III plays in providing our armed forces with the technologies they need to be successful on the battlefield. We were in danger of losing our last remaining suppliers of these critical components needed for our strategic missile and space systems. Because of the small number of components that the Department buys and limited commercial demand, our current suppliers were unable to generate sufficient revenues to purchase the production equipment needed to produce radiation hardened microelectronics at the feature size needed to meet future defense requirements. Title III is helping these companies through equipment purchases and modernization to remain viable suppliers, capable of sup-

porting future defense requirements. Without Title III, it is likely we would have lost this critical production capability.

Radiation Hardened Microprocessors

Complimentary of the radiation hardened project for microelectronics is a project for radiation hardened microprocessors. Current radiation hardened microprocessors are several generations behind commercial microprocessors. Defense space systems require high performance and protection against high radiation environments. This project will enable the production of an advanced commercial microprocessor capable of meeting the processing and radiation hardened requirements for military applications. The radiation hardened microprocessors will be based on current commercial microprocessors. Benefiting most from this project will be advanced defense satellite systems.

Rigid-Rod Polymers

The goal of this project is to establish a domestic production capacity for Rigid-Rod Ultra-High Strength Polymeric Materials. Rigid-rod polymeric materials can be used as metal substitutes for critical electronic, weapon, and personnel protection systems. The focus of the project is to transition the technology from a small scale R&D process and establish an initial production capacity of approximately 100,000 pounds annually. Potential applications include replacement for brass shell casing in small arms ammunition, foam core to replace honeycomb core in aircraft, replacement for metal castings, and lightweight thermal barriers and doors.

Wireless Vibration Sensors

The goal of this project is to establish an affordable domestic production capacity for high-quality wireless vibration sensors. The project could improve the timely production and fielding of affordable smart sensors for Condition-Based Maintenance. Condition-Based Maintenance is a key enabling tool to lower asset lifecycle cost by providing online measurement and quantification of the condition and maintenance needs of mechanical systems such as engines and power trains on aircraft, vehicles, and ships.

Reauthorization of the DPA

Most provisions of the Defense Production Act are not permanent law and must be renewed periodically by the Congress. We are requesting a reauthorization of the authorities contained in the Defense Production Act until September 30, 2008. In addition, we are requesting to increase the statutory authorization limit contained in Section 303(a)(6)(C) to $200 million to correct the industrial resource shortfall for the radiation hardened electronics project. The DPA requires the Department to obtain specific authorization for any Title III project that exceeds $50 million. The expected cost of the radiation hardened electronic project is $167 million. However, we are asking for authority up to $200 million in the event of unexpected cost increases for the project.

We are also requesting to make Section 707 permanent law to provide continued liability protection to contractors executing priority contracts in compliance with the Defense Production Act.

Conclusion

In conclusion, the DOD needs the Defense Production Act. It contains authorities that exist no where else. Current world events make these authorities more important than ever. The DPA is a proven mechanism. Its array of authorities has helped us meet the challenges of the last 50 years. By judiciously applying its authorities to the challenges facing us today, the DPA will see us to a more secure future. I hope that I have conveyed to you the significant role the Defense Production Act plays in ensuring our Nation's defense. The Department fully supports the proposed bill to reauthorize the DPA.

Thank you for the opportunity to discuss the Defense Production Act.

PREPARED STATEMENT OF SUZANNE D. PATRICK

DEPUTY UNDER SECRETARY FOR INDUSTRIAL POLICY

U.S. DEPARTMENT OF DEFENSE

JUNE 5, 2003

Good morning, Mr. Chairman and Members of the Committee. I appreciate the opportunity to share with you the Department of Defense (DOD) views regarding

the Defense Production Act (DPA). This Act is critical to DOD, both in time of contingency or conflict, as well as during peace. It helps DOD obtain the goods and services needed to promote the national defense. Although enacted originally in 1950, the Act provides statutory authorities still relevant and necessary for the national defense in the 21st Century. I also want to express the Department's support for reauthorizing the Act through September 30, 2008.

Let me start by saying a few words on why the Defense Production Act is important to the Department of Defense. A strong domestic industrial and technology base is one of the cornerstones of our national security. The Act provides the Department of Defense tools required to maintain a strong base that will be responsive to the needs of our armed forces. Specifically, it provides the President the authority to: (1) direct priority performance of defense contracts and allocate scarce materials, services, and industrial facilities; and (2) establish, expand, or maintain essential domestic industrial capacity. The authorities in this Act continue to be of vital importance to our national security.

My testimony today focuses on one specific provision of the Defense Production Act, Title I. I particularly want to describe for you why Title I authority is important and how we are using it today.

Title I

Title I (Priorities and Allocations) of the DPA provides the President the authority to: 1. require preferential performance on contracts and orders, as necessary or appropriate to promote the national defense; and 2. allocate materials, services, and facilities as necessary or appropriate to promote the national defense.

Executive Order 12919 delegates these authorities to the Federal Departments and Agencies. The Department of Commerce (DOC) is delegated responsibility for managing industrial resources. To implement this authority, the Department of Commerce administers the Defense Priorities and Allocations System (DPAS). The DPAS: 1. establishes priority ratings for contracts; 2. defines industry's responsibilities and sets forth rules to ensure timely delivery of industrial products, materials, and services to meet approved national defense program requirements; and 3. sets forth compliance procedures.

The Department of Commerce has delegated to the Department of Defense authority under the DPAS to: 1. apply priority ratings to contracts and orders supporting approved national defense programs. (However, the Department of Defense is precluded from rating orders for end items that are commonly available in commercial markets and for items to be used primarily for administrative purposes, for example, office computers); and 2. request the Department of Commerce to provide Special Priorities Assistance to resolve conflicts for industrial resources among both rated and unrated (for example, nondefense) contracts and orders; and to authorize priority ratings for allied nation defense orders in the United States when such authorization furthers U.S. national defense interests.

Except as noted above, all Department of Defense contracts are authorized an industrial priority rating. The authorities, applied via contract clauses, are like insurance, always present but only executed when absolutely necessary. The Department of Defense uses two levels of rating priority, identified by the rating symbols "DO" or "DX." All DO rated orders have equal priority with each other and take preference over unrated orders. All DX rated orders have equal priority with each other and take preference over DO rated orders and unrated orders. If a contractor cannot meet the required delivery date because of scheduling conflicts, DO rated orders must be given production preference over unrated orders and DX rated orders must be given preference over DO rated orders and unrated orders. Such preferential performance is necessary even if this requires the diversion of items being processed for delivery against lower rated or unrated orders. Although the DPAS is largely self-executing, if problems occur, the contractor or the Department of Defense can request the Department of Commerce provide Special Priorities Assistance to resolve the problem.

Although, important in peace, the DPAS is indispensable in the event of conflict or contingency. DPAS gives the Department of Defense the necessary power and flexibility to address critical warfighter needs involving the industrial base effectively and expeditiously. While the Department of Defense has used Title I since the 1950's, recent history, and operations such as Desert Shield/Storm, Bosnia, Kosovo, Enduring Freedom, and Iraqi Freedom have demonstrated its continued importance.

Predator Unmanned Aerial Vehicles (UAV's) armed with Hellfire missiles were used for the first time in Afghanistan. They included an upgraded sensor package, the Multi-Spectral Targeting System (MTS). The contractor's original delivery date for three systems was March 2003. Using DPAS, we jumped this order to the head of the production queue and the contractor was able to deliver three systems in De-

cember 2001, 18 months earlier than originally promised. Since that time, we have used DPAS to accelerate forty additional Multi-Spectral Targeting Systems. We all are aware of the dramatic impact manned Predators had in waging war in Afghanistan, and most recently in Iraq.

During Operations Enduring Freedom and Iraqi Freedom, a new lighter kind of body armor proved remarkably effective in minimizing fatal battlefield injuries. That latest generation Army and Marine body armor is comprised of protective vests with inserts made of an extremely tough fiber—Spectra—bonded to a ceramic plate. We used DPAS authority to direct the Spectra manufacturer's production to the highest priority Army and Marine requirements in order to maximize small arms protection for the warfighters.

For Operation Iraqi Freedom, the U.K. Ministry of Defence needed Precision Lightweight Global Positioning System GPS Receivers. The U.K. requirements were critical to the warfighting effort. We used DPAS to give the U.K. order an industrial priority rating and move it ahead of some lesser priority U.S. orders that were not needed for deployed or deploying forces. The U.K. received the equipment in a very timely manner to support their forces in theater.

The authority to provide preferential treatment for foreign defense orders in the United States when such treatment promotes national defense interests is increasingly important. Among the consequences of globalization and industrial restructuring are the creation of multinational defense companies and an increasing degree of mutual defense interdependence. Reciprocal industrial priorities systems agreements with our allies encourage them to acquire defense goods from U.S. suppliers, promote interoperability, and simultaneously provide increased assurance that the DOD's non-U.S. defense suppliers will be in a position to provide timely supplies to DOD during both conflict/contingency situations and peacetime.

NATO has in place a NATO-wide agreement to encourage reciprocal priorities support within the alliance.

In addition to a NATO-wide agreement we are establishing formal bilateral agreements with key allies and trading partners. These provide an opportunity to establish stronger government-to-government agreements for reciprocal priority support, more quickly. The United States has a longstanding bilateral priorities support agreement with Canada. Within the past 3 years, DOD representatives have had discussions about such bilateral agreements with several allies and friends. The Department of Defense and United Kingdom Ministry of Defence representatives have now negotiated a formal bilateral agreement that commits each nation to establish and maintain a reciprocal priorities system and to provide the other nation reciprocal access to that system. Similar agreements are being discussed with Australia, Spain, Norway, the Netherlands, Italy, and Sweden.

During peacetime, the DPAS is important in setting priorities among defense programs that are competing for scarce resources and industrial output. Delayed deliveries of production parts and subassemblies to producers of weapon systems have consequences in terms of system cost and ultimately on the readiness of operational forces. DPAS gives the Department of Defense an opportunity to prioritize deliveries and minimize cost and schedule delays among DOD orders, and to support other agencies and allied Nation defense procurements in the United States. For example:
1. U.S. State Department: DPAS was employed to accelerate deliveries on multiple programs as part of the embassy security protection upgrade program worldwide;
2. United Kingdom: The U.K. contractor experienced delays in receiving Integrated Helmet Units needed for U.K. WAH–64 Apache Longbow helicopters. DOD/DOC authorized the use of a DO rating priority that permitted the manufacturer to ship the Integrated Helmet Units sooner than would have been possible without the rating authority, which allowed the contractor to meet its production delivery requirements to the U.K. Ministry of Defence.

DPA Title I provisions are a critical tool in DOD's arsenal. It would be very difficult for the Department of Defense to meet its national security responsibilities without that tool.

I want to briefly express support for the Title VII authorities, also very important to the Department of Defense. Title VII contains miscellaneous provisions, including enforcement mechanisms, which help protect the Nation's security.

Extension of the DPA

As you know, most provisions of the Defense Production Act are not permanent law and must be renewed periodically by Congress. The Act has been renewed many times since it was first enacted. The current law will expire September 30, 2003. We fully support reauthorizing the DPA through September 30, 2008.

Conclusion

In summary, the Department of Defense needs the Defense Production Act. It contains authorities that exist no where else and I hope that I have conveyed to you the significant role those authorities play in ensuring our Nation's defense.

Thank you for the opportunity to discuss the DPA with you today. We look forward to working with you to ensure a timely reauthorization of the DPA.

PREPARED STATEMENT OF KARAN K. BHATIA

DEPUTY UNDER SECRETARY FOR INDUSTRY AND SECURITY
U.S. DEPARTMENT OF COMMERCE

JUNE 5, 2003

I appreciate the opportunity to testify today before the Committee on the reauthorization of the Defense Production Act, also known as the DPA.

When this Committee last convened at a hearing about the importance of the DPA and its relevance in the post-cold war era in June 2001, none of us could have then predicted the challenges that the United States would soon encounter. Nor, of course, could we have predicted the important role that DPA authorities would play in meeting those challenges.

What we did know—and what Under Secretary Juster testified to—was that for more than 50 years, the Defense Production Act has enabled the President to ensure our Nation's defense, civil preparedness, and military readiness. The use that has been made of DPA over the past 2 years—to facilitate the country's response to September 11, to strengthen the security of our homeland and our embassies abroad, and to support the deployment of troops in the Middle East, in both Afghanistan and Iraq, has demonstrated that the DPA continues to be a critically important tool in meeting contemporary threats to our security. During that same period, the DPA has also facilitated important analyses of our defense industrial base, defense trade practices, and foreign investments in U.S. companies that may pose national security issues.

Accordingly, the Commerce Department strongly supports reauthorizing the DPA for a 5-year period. We also urge Congress to adopt a minor clarifying amendment to the Act that I will discuss shortly.

I will focus my comments on the DPA authorities that are relevant to the Department of Commerce and the activities of the Department under those authorities. The Department of Commerce plays several roles in implementing DPA authorities that relate to the defense industrial base. First, under Title I of the DPA, the Department administers the Defense Priorities and Allocations System. Second, under Title III, the Department reports to Congress on defense trade offsets. Third, under Title VII, the Department analyzes the health of U.S. industrial base sectors. And fourth, also under Title VII, the Department plays a significant role in analyzing the impact of foreign investment on the national security of the United States. I will briefly discuss each of these roles.

Defense Priorities and Allocations System

Title I of the DPA authorizes the President: (i) to require the priority performance of contracts and orders necessary or appropriate to promote the national defense over other contracts or orders; (ii) to allocate materials, services, and facilities as necessary or appropriate to promote the national defense; and (iii) to require the allocation of, or the priority performance under contracts or orders relating to, supplies of materials, equipment, and services in order to assure domestic energy supplies for national defense needs. These authorities to prioritize contracts and require allocations for industrial resources are delegated to the Secretary of Commerce by Executive Order 12919.

Commerce has implemented these authorities through the Defense Priorities and Allocations System (known as "DPAS"). DPAS has two broad purposes. First, it seeks to ensure the timely availability of products, materials, and services that are needed to meet national defense and emergency preparedness requirements with minimal interference to the conduct of normal business activity. Second, it provides an operating structure to support a timely and comprehensive response by U.S. industry in the event of a national emergency.

Under the DPAS, the Department of Commerce delegates the authority to use the system to obtain critical products, materials, and services as quickly as needed by several Federal agencies including the Department of Defense. To implement this authority, these agencies—called Delegate Agencies—can place what are known as

"rated orders" on essentially all procurement contracts. The prime contractors, in turn, place "rated orders" with their subcontractors for parts and components down through the vendor base. The "rated orders" notify the contractors that they are accepting contracts rated by the U.S. Government. The contractors then must give these orders priority over unrated commercial orders to meet the delivery dates of the rated orders. The Department has also authorized use of this authority to meet certain critical Homeland Security requirements as I will discuss with you in just a few minutes.

In the vast majority of these cases, the procuring Federal agency and the contractor quickly come to mutually acceptable terms for priority production and delivery. If the company and the Delegate agency cannot reach agreement, the Department of Commerce provides "Special Priorities Assistance"—essentially, it functions as intermediary—to resolve disputes and ensure that production bottlenecks for many military and national emergency requirements are resolved.

Let me briefly highlight a few examples of the Department's work in this important area.

Operations Desert Shield and Desert Storm

In 1990 and 1991, Commerce worked actively to administer the DPAS in support of U.S. and allied requirements for Operations Desert Shield and Desert Storm. We handled 135 Special Priorities Assistance cases to assure timely delivery of critical items, including avionics components for aircraft, precision guided munitions, communications equipment, and protective gear for chemical weapons. In the majority of cases, due to the Commerce Department's involvement, delivery schedules were reduced from months to weeks or from weeks to days.

Coalition Action in the Balkans

From 1993–2000, Commerce handled 73 Special Priorities Assistance cases in support of U.S. forces, allied forces, and NATO coalition action in the Balkans. Although most of these cases pertained to NATO acquisition in the United States of communication and computer equipment, Special Priorities Assistance under DPAS also was used to expedite the production and delivery of such military items as antennas, positional beacons, and precision guided munitions for both U.S. and allied forces. Priorities authority may be used to support allied defense requirements when such support is deemed by the Department of Defense to be in the interest of U.S. national defense.

Operations Enduring Freedom and Iraqi Freedom

The DPAS was again used extensively and successfully to secure delivery of a number of items for both the United States and allied forces to support the troop deployments both in Afghanistan under Operation Enduring Freedom and then in Iraq under Operation Iraqi Freedom. For U.S. forces, the Commerce Department worked closely with U.S. suppliers to obtain guidance system components for "smart bomb" precision guided munitions, targeting and sensor equipment for our Predator and Global Hawk Unmanned Aerial Vehicles, SATCOM radio equipment, and ballistic material for body armor. For our allies such as the United Kingdom, the Commerce Department worked to obtain deliveries of such items as satellite communication radios and search and rescue radios, helicopter equipment avionic displays and navigation systems, night vision devices, and GPS receivers for both ground troop use and as a "smart bomb" guidance system component. For the Australians, we secured timely delivery of infrared laser targeting equipment.

Homeland Security

In 1994, the DPA priorities and allocations authority under Title I was extended to cover civil emergency preparedness activities by the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act). This extension of authority has been relied upon to support several post-September 11 homeland security initiatives. For example:

- The Federal Bureau of Investigation was granted the DPAS authority for the Trilogy program to upgrade nationwide FBI communications and data processing capabilities;
- The Transportation Security Administration was granted the DPAS support to achieve the timely delivery of explosive detection systems equipment to screen checked baggage for explosives at more than 400 U.S. commercial airports. This was followed by a grant of DPAS authority for TSA's 7-year, $1 billion aviation security Information Technology Managed Services program to upgrade airport and airline security data processing and communications capabilities.
- Currently, the Commerce Department is working with the Department of Homeland Security to review a request by the Customs Service for DPAS support of

its 5-year, $1.3 billion port security Automated Commercial Environment (ACE) system to enhance port security, especially as it pertains to the tracking and the identification of containerized cargo.

While these examples represent only a small fraction of the total number of exercises of the DPAS, I believe they demonstrate how DPAS remains critically relevant to meeting increasingly complex contemporary national defense, emergency preparedness, and homeland security needs.

Defense Trade Offsets

Pursuant to Section 309 of the DPA, the Department of Commerce reports to the Congress on the use of offsets in defense trade. Offsets are industrial compensation practices required by foreign governments as a condition of purchase of defense articles and/or services. For example, a foreign government may agree to purchase fighter aircraft from an American manufacturer, but can require that some of the aircraft components be produced in the foreign country using local suppliers. Foreign governments may also demand technology transfer, local investment, and countertrade as part of the agreement.

In February of this year, Commerce sent its sixth report on offsets to Congress covering the period of 1993 through 1999. From the anecdotal reports we have received, the report appears to have been widely read and well-received by Congress and by industry. The report found that, during the covered time period, U.S. defense exports were increasingly affected by the use of offsets as part of defense sales, especially in light of a global retrenchment in military expenditures. Specifically, we found that offsets have become an increasingly important factor in determining contract awards, and have a direct bearing on U.S. defense contractors' access to foreign markets. Offset agreements in excess of 100 percent of the contract value are occurring with increasing frequency, and in some cases have exceeded 300 percent of the contract.

As a matter of policy, the U.S. Government is not involved in the development of offset proposals by U.S. defense firms as they bid on international defense weapons projects. However, as the report expresses, the Department of Commerce is concerned that the level of offsets required by foreign governments appears to be rising and that the offset package is becoming a signal factor in determining a contract award. In the event that U.S. defense firms are prevented from competing on a level playing field in the international marketplace, the U.S. industrial base at both the prime and the subcontractor levels will suffer. Accordingly, the Department of Commerce is committed to working with U.S. industry, the Department of Defense, and foreign governments to analyze the impact of offsets on all parties and to seek ways to mitigate the adverse effects of offsets on competition.

Defense Industrial Base Studies

Under Section 705 of the DPA and Executive Order 12656, the Department of Commerce conducts surveys and analyses, and prepares reports on specific sectors of the U.S. defense industrial base. These studies are usually requested by the Armed Services, Congress, or industry. Using these industrial base studies, the Departments of Commerce and Defense can, for example, measure industry capabilities in an area such as high-performance explosives or measure industry dependence on foreign materials in manufacturing U.S. defense systems. The studies provide a competitive benchmark of critical sectors within the U.S. defense industrial base and gauge the capabilities of these sectors to provide defense items to the U.S. military. The studies also provide detailed data that are unavailable from other sources.

Currently, the Department of Commerce has a number of studies underway, including assessments of the air delivery (parachute) industry, the munitions power sources (batteries) industry, the shipbuilder's subcontractor base, and the textile and apparel industry. When completed, these assessments will provide the Government with information needed to understand the health and viability of each sector.

Section 705 of the DPA provides the Department of Commerce investigative authority regarding the defense industrial base and we have used this authority in the performance of industrial base assessments. While we are confident that this is consistent with Congress' intent, it would be helpful if that intent were made explicit in the language of Section 705. To that end, we support a slight amendment to Section 705 to make clear that the investigative authority "includes the authority to obtain information in order to perform industry studies assessing the capabilities of the United States industrial base to support the national defense." This amendment to Section 705 was included in the DPA reauthorization legislation reported out by the House Committee on Financial Services.

Foreign Investments in the United States

Finally, Commerce is involved in the exercise of authority under Section 721 of the DPA, known as the "Exon-Florio Provision" (which unlike the other provisions described above, would not expire without reauthorization, but I describe for the sake of completeness). Section 721 authorizes the President to prohibit foreign investments in U.S. companies that would result in foreign control when there is credible evidence that the foreign person exercising control "might take action that threatens to impair the national security," and no other laws are adequate and appropriate to deal with the threat. Pursuant to Executive Order 12661, the President has designated an interagency Committee on Foreign Investment in the United States ("CFIUS") to assist in the exercise of this authority. The Department of Commerce's contribution to the CFIUS process includes providing a defense industrial base and export control perspective to the CFIUS reviews. While the United States remains generally very much open to foreign investment—and the Exon-Florio authority to prohibit an investment has been used quite rarely—in this period of rapid globalization, the existence of this authority and the interagency review process are important.

Summary

In sum, the DPA provides authority for a variety of programs at the Department of Commerce of substantial importance to our Nation's security. Through DPAS, it facilitates the timely and effective provision of necessary supplies to our military, to our close allies, and increasingly, to meet Homeland Security requirements. The DPA also facilitates valuable assessments of the impact of offsets in defense trade and the health of key sectors of the defense industrial base. Finally, it affords the U.S. Government the opportunity to assess—and if necessary, take steps to limit foreign investments in U.S. companies that could threaten U.S. national security.

Most provisions of the Defense Production Act are not permanent law and must be renewed by Congress. For all these reasons, the Department of Commerce fully supports extending the Defense Production Act for a 5-year period.

Thank you.

PREPARED STATEMENT OF R. DAVID PAULISON

DIRECTOR, PREPAREDNESS DIVISION
EMERGENCY PREPAREDNESS AND RESPONSE DIRECTORATE
U.S. DEPARTMENT OF HOMELAND SECURITY

JUNE 5, 2003

Good afternoon, Mr. Chairman and Members of the Committee, I am David Paulison, Director of the Preparedness Division within the Emergency Preparedness and Response Directorate of the Department of Homeland Security (DHS). On behalf of Secretary Ridge, I appreciate the opportunity to appear before you today to support the 5-year reauthorization of the nonpermanent provisions of the Defense Production Act (DPA).

The DPA is the President's primary authority to ensure the timely availability of industrial resources for both military and civil emergency preparedness and response. Expiration of these provisions would severely undermine our Nation's ability to prevent, as well as to respond to a disaster that is truly catastrophic—whether natural or man-made.

The Department of Homeland Security combines many Government functions that focus on protecting our Nation's borders and airports, among other activities, and ensuring that we are prepared for and able to respond to terrorist attacks and natural disasters. The Defense Production Act authorities are critical to the Department's strategic objectives to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, minimize the damage and hasten the recovery from attacks that may occur.

Since September 11, we have seen the effectiveness of the Defense Production Act in reducing the Nation's vulnerability to terrorism. Specifically, the Defense Priorities and Allocation System authorized under Title I of the DPA was used by the Transportation Security Administration to expedite the production of explosive detection and communication systems for our major airports. Without the use of these priority orders, the manufacturers could not have delivered these systems in a timely fashion. In addition, we expect to request assignment of a DPA priority rating from the Department of Commerce to support the Bureau of Customs and Border

Protection within our Department to obtain equipment that will enable us to track containerized shipping arriving at our borders.

The Defense Production Act can also be used for preparedness, response, and recovery activities in catastrophic disasters such as an earthquake, a hurricane, or an incident involving a weapon of mass destruction. This use is being integrated into planning for such catastrophic occurrences.

DHS understands the need to have a priorities and allocations system ready to ensure the timely availability of resources to meet civil emergency requirements. Such a priorities and allocations system will enable Federal, State, and local governments to acquire items needed urgently to meet the needs of the affected population when such items are not readily available in the marketplace. Without this system our response and recovery operations could be severely hindered.

Other DPA authorities are important to the DHS mission. These authorities include the use of:

- Financial incentives, subject to Presidential designation, to establish industrial capacity for products and services, such as vaccines to protect against biological agents (under Title III);
- Industry agreements to enhance preparedness and response capabilities—for example, critical infrastructure protection (under Section 708); and
- An executive reserve to provide expertise from the private sector during an emergency (under Section 710).

Within the new Department, DPA authorities reside with the DHS Under Secretary for Emergency Preparedness and Response. DHS is preparing departmental guidance on the use of these DPA authorities. Specifically, DHS is implementing its DPA responsibilities by:

- Serving as an advisor to the National Security Council (NSC) on DPA authorities and national security resource preparedness issues and reporting on activities under Executive Order 12919;
- Providing central interagency coordination of the plans and programs incident to the authorities under Executive Order 12919;
- Developing guidance and procedures under the DPA for approval by the NSC;
- Resolving issues on resource priorities and allocation;
- Making determinations on use of priorities and allocations for essential civilian needs supporting the national defense; and
- Coordinating the National Defense Executive Reserve (NDER) program activities of departments and agencies in establishing NDER units and providing guidance for recruitment, training, and activation.

The DHS National Defense Executive Reserve (NDER) program is being evaluated in terms of what private sector expertise can be mobilized when needed to respond to today's threats. NDERs are valuable assets to several Federal departments and agencies. The reauthorization of DPA is required to continue this program.

DHS also recognizes the importance of Section 708 of the Defense Production Act that provides authority for the creation of voluntary industry agreements to support preparedness for national defense and civil emergencies. This authority allows industry and the Federal Government to work together to solve problems that inhibit the availability of resources in an emergency. The Homeland Security Act authorized the use of this provision for critical infrastructure protection planning and information sharing. Section 708 provides narrow antitrust and limited liability protections for infrastructure sectors and industry that are asked to prepare preparedness plans. DHS will be reviewing the guidelines for this program and determining if they need to be revised or streamlined to meet the current environment.

We will work with the National Security Council, the Homeland Security Council, and the appropriate Federal departments and agencies to ensure that DHS issues proper guidance and procedures for the implementation of these DPA authorities. We view DHS responsibilities under the DPA seriously and recognize the potential of the Act to support the efforts of other departments and agencies to prevent, prepare for, respond to, and recover from potential terrorist incidents and other emergencies.

In summary, the Department of Homeland Security is committed to fulfilling its responsibilities under the DPA and recognizes the Act's potential to enhance significantly the Nation's ability to respond to a homeland security threat.

Thank you for the opportunity to appear today. I would be pleased to answer any questions that you may have.

PREPARED STATEMENT OF DENISE SWINK

ACTING DIRECTOR, OFFICE OF ENERGY ASSURANCE
U.S. DEPARTMENT OF ENERGY

JUNE 5, 2003

I am Denise Swink, Acting Director of the Office of Energy Assurance at the U.S. Department of Energy. I am pleased to appear before the Committee in response to its request for testimony by the Department on the reauthorization of the Defense Production Act of 1950. The Committee's invitation letter requests the Department to address, in particular, the role of the Department of Energy in responding to crises in which Defense Production Act authorities are required.

The DOE Office of Energy Assurance is responsible for protecting critical infrastructures and key assets in the energy sector. Our office leads the effort to ensure a secure, reliable flow of energy to America's homes, businesses, industries, and critical infrastructures (e.g., telecommunications, transportation, water supply, banking and finance, manufacturing, education and public health systems). In carrying out our mission, we work closely with the Department of Homeland Security and in partnership with industry and State and local governments. The Department's energy assurance program is conducted in direct support of the President's National Strategy for Homeland Security and the President's National Energy Policy.

A comprehensive discussion of the authorities contained in the DPA and of how they might be used in responding to energy emergency situations is contained in a 1982 Department of Justice memorandum of law for the President which was submitted to the Congress in compliance with the Energy Emergency Preparedness Act of 1982 (Public Law 97–229). The memorandum's discussion of the DPA remains valid today. As the Justice Department's memorandum makes clear, whether the Defense Production Act authorities placed in the President might be useful in responding to energy crises would be highly fact-dependent. However, we do believe that a number of the Act's provisions could be potentially useful in addressing energy needs, and I will address their past use by the Department and ways in which the authorities could be useful in the future.

Title I of the Defense Production Act contains two separate "priority contracting" provisions authorizing the President to require performance on a priority basis of contracts or orders in certain circumstances. The Secretary of Energy has been delegated authority by the President to exercise the Title I priority contracting authorities, in Executive Order Numbers 11790 and 12919. The first provision, Section 101(a) of Title I, deals with priority contracting to "promote the national defense." Under Section 101(a), the Secretary may require performance on a priority basis of contracts for energy supplies that the Secretary deems "necessary or appropriate to promote the national defense." This authority could be used, for example, to require the acceptance of and priority performance under contracts relating to production, delivery, or refining of petroleum products or other forms of energy, including natural gas, to meet the energy needs of the Department of Defense and its contractors. It also could be used to facilitate transportation of energy supplies to meet national defense needs, for example, by requiring pipelines, marine terminals, and other facilities to perform energy transport contracts necessary to meet the priority needs of the Defense Department and its contractors.

In determining what the national defense requires, it is clear the Secretary may consider the potential impact of shortages of energy supplies. In the Energy Security Act of 1980, Congress specifically designated energy as a "strategic and critical material" within the meaning of the Defense Production Act and also added language to the DPA Declaration of Policy that establishes a link between assuring the availability of energy supplies and maintaining defense preparedness. The Defense Production Act's Declaration of Policy states:

> [I]n order to ensure national defense preparedness, which is essential to national security, it is necessary and appropriate to assure the availability of domestic energy supplies for national defense needs.

The second priority contracting provision in Title I of the Defense Production Act, Section 101(c), is linked to facilitating projects that maximize domestic energy supplies rather than to meeting the needs of the national defense. Section 101(c) authorizes the Department of Energy to require priority performance of contracts for goods and services for projects which would maximize domestic energy supplies, if the Secretaries of Energy and Commerce make certain findings, including that the good or service is scarce, critical, and essential to maximizing domestic energy supplies. If world circumstances were such that the President directed a drawdown of the Strategic Petroleum Reserve, and coincident with that direction from the Presi-

dent there was a significant breakdown in the Strategic Petroleum Reserve facilities, that would be the type of circumstance where, if it were urgent to replace scarce and backlogged specialized pumps and other apparatus, the Department could rely upon Section 101(c) to bring the facility back online in an operational sense as promptly as possible. Absent the Defense Production Act, it would be exceedingly difficult to persuade vendors to put our order at the head of the line for fear of third-party contract liability that they otherwise might expose themselves to, even if they were otherwise willing to cooperate with the Department in the interests of the country.

Section 101(c) might be used alone, or in tandem with Section 101(a), to assist in restoring critical energy infrastructures following widespread terrorist attacks or a natural disaster, for example, to assist electric utilities, oil companies, or other energy companies in obtaining equipment needed to repair damaged facilities, or to provide fuel oil or natural gas to electric utilities to ensure continued supply of electricity.

Section 101(c) was used in the late 1970's and again in the 1980's and early 1990's to facilitate petroleum production development of the Alaskan North Slope. The Department also relied on Section 101(c), as well as 101(a), as a complement to the emergency provisions of the Natural Gas Policy Act, in its January 2001 orders, directed by former President Clinton, to Pacific Gas and Electric Company and a number of natural gas suppliers to assure the continued supply of natural gas necessary for continued availability of electric service in the central and northern regions of California.

A third Defense Production Act provision which has been used in the past to address energy supply problems is Section 708, which provides a limited antitrust defense and breach of contract protection for industry participating in voluntary agreements and plans of action "to help provide for the defense of the United States through the development of preparedness programs and the expansion of productive capacity and supply beyond levels needed to meet essential civilian demand in the United States." This provision had its roots in our World War II experience and was an important vehicle for gaining the help of the oil industry during and after the Korean War. For example, in 1951–52, a voluntary agreement under Section 708 was used to protect a group of oil companies which agreed to provide heating oil to redress a winter shortfall in New England. Later, Section 708 was used for the first voluntary agreement of U.S. oil companies which had agreed to participate in the International Energy Agency's standby emergency preparedness programs. Subsequently, in 1975, Congress enacted very similar voluntary agreement authority in Section 251 of the Energy Policy and Conservation Act as the vehicle for U.S. oil company participation in the energy emergency preparedness activities of the International Energy Agency.

In the future, in the event of widespread damage to energy production or delivery systems caused by acts of terrorism or natural disasters, the DPA's Section 708 voluntary agreement authority might be used in establishing a voluntary agreement of energy service companies to coordinate the planning of the restoration of the damaged facilities.

To facilitate communications among stakeholders and to broaden our partnerships with the private sector, we have established Information Sharing and Analysis Centers (ISAC's) among energy industry stakeholders to improve infrastructure security. We expect to confer with the ISAC's on all of the authorities available to the President and to the Department that might be useful in protecting and, if necessary, restoring critical energy infrastructures.

The Secretary believes that the authorities the DPA confers on the President are important tools that should remain available to the President unimpaired to use in appropriate circumstances. Accordingly, the Department joins the rest of the Administration in supporting a 5-year extension of the Defense Production Act.

This concludes my prepared statement. I will be pleased to respond to any questions the Committee may have.

RESPONSE TO WRITTEN QUESTIONS OF SENATOR SHELBY FROM RONALD M. SEGA

Q.1. What steps can be taken to ensure the retention of domestic semiconductor chip manufacturing capabilities, as well as research and design capabilities?

A.1. The Department is continuously assessing the health of the domestic defense industrial base to ensure that it can meet national security goals such as maintaining the technological superiority of defense systems and providing a more timely response to crisis needs. Should a shortfall in production capability for semiconductors or other materials essential for national defense be identified, the Defense Production Act (DPA) provides an array of authorities that could be employed. The Department continues to have a strong research and engineering semiconductor program. The current year's investment in semiconductors ensures that the Department's current and future military systems will have technological superiority.

Q.2. Is this an issue that the department feels could or should be addressed within the context of the DPA?

A.2. DPA authorities could be used to address a shortfall in semiconductor manufacturing capability. For example, the Department is currently executing a DPA Title III project to modernize and maintain the production capabilities of the remaining domestic producers of Radiation hardened microelectronics to enable them to meet the requirements of defense space and missile systems. Other Title III projects (current and previous) supporting the domestic semiconductor industry include: Radiation hardened microprocessor for space, radiation hardened cryogenic temperature microelectronics, silicon carbide substrates, semi-insulating gallium arsenide wafers, high purity float zone silicon, and semi-insulating indium phosphide substrates.

RESPONSE TO ORAL QUESTION OF SENATOR SARBANES FROM SUZANNE D. PATRICK

Q.1. During the hearing the following question was asked: We last reauthorized the DPA in 2001. In fact, we had held an oversight hearing ahead of the Administration's submission of authorization, which came from the Federal Emergency Management Agency and was transmitted to this Committee, the reauthorizaton request.

Now, this year, the Administration's transmission to the Congress requesting a reauthorization came not from FEMA nor to the Committee, but came from the Defense Department as part of the request for the national defense authorization bill and went to the Vice President in his capacity as President of the Senate.

That is a complete departure from past precedent with respect to the DPA, and I was interested to know why that occurred.

A.1. The information follows:

Executive Order 12919 designates FEMA as the lead federal agency responsible for providing central coordination and support of a variety of Defense Production Act (DPA) matters to include plans and programs incident to the authorities under the order; and developing guidance and procedures under the DPA that are approved by the National Security Council (NSC). As such, FEMA

has the primary responsibility for leading an interagency effort to develop a legislative proposal for submission to Congress.

During the fourth quarter of 2002, Department of Defense representatives made a number of inquiries to FEMA and NSC staff regarding the need to initiate an interagency effort to develop a legislative proposal to reauthorize the Defense Production Act prior to its expiration on September 30, 2003. However, little action was taken. By early January 2003, with conflict in Iraq imminent and the need to meet Congressional schedules for timely consideration of legislation, it was imperative that reauthorization legislation be submitted at the earliest possible opportunity. Consequently, the Department of Defense, with the knowledge and acquiescence of the NSC and FEMA, drafted legislation to reauthorize the Defense Production Act. The legislative proposal was included in the DOD National Defense Authorization bill that was forwarded to Congress on March 3, 2003. The Authorization bill was deemed to be the most practical way of submitting the legislation to Congress. This was done with the full expectation that the proposed legislation would be provided to the Senate Committee on Banking, Housing, and Urban Affairs and the House Committee on Financial Services for consideration. In the future, we fully expect the Department of Homeland Security to take the lead in efforts regarding the Defense Production Act.

We apologize for any confusion this action may have engendered. It was never the intent of the Department of Defense to circumvent the jurisdiction of the Senate Committee on Banking, Housing, and Urban Affairs and the House Committee on Financial Services over the Defense Production Act.

RESPONSE TO WRITTEN QUESTIONS OF SENATOR REED FROM RONALD M. SEGA

Q.1. A number of experts have recently raised concern over the future of the domestic semiconductor microelectronics industry and its ability to compete with China and other nations. As you know, microelectronics are at the heart of almost all of our advanced weapon systems, so, I am concerned that without some action the United States will lose the ability to supply the electronics it needs for our own defense systems. In your testimony, I know you highlight some past work that has supported the semiconductor industry. What are your future plans to make use of the authorities of the Defense Production Act to preserve this critical national capability?

A.1. The authorities of Title III of the DPA provide an extremely valuable tool by which the Department can apply financial incentives to either maintain an essential domestic defense industrial capability or encourage private industry to undertake the creation of new domestic sources of supply. Whenever an industrial base shortfall jeopardizes our defense capabilities, whether it is microelectronics or other technology items, DPA authority can be used to resolve the shortfall. One semiconductor related project being considered for Title III assistance is a next generation radiation hardened microprocessor.

Q.2. I know that the Defense Production Act program tries to address technology areas in which U.S. industry lags behind foreign producers. How exactly do you measure how U.S. industry stands relative to foreign industry when it comes to the development and manufacture of defense technologies?

A.2. The Department relies on existing industrial base, technical, and market studies/assessments to gain insight into specific technical areas or industries and to determine whether or not the criteria set forth in the DPA are fully satisfied. Sources of this information often include: Industrial base assessments prepared by DOD; specialized technical assessments authored by the military services; and commercially available market and technology studies. The principal focus of any assessments or investigations undertaken directly by the DPA program is to better understand the composition and nature of competition within a specific industry. Emphasis is placed on identifying the business and technical factors that contribute to diminishing production capability, lack of investment, and financial weakness that often foretell the need for application of the DPA authorities. To the maximum extent feasible, findings are used to formulate an acquisition strategy to address and overcome these factors in order to strengthen the production capabilities and economic viability of domestic producers.

RESPONSE TO WRITTEN QUESTIONS OF SENATOR REED FROM SUZANNE D. PATRICK

Q.1. I know that in our fiscal year 2004 bill, the Senate Armed Services Committee has requested a report from DOD on plans to address the future of domestic supplies of semiconductor microelectronics needed for defense systems. I look forward to seeing that report. I hope you will be involved in its development and make sure that the DPA programs are highlighted in DOD's plans?

A.1. Yes, my office has already been studying the semiconductor industrial base. We are involved in a coordinated effort across the Department to respond to the fiscal year 2004 Senate Armed Services Committee language in addition to other Congressional tasks addressing semiconductors. The Defense Production Act (DPA) Title III program is already playing a critical role in improving the radiation hardened segment of the semiconductor industrial base. The Department will consider DPA for other uses as our broader plans develop.

Q.2. I note that in the Senate Armed Services Committee, we proposed that Dr. Sega establish a Global Research Watch program to help him make assessments of foreign scientific capabilities and help make investment decisions for DOD science and technology. Do you think that a similar effort should be made to address industrial base issues and assess foreign manufacturing capabilities of defense systems?

A.2. The Department's ongoing process of assessing foreign manufacturing capabilities generally is decentralized, being performed at the individual program level. At that level, the Department surveys the potential suppliers domestically and internationally. A formal, global assessment process would not be as responsive or as timely to the requirements of programmatic decisions.

The competence of off-shore manufacturing is of interest, but the truly important thing is that we continue to have access, either through domestic manufacturers or through our friends and allies, to the capabilities necessary to deliver the world-class equipment to the warfighter that America expects. To better focus our efforts, we are conducting a series of studies across the Joint Warfighting Capabilities Assessment architectures to catalog which operational capabilities require national industrial leadership to maintain an asymmetric operational advantage and to identify the key industries critical to those capabilities. We then will make an overarching assessment of the ability of domestic and foreign industry to provide those capabilities for defense systems. This assessment will allow us to bring our resources to bear to sustain our industrial leadership or to gain it in these key industries. As the industrial base then continues to evolve we can update our assessments to put priority on efforts to maintain national leadership on critical industries while depending on the global marketplace for our other requirements. The results of these studies will be carefully coordinated within the Department, most particularly with Dr. Sega's staff, to ensure maximum synergies among our collective efforts.

Q.3. Are you aware of any systems, subsystems, components, or materials that the United States requires for current or future defense needs that cannot currently be produced domestically?

A.3. The Department procures a wide range of products and services to meet its national defense responsibilities. Sometimes these products, subsystems, components, and materials are procured from foreign sources. DOD generally does not mandate supplier selections to its contractors. We expect our contractors to select reliable, capable suppliers consistent with obtaining best value, encouraging effective competition, and meeting national security requirements. Our prime contractors and first and second tier suppliers indicate they select foreign subcontractors for specific items because those subcontractors offer the best combination of price, performance, and delivery.

The plain fact is that DOD and its contractors have been very conservative in using foreign sources. This reality is born out in a "Study on Impact of Foreign Sourcing of Systems" that we submitted to Congress in October 2001. The study findings showed that less than 2 percent of the subcontracted efforts went to foreign sources, that none of these foreign sources represented a threat to national security, and that the vast majority of the foreign sources were located in NATO-member nations. The study identified only six instances where domestic sources were not then available to compete for items subcontracted to foreign suppliers. These instances were associated with a single source. United States sources are or could be available if needed without significant additional cost, time, and risk.

We know that the U.S. defense industrial base does not have the global monopoly on good ideas and technology innovation. In fact, the smaller scale, the faster pace, and the relatively lower cost of the individual warfighting elements of net-centric systems will provide unique opportunities to allies willing to focus ever-limited

budgetary resources on "niches" that are the key to net-centric solutions.

Q.4. I know that there are a number of DOD programs that attempt to address the issue of maintaining the industrial base necessary to support our national security requirements. Could you quickly list those different activities? Also, could you describe to us how these programs are coordinated within DOD and with other Federal agencies? Who is the overall program coordinator within DOD?

A.4. It is our view that the competitive pressure of the marketplace is the best vehicle to shape and sustain an industrial base that supports our national security requirements. DOD takes action to intervene in that marketplace only when necessary to develop and/or to preserve industrial and technological capabilities essential to defense that the marketplace, left unattended, would not. As the principal customer, DOD research and development and acquisition plans, budgets, evaluations, and decisions play a significant role in shaping the defense industry.

The Under Secretary of Defense for Acquisition, Technology & Logistics has the overarching responsibility to coordinate such programs, working through the Military Departments, the Defense Advanced Research Projects Agency, and also DOD's Small and Disadvantaged Business Utilization organization. Within this overall framework, the DOD also employs several programs to develop or improve defense-critical industrial and technological capabilities, including the authorities of Title III of the Defense Production Act; and the Manufacturing Technology, Small Business Innovative Research, and Technology Transfer programs.

One of our major areas of emphasis is to ensure that barriers to enter the defense business do not discourage innovative, smaller suppliers from offering creative solutions to defense problems. To this end, we have established a clearinghouse within the Office of the Director, Defense Research and Engineering to help the nontraditional suppliers navigate the defense enterprise; and we are developing search engines to help such firms access available DOD information.

Finally, we conduct assessments of selected segments of our industrial base to determine if industrial and technological capabilities are sufficient to meet current and projected defense requirements. We summarize these assessments in our annual industrial capabilities reports to Congress. This year, as I noted in response to an earlier question, we also are conducting studies to identify industrial base needs in light of transformational warfare requirements, highlighting the potential contribution of nontraditional suppliers, both domestic and global.

Q.5. I understand that in the House Armed Services Committee's bill, that we are about to begin conferencing, they established a $100 million Defense Industrial Base Capabilities Fund that would be used to address perceived shortfalls in our domestic industrial base. Have you had a chance to review this legislation?

A.5. Yes, I have had an opportunity to review the legislation.

Q.6. Can this provision be viewed as duplicative to the Defense Production Act or do you think a fund like this would be a valuable tool in addressing some of the industrial base issues we are discussing today?

A.6.: The Defense Industrial Base Capabilities Fund established by section 814 of title VIII, subtitle B of H.R. 1588, is intended to develop capabilities for the production of critical items available only from foreign contractors or from a limited number of U.S. manufacturers. I believe the proposed fund would duplicate many aspects of the current Defense Production Act Title III program. Current Title III authorities give the Department a powerful tool with which it can provide domestic industry with a variety of financial incentives to either maintain, modernize, or expand an essential domestic defense industrial capability or encourage private industry to undertake the creation of new domestic sources of supply for advanced materials and technology items and accelerate the deployment of new products and manufacturing process technology into and across the U.S. industrial base. The Department has used this program to facilitate the transition of state-of-the-art materials and products from development to production, to strengthen key domestic industrial sectors, and to reduce U.S. dependency on foreign sources for materials and technologies critical to national defense. I believe the House provision would impose unnecessary administrative and staff burdens on the Department without providing any additional benefits.

Q.7. As we go into our conference, I hope that you can give us your views and insights on this language so that we can amend or perfect it so that it can address the industrial base shortfalls that may exist.

A.7. I would urge that this provision, and all of the other provisions of Subtitle B of Title VIII of H.R. 1588, be rescinded. The provisions in this subtitle seem to be based on the inaccurate presumption that the U.S. defense industrial base needs to be revitalized and that U.S. defense systems are vulnerable due to foreign dependencies. Collectively, I believe the provisions likely would have a catastrophic impact on the Department's ability to meet its national security responsibilities. DOD weapons programs would have to be reexamined and restructured to eliminate foreign content, thereby significantly increasing costs and delaying fielding dates, degrading military capabilities, reducing interoperability, and inviting trade retaliation from allies. U.S. defense contractors would be required to expend hundreds of millions of dollars to replace non-U.S. machine tools. Burdensome and expensive reporting requirements would be placed on tens of thousands of U.S. contractors, subcontractors, and offerors to collect proprietary information, the primary purpose of which would be to establish a baseline to eliminate non-U.S. suppliers and machine tools. These provisions also would have the unintended consequence of discouraging U.S. suppliers from participating in the defense business.

RESPONSE TO ORAL QUESTION OF SENATOR SHELBY FROM DENISE SWINK

Q.1. During the hearing the following question was asked: Could you now or for the record provide the Committee the Energy Department's understanding of its role and responsibilities in implementing the Defense Production Act and what criteria you use at the Department of Energy in determining that a threat to national defense has materialized warranting its intervention in crises like that which affected California?

A.1. A comprehensive discussion of the authorities contained in the Defense Production Act of 1950 (DPA) and of how they might be used in responding to energy emergency situations is contained in a 1982 Department of Justice memorandum of law for the President which was submitted to the Congress in compliance with the Energy Emergency Preparedness Act of 1982 (Public Law 97–229). The memorandum's discussion of the DPA remains valid today. As the Justice Department's memorandum makes clear, the question of when the authorities conferred on the President by the DPA can be used in responding to energy crises is highly fact-dependent.

Title I of the Defense Production Act contains two separate and distinct "priority contracting" provisions authorizing the President to require performance on a priority basis of contracts or orders in certain circumstances. The first authorizes action to "promote the national defense." The second authorizes action to "maximize domestic energy supplies" as a general matter, not only when defense activities are directly implicated. The Secretary of Energy has been delegated authority by the President, through Executive Order Numbers 11790 and 12919, to exercise the Title I priority contracting authorities.

The first provision, section 101(a) of Title 1, deals with priority contracting to "promote the national defense." Under section 101(a), the Secretary may require performance on a priority basis of contracts for energy supplies that the Secretary deems "necessary or appropriate to promote the national defense." This authority could be used, for example, to require the acceptance of and priority performance under contracts relating to production, delivery or refining of petroleum products or other forms of energy, including natural gas, to meet the energy needs of the Department of Defense and its contractors. It also could be used to facilitate transportation of energy supplies to meet national defense needs, for example, by requiring pipelines, marine terminals, and other facilities to perform energy transport contracts necessary to meet the priority needs of the Defense Department and its contractors.

In determining what the national defense requires, it is clear the Secretary may consider the potential impact of energy shortages. In the Energy Security Act of 1980, Congress specifically designated energy as a "strategic and critical material" within the meaning of the Defense Production Act and also added language to the DPA Declaration of Policy that establishes a link between assuring the availability of energy supplies and maintaining defense preparedness. The Defense Production Act's Declaration of Policy states:

> [I]n order to ensure national defense preparedness, which is essential to national security, it is necessary and appro-

priate to assure the availability of domestic energy supplies for national defense needs.

The second priority contracting provision in Title I of the Defense Production Act, section 101(c), is linked to facilitating projects that maximize domestic energy supplies. Section 101(c) authorizes the Department of Energy to require priority performance of contracts for goods and services for projects which would maximize domestic energy supplies, if the Secretaries of Energy and Commerce make certain findings, including that the good or service is scarce and critical and essential to maximizing domestic energy supplies. For example, if the President directed a drawdown of the Strategic Petroleum Reserve and if there was a significant breakdown in the Strategic Petroleum Reserve facilities, that could be the type of circumstance where the Department might have to rely upon section 101(c) to obtain equipment needed to bring the facility back online as promptly as possible. Absent the Defense Production Act, it might be impossible to persuade vendors to put our order at the head of the line for fear of third-party contract liability, even if they were otherwise willing to cooperate with the Department in the interests of the country.

Section 101(c) also might be used alone, or in tandem with section 101(a), to assist in restoring critical energy infrastructures following widespread terrorist attacks or a natural disaster, for example, to assist electric utilities, oil companies or other energy companies in obtaining equipment needed to repair damaged facilities, or to provide fuel oil or natural gas to electric utilities to ensure continued supply of electricity. Section 101(c) was used in the late 1970's and again in the 1980's and early 1990's to facilitate petroleum production development of the Alaskan North Slope.

In responding to the actual and threatened interruptions of natural gas supplies in California in January 2001, the Department relied on both section 101(a) and 101(c), as a complement to the emergency provisions of the Natural Gas Policy Act, in its orders to Pacific Gas and Electric Company and a number of natural gas suppliers to assure the continued supply of natural gas necessary for continued availability of electric service in the central and northern regions of California. Defense considerations were an important factor in the invocation of the DPA 101(a) authority. PG&E's customer base in northern and central California includes a number of defense (including "space," as the term "defense" is defined in the Defense Production Act) installations and defense contractors that use natural gas and electricity and that clearly would be adversely impacted by interruptions of natural gas service. Continuity of supply to these facilities was threatened in the same fashion as other industrial natural gas consumers in PG&E's service territory. In short, it was clear that a host of serious problems likely would have resulted if significant portions of California were to lose their natural gas supply and that potential harm to the national defense was an important part of this myriad of concerns.

In determining to rely on section 101(c), as well as 101(a), the Department recognized that in the situation existing in California in mid-January 2001, natural gas supplies would have become acutely scarce had the withholding by PG&E's suppliers continued and expanded to more suppliers than those that already had termi-

nated deliveries. Moreover, continuity of natural supply was critical and essential in PG&E's service area to electric energy generation, petroleum refining, and maintaining energy facilities. These factors seemed directly to bear on the terms of section 101 (c) of the Defense Production Act relating to continuity of energy production and maximizing domestic energy supplies.

RESPONSE TO ORAL QUESTION OF SENATOR ALLARD FROM DENISE SWINK

Q.1. During the hearing the following question was asked: If a shortage of electricity suddenly develops for one of our major production manufacturers in California—and California has a number of them, and something were to happen to the lines, preventing the rebuilding of those lines or perhaps building an alternative line system, do you feel that you have the authority to override existing law, for example, the Endangered Species Act? Would the ESA or other laws prevent you from reconstructing the line? I think you could override existing law if it were a local community concern, but for something that would be a national law like the Endangered Species Act, could you override that to reconstruct lines if our national security were at stake?

A.1. The Defense Production Act does not contain any authority which might be used to override the requirements of laws such as the Endangered Species Act, which you noted possibly could impede rapid restoration of damaged critical infrastructures. The Endangered Species Act does include a process, in Section 7 of the Act, for seeking an exemption from the Act's requirements regarding threatened or endangered species. However, the exemption process is lengthy, and it does not appear to be useful as a basis for an expedited override of the Act's requirements.

PREPARED STATEMENT OF SENATOR JOSEPH I. LIEBERMAN

Mr. Chairman, I want to compliment you and the Banking, Housing and Urban Affairs Committee for holding a hearing on this very important issue. I share your concerns about the loss to the U.S. economy of most of our high-end semiconductor chip manufacturing sector, the threat of the subsequent loss of the semiconductor research and design sectors, and the resulting serious national security implications. And I would like to add a few thoughts on the subject to your discussion.

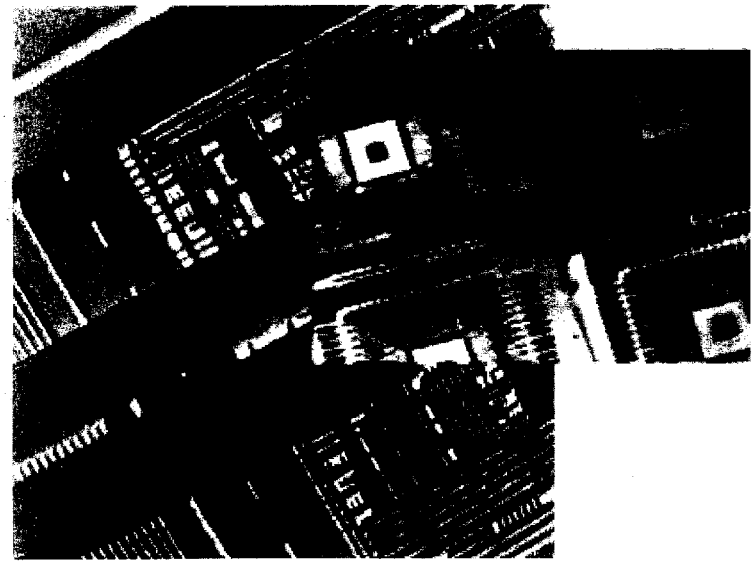
The composition of the global semiconductor industry has changed dramatically in recent years. East Asian countries are leveraging these changing market forces through their national trade and industrial policies to drive a migration of semiconductor manufacturing to that region, particularly China, through a large array of direct and indirect subsidies to their domestic semiconductor industry. If this accelerating shift in manufacturing overseas continues, the U.S. will lose the ability to reliably obtain high-end semiconductor integrated circuits from trusted sources, at a time when these advanced processing components are becoming a crucial defense technology advantage to the U.S. Experts in the military and intelligence sectors, have made clear that relying on semiconductor integrated circuits fabricated outside the United States (for example in China, Taiwan, and Singapore) is not an acceptable national security option. The economic impact in the United States of the loss of manufacturing, research, and design has equally serious implications.

I would like to direct the Committee's attention to the White Paper that I am asking be included in the Senate Banking Committee Hearing Record, which outlines the fact that this off-shore migration of high-end semiconductor chip manufacturing is a result of concerted foreign government action, through an effective combination of government trade and industrial policies which have taken advantage of opportunities resulting from market forces and changes in the semiconductor industry. This White Paper lists a number of possible actions the defense and intelligence communities should consider to prevent this serious loss of U.S. semiconductor manufacturing and design capability. I have also requested that the Department of Defense, the National Security Agency, and the National Reconnaissance Office submit a report and plan of action to respond to this impending national security threat. I have asked that this report provide an analysis of the semiconductor manufacturing issues that relate to defense and national security, as well as an analysis of the potential solutions that are discussed in the White Paper. I hope that the report will detail the steps that will be taken to counteract this loss of critical components for U.S. defense needs, as well as a timetable for the implementation of such steps. I hope that the Banking Committee could consider similar steps. I note that the Armed Services Committee Report on the bill we passed yesterday requests similar information.

I hope that we can act promptly to avoid a potential national security crisis in terms of reliable access to cutting edge technology necessary to the critical defense needs of our country. The loss goes beyond economics and security. What is at stake here is our ability to be preeminent in the world of ideas on which the semiconductor industry is based. A prompt, concerted effort by the defense and intelligence community in cooperation with industry can reverse this trend of off-shore migration of manufacturing, research, and design that is now under way and that will become essentially irreversible if no action is taken in the next few months.

June 2003

White Paper: National Security Aspects of the Global Migration of the U.S. Semiconductor Industry



Joseph I. Lieberman
Ranking Member
Airland Subcommittee
United States Senate
Armed Services Committee

JOSEPH I. LIEBERMAN
CONNECTICUT

COMMITTEES:
ARMED SERVICES
ENVIRONMENT AND PUBLIC WORKS
GOVERNMENTAL AFFAIRS
SMALL BUSINESS

United States Senate
WASHINGTON, DC 20510–0703

SENATE OFFICE BUILDING
WASHINGTON, DC 20510
(202) 224-4041

STATE OFFICE:
ONE CONSTITUTION PLAZA
7TH FLOOR
HARTFORD, CT 06103
860-549-8463
TOLL FREE: 1-800-225-5605

INTERNET ADDRESS:
senator_lieberman@lieberman.senate.gov

HOME PAGE:
http://lieberman.senate.gov

June 2, 2003

The Honorable Donald H. Rumsfeld
Secretary of Defense
1000 Defense Pentagon
Washington, DC 20301-1000

Dear Secretary Rumsfeld:

I am writing to you to express my concern about the loss to the U.S. economy of the high-end semiconductor chip manufacturing sector and the resulting serious national security implications. I would like to direct your attention to the White Paper that accompanies this letter, which outlines the fact that this migration of high-end chip manufacturing to East Asian countries, particularly China, is a result of concerted foreign government action, through a large array of direct and indirect subsidies to their domestic semiconductor industries, exacerbated by changing market conditions. This offshore shift in semiconductor manufacturing is occurring at a time when these components are becoming a crucial defense technology advantage to the United States, due to the present and future needs of advanced processors in the defense and intelligence communities. This White Paper lists a number of possible actions the defense and intelligence communities should consider to prevent this serious loss of U.S. semiconductor manufacturing and design capability.

I request that the Department of Defense submit to me a report and plan of action to respond to this impending national security threat. This report should provide an analysis of the semiconductor manufacturing issues that relate to defense and national security, as well as an analysis of the potential solutions that are discussed in the White Paper. The report should also detail the steps that will be taken to counteract this loss of critical components for U.S. defense needs, as well as a timetable for the implementation of such steps. I request your immediate attention to this matter and your timely response within 6 months.

Sincerely,

Joseph I. Lieberman
UNITED STATES SENATOR

cc: Lt. Gen. Michael V. Hayden
Peter B. Teets

Introduction

The U.S. is facing an imminent threat to national security as a result of foreign government actions that have capitalized on the changing composition of the semiconductor industry. Our concern is the loss to the U.S. economy of the high-end semiconductor manufacturing sector, the potential subsequent loss of the semiconductor research and design sectors, and the grave national security implications that this would entail. East Asian countries are leveraging market forces through their national trade and industrial policies to drive a migration of semiconductor manufacturing to that region, particularly China. If this accelerating shift in manufacturing overseas continues, the U.S. will lose the ability to reliably obtain high-end semiconductor integrated circuits from trusted sources. This will pose serious national security concerns to our defense and intelligence communities. Historically, shifts in manufacturing result over time in the migration of research and design capabilities. This is especially true of leading-edge industries such as advanced semiconductor manufacturing, which requires a tight linkage and geographic proximity for research, development, engineering and manufacturing activities. The economic impact in the U.S. of the loss of manufacturing, research and design has equally serious implications.

The Pentagon's Advisory Group on Electron Devices (AGED)[1] has warned that the Department of Defense (DoD) faces shrinking advantages across all technology areas due to the rapid decline of the U.S. semiconductor industry, and that the off-shore movement of intellectual capital and industrial capability, particularly in microelectronics, has impacted the ability of the U.S. to research and produce the best technologies and products for the nation and the war-fighter. This global migration has also been discussed in a recently released National Research Council/National Academy of Sciences report on the U.S. semiconductor industry[2], which details the significant growth in foreign programs that support national and regional semiconductor industries. This support is fueling the structural changes in the global industry, and encouraging a shift of U.S. industry abroad.

Critical National Security Applications

Studies have shown that numerous advanced defense applications now under consideration will require high-end components with performance levels beyond that which is currently available. These cutting-edge devices will be required for critical defense capabilities in areas such as synthetic aperture radar, electronic warfare, and image compression and processing.[3] Defense needs in the near future will also be focused

---

[1] C. Kirkpatrick et al, Proceedings of the Advisory Group on Electron Devices (AGED) National Technology Leadership Forum, Microelectronics Case Study, September 24, 2002; Summarized in *Manufacturing and Technology News*, vol. 10, n. 10 (Friday May 16, 2003).

[2] C. Wessner, Ed., *Securing the Future: Regional and National Programs to Support the Semiconductor Industry*, Board on Science, Technology and Economic Policy, National Research Council, 2003.

[3] B. Gilbert et al., "Assessment of Signal Processor Architecture and Integrated Circuit Device Requirements for Computing at the Trillion Device Level (DARPA/ETO Advanced Microelectronics Program, Report 1)", Special Purpose Processor Development Group, Mayo Foundation, 1997. The report lists numerous applications of advanced semiconductor designs and the vital defense needs for chips with performance beyond present capabilities.

on very high performance for missile guidance ("fire and forget"), signal processing, and radiation-hardened chips to withstand the extreme environments of space-based communications and tactical environments.[4] There are profound needs for much more advanced onboard processing capabilities for unmanned aerial vehicles undertaking both reconnaissance and attack missions, for cruise missiles and ballistic missile defense, and for the infrastructure that connects these systems.[5,6] As the military transforms to a "network-centric" force in the future, the DoD's Global Information Grid will demand extremely high-performance computation to overcome the technical barriers to a seamless communication network between terrestrial 24 and 48 color optical fiber and satellite platforms transmitting in 100+ Mbps wireless.[7] Such performance will also be necessary for "last-mile" extremely high-speed connectivity to platforms and to the soldier in the field, as well as for the high-speed encryption requirements for a secure communication system.[8] Intelligence agencies will increasingly need the most advanced chips for very high-speed signal processing and data analysis, for real-time data evaluation, for sensor input and analysis, and for encryption and decryption.[9]

As studies for DARPA have indicated, the next several generations of integrated circuits, which emerge at roughly eighteen-month intervals as predicted by Moore's Law, offer the potential for exponential gains in defense war-fighting capability.[10] It is erroneous to believe that future U.S. war-fighting capability will be derived from chips one or two generations behind current state-of-the-art technology. Many of the integrated circuits and processing platforms that are coming in to use, and which are at the heart of DoD defense strategies, are clearly at the cutting edge in their capabilities.

With the dramatic new capabilities enabled by rapidly evolving chip technologies, DoD and the intelligence agencies will need to be first adopters of the most advanced integrated circuits, and will be increasingly dependant on such chips for a defense and intelligence edge. If the ongoing migration of the chip manufacturing sector continues to East Asia, DoD and our intelligence services will lose both first access and assured access to secure advanced chip-making capability, at the same time that these components are becoming a crucial defense technology advantage. Informed elements of the intelligence community therefore have made clear that relying on integrated circuits fabricated outside the U.S. (e.g. in China, Taiwan and Singapore) is not an acceptable national security option.

---

[4] J. Egan, Proceedings of the Space Environmental Effects Working Group, NRO, November 4-7 2002.
[5] L. Cerny, "Future Air Force Requirements for Receiver and Exciter Component Initiatives on Aerospace Platforms". Proceedings of the DARPA/Defense Science Research Council (DSRC) Conference "National Security Issues Associated with Low Volume Fabrication of Integrated Circuits in High Volume First-Tier Fabrication Facilities", December 4-5 2002.
[6] Kirkpatrick, *op.cit.*
[7] C3I/CIO [DoD], "Implementing the Global Information Grid Architecture – Power to the Edge", (Jan. 2003).
[8] *Ibid.*
[9] R. Price, "NSA's Leading Edge Microelectronics Foundry Requirements", Proceedings of the DARPA/DSRC Conference "National Security Issues Associated with Low Volume Fabrication of Integrated Circuits in High Volume First-Tier Fabrication Facilities", December 4-5 2002.
[10] Gilbert, "Assessment of Signal Processor…" *op. cit.*

Economic Importance and Changes in the Semiconductor Industry

The influence of the semiconductor industry to the U.S. economy in the last decade is difficult to overstate. The U.S. semiconductor sector currently employs 240,000 people in high-wage manufacturing jobs, and had sales totaling $102 billion in the global market in 2000 (50% of total worldwide sales). In 1999, this sector was the largest value-added industry in manufacturing in the U.S. – larger than the iron, steel and motor vehicle industries combined.[11] The productivity growth in the U.S. in the 1990s was due in significant part to the computer production and advances in information technology that depended on the semiconductor industry.[12] The economic implications of the potential migration of high-end semiconductor chip research, design and manufacturing to off-shore facilities has the potential to cause (and, it could be argued, is already causing) long-term damage to the economic growth of this country, with corresponding national security ramifications.

A fundamental change in the semiconductor industry has been, in very simplified form, that the price to performance curve has reduced revenue in the industry dramatically over the last decade. During the early 1960's, and continuing until about 1994, the compound annual growth rate in revenue of the industry was 16%. From 1994 to the present, the growth rate has been approximately 8%.[13] This situation is combined with the very large costs associated with the development of new 300mm fabrication facilities ("fabs"), as well as the increasing complexity and cost of research and design as the industry must develop methods other than the traditional scaling methods (making all aspects of the chips smaller and smaller) in order to increase performance. These factors, and the current recession, are driving the industry to consolidations. As those consolidations take place, new business models, such as fabless companies and consortia, come into play.

A Process Driven by Government Policy in Reaction to Market Forces

The principal reason that China is becoming a center of semiconductor manufacturing is the effective combination of government trade and industrial policies which have taken advantage of opportunities resulting from market forces and changes in the semiconductor industry. In a sector characterized by rapidly increasing capital costs and the need to have access to large, rapidly growing markets, such as China's, Chinese government policies and subsidies can decisively change the terms of international competition. The impact of these incentives is accentuated as a result of the multi-year recession, which has sharply reduced revenue and increased the competition for markets to absorb the industry's characteristic high fixed costs. Government policies in Taiwan were already drawing new manufacturing capability, as well as tool and equipment makers, to its science and technology park complex. However, in the last two years,

---

[11] C. Wessner, "Sustaining Moore's Law and the US Economy", Computing in Science and Engineering, January-February 2003

[12] D. Jorgenson and K. Stiroh, "Raising the Speed Limit: U.S. Economic Growth in the Information Age", in *Measuring and Sustaining the New Economy*, National Research Council, 2002. See also S. Oliner and D. Sichel, "The Resurgence and Growth in the late 1990s: Is Information Technology the Story?" J. Economic Perspectives, v.14, no.4, 2000.

[13] E. Ross, Future Fab Int., Gartner Dataquest 2001

Chinese policy has resulted in a sharp upsurge in construction of fabrication facilities in that country, with plans for a great many more.[14]

The U.S. high-tech industry has been in a recession the last two years, with sharply reduced sales and severe losses. The number of state-of-the-art U.S. chip manufacturing facilities is expected to sharply decrease in the next 3-5 years to as few as 1-2 firms that now have the revenue base to own a 300mm wafer production fab, and likely less than a handful of firms.[15] Although the U.S. currently leads the world semiconductor industry with a 50% world market share, the Semiconductor Industry Association estimates that the U.S. share of 300mm wafer production capacity will be only approximately 20% in 2005, while Asian share will reach 65% (only 10% of this from Japan).[16] The remaining state-of-the-art U.S. chip-making firms face great difficulty in attaining the huge amounts of capital required to construct next-generation fabs. This situation stands in contrast to that in China. To ensure that they develop the ability to build the next-generation fabrication facilities, the Chinese central government, in cooperation with regional and local authorities, has undertaken a large array of direct and indirect subsidies to support their domestic semiconductor industry. They have also developed a number of partnerships with U.S. and European companies that are cost-advantageous to the companies in the short-term. The Chinese government is successfully using tax subsidies (see below) to attract foreign capital from semiconductor firms seeking access to what is expected to be one of the world's largest markets. This strategy, which is similar to that employed by the European Union in early 1990s, is a means of inducing substantial inflows of direct investment by private firms. Indeed, much of the funding is Taiwanese, driven by the tax incentives and their need for market access, especially for commodity products such as DRAMs. The strategy does not rely on cheaper labor, as that is a small element in semiconductor production.

The Chinese are, however, able to increasingly draw on substantially larger pools of technically trained labor as compared to the U.S., from the large cohorts of domestic engineering graduates.[17] Importantly, the output of Chinese universities is supplemented by large numbers of engineers trained at U.S. universities and mid-career professionals who are offered substantial incentives to return to work in China. These incentives for scientists and engineers, which include substantial tax benefits, world-class living facilities, extensive stock options taxed at par value, and other amenities, are proving effective in attracting expatriate labor. They also represent an important new dimension in an accelerating global competition for highly skilled IT labor.[18]

The immediate and most powerful incentives for a highly leveraged industry are the direct and indirect subsidies, including infrastructure needed for state-of-the-art fabs, offered by the government. For example, the Chinese central government has undertaken indirect subsidies in the form of a substantial rebate on the value-added tax (VAT)

---

[14] C. Wessner, *Securing the Future... op. cit.*

[15] W.Siegle, Chief Scientist, AMD, "Deconstructing the Computer" citing Gartner,McKinsey analysis, Feb. 28, 2003

[16] Semiconductor Industry Assoc.(D.Hatano), "Fab America – Keeping U.S. Leadership in Semiconductor Technology Strong" pp. 9,15 (citing International Sematech data), May 9, 2003

[17] *Ibid.*

[18] T. Howell, "Competing Programs: Government Support for Microelectronics," in *Securing the Future: Regional and National Programs to Support the Semiconductor Industry*, National Research Council, 2003.

charged on Chinese-made chips.[19] While many believe this is an illegal subsidy under GATT trade rules, the impact of the subsidy on the growth of the industry may well be irreversible before—and if—any trade action is taken. There are a variety of other documented measures adopted by the Chinese government.[20] The development of special government funded industrial parks, the low costs of building construction in China as compared to the U.S., and their apparent disinterest in the expensive pollution controls required of fabrication facilities in the U.S. all represent further hidden subsidies. The aggregate effect of these individual "subsidies" may be only a few tens of percentage points of decrease (literally, only 20-30%) in the manufacturing costs of the chips, but in such a cost-driven industry, this difference appears to play an important role in driving the entire offshore migration process for these critical components. Essentially, these actions reflect a strategic decision and represent a concerted effort by the Chinese government to capture the benefits of this enabling, high-tech industry, and thereby threatening to be a monopoly supplier and thus in control of pricing and supply.

It is therefore important to understand that the current shift in manufacturing capacity to China is not entirely the result of market forces. It is equally important to recognize that even if some residual U.S. manufacturing capacity remains after this large-scale migration takes place, the shift of the bulk of semiconductor manufacturing will severely constrain the ability of the U.S. to maintain high-end research and development capabilities. Such directed government support has proven itself to be a severe threat to U.S. industry. For a variety of reasons, the U.S. government has never been able to provide such coordinated support. The results of this deficit have been devastating. The idea that national governments cannot contribute to the health and direction of such a "consumer based" industry is unfounded, particularly given the national security implications.

A Plan of Action

The stakes are real. The time for the country to react effectively is limited. There are things that can be done. If these steps are taken in a timely fashion, the collective impact of the measures will be more powerful in maintaining reliable first access to high-end semiconductor chip design and manufacturing in the U.S. These could include:

- **Active Enforcement of GATT trade rules**. Currently the Chinese government is providing a 14% rebate on VAT to customers who buy Chinese-made semiconductor chips, essentially providing a large subsidy of their domestic industry in clear violation of GATT rules.[14] Thus, U.S.-made chips would pay a 17% VAT, and Chinese-made chips would pay a 3% VAT. Given the tight price competition of chips and the growing importance of the Chinese chip market, this is a very significant step towards ending U.S. production. It is important to ensure that GATT rules are properly enforced in this instance, and not allow government imposed advantages for foreign competitors to damage U.S. manufacturers. DoD should insist that the U.S.

[19] Letter from the Semiconductor Industry Association to the United States Trade Representative Robert Zoellick, dated December 12, 2002.
[20] T. Howell, "Competing Programs..." *op cit.*

Trade Representative undertake prompt bilateral negotiations to remove these measures.

- **Joint production agreements**. With the current downturn in the high-tech sector, it is probable that many chip manufacturing companies will be unable to acquire the necessary capital to invest in the $3+ billion required for new 12-inch wafer advanced chip fabrication facilities, which are radically increasing in cost. Title 15 of the U.S. code (sections 4301 through 4305) gives private technology companies facing global competition the ability to enter into joint production ventures with a waiver of certain anti-trust laws. Under this provision, a group of companies could consolidate assets into a small number of chip fabrication plants, which could be jointly run by a cooperative of two to five companies. This cooperative investment in a fab could sharply reduce the risk and cost to each participating firm, and their agreements to purchase chips from the new fab could be the basis to obtain financing. The Department could encourage this kind of venture and offer contracting opportunities to meet DoD's own chip-making needs, thus being an additional guarantor of demand.
- **Business models**. A variety of creative business models exist which can help the Department and intelligence agencies obtain improved access to advanced manufacturing lines. The Department and intelligence agencies can enter into agreements with a number of U.S.-based chip manufacturers within the context of one of these models to the mutual benefit of all parties. DOD should contract with selected U.S. fabs for long-term access, using any one or more types of contractual vehicles (such as "take or pay"). DoD should also direct its aerospace end-users to employ the services of these domestic fabs. While DoD, NSA and NRO are only a very small piece of the semiconductor market, they can still use their residual contracting power to encourage retention of U.S. advanced chip manufacturing in a coordinated way. DoD and the intelligence agencies must pursue this avenue of creative government-industry cooperation, and must do so soon, as time is not on the side of the U.S. industrial base or the U.S. Government. It is important to note, however, that even a much stronger and better coordinated effort in this area alone will not resolve DoD's problems because over time without a strong domestic commercial semiconductor industrial base it will become very difficult for DoD to retain access to state of the art chips. DoD requires an industry with technology leadership, not just its own short term supply fix.
- **Encourage tax incentives for U.S. investment**. As the next generation of chip fabrication facilities can cost at least $3 billion per plant, the manufacturing sector will require assistance in acquiring the investment capital necessary to develop the manufacturing capabilities for cutting edge semiconductor chips. DoD and the intelligence agencies should work with industry and propose targeted tax incentives, possibly in coordination with state and local government financing, to assist in meeting these investment costs. As noted above, these efforts cannot be delayed into the out-years, as time is of the essence.

- **Increase Science and Engineering Graduates.** The unprecedented technical challenges faced by the industry will require technically trained talent to provide solutions to these problems. In order to effectively compete against the concerted effort by the Chinese to capture the semiconductor industry, it will be necessary to counter the growing disparity of trained talent in both physical sciences and engineering between East Asia and the U.S.[21] Incentives need to be created for increasing university student training in these fields, in particular, of students who are U.S. citizens. The training over the past two decades of East Asian students in American universities, who increasingly return to their country of origin, is a partial cause of the present situation. Additionally, efforts need to be undertaken to encourage their retention in the U.S. Overall, DoD should focus on programs that increase the number of science and engineering graduates at the B.S. and M.S. level needed to provide the technical capabilities for the semiconductor industry.
- **Increases in Federal Funds for Research and Development (R&D).** Levels of federal funding in the U.S. for research on microelectronics have been steadily decreasing, while at the same time, competitors in Asia and Europe have dramatically expanded public support for semiconductor R&D.[22] This decline in U.S. research support is of particular concern because the industry is increasingly addressing extremely complex technical challenges for which no solution is readily apparent. The following points highlight this need for restoration of funding and describe possible steps that could be taken:
    a. DARPA's annual funding of microelectronics research and development – the principle channel of direct federal financial support in this area – has declined since 1999, and is projected to decline further.[23] DoD should consider restoring this funding.
    b. SEMATECH, the private industry partnership with government which was created to help revive the weakened U.S. industry in 1987 through collaborative research and pooled manufacturing knowledge, was provided with government funds of $100 million per year, fully matched by industry funds. Since 1996, SEMATECH has no longer received any government funding. Originally an entirely U.S. endeavor, SEMATECH has now had to become "international" to remain in operation, thereby destroying its original U.S.-centric focus. DoD should consider alternative mechanisms for cooperative R&D efforts with industry in critical research areas.
    c. In the current harsh financial climate of the U.S. high-tech industry, the private sector will not be able to continue an adequate investment in research and development - there have in fact been widespread anecdotal reports of major decreases in R&D efforts in the U.S. commercial electronics industry. The need is developing for processors based on the next generation of silicon chip technology (referred to as the "90 nanometer" generation), and the U.S. could find

[21] C. Wessner, *Securing the Future… op cit.*
[22] *Ibid.*
[23] C. Wessner, *op cit.*, "Sustaining Moore's Law…"

itself without a domestic manufacturing base, as the research for that technology generation should be under way **now**. The area of non-silicon semiconductors, which offer a level of speed performance exceeding that of silicon components, is clearly under-funded. For example, research is needed on nano-electronics, such as alternatives to silicon CMOS through nanotubes and nanowires. This technology will be important for next-generation military communications and radar systems (operating in consort with advanced silicon processor chips). Here too, the DoD must find ways to assist the U.S. non-silicon semiconductor manufacturing base by further encouraging R&D appropriate to DoD requirements.

d. I urge the Department and intelligence agencies to support increased government funding for R&D of advanced chip technologies, and also to support the development of new DoD-specific chip designs within the aerospace industry, which, like the fabs, are losing their capabilities as the chip designs themselves are increasingly conducted overseas. DoD's decades-long role in the support of such research has diminished in recent years. Rejuvenation of this long-standing DoD role in advanced R&D would help to assure that U.S. industry, to the extent that it can be retained, will lead the future shifts to the most advanced chip technology which DoD will need.

- **Cooperative Research Programs**. Programs such as the Focus Research Center Program (FRCP) under the Microelectronics Advanced Research Corporation (MARCO) seek to overcome the growing challenges companies face in advancing microelectronics technologies through government-industry partnerships that focus on cutting-edge research deemed critical to the continued growth of the industry. The government's share of funding (25%) of this cooperative program has been supported through the Government-Industry Co-sponsorship of University Research (GICUR) program within the Office of Secretary of Defense. The funding targets for this program as outlined in the original ramp-up plan have not been met. In fact, this program has been zeroed out of the administration's FY 2004 budget. DoD should ensure that funding levels for this vital area of government-industry collaborative research be properly supported, and that when U.S. universities are the recipients of such funding, the training of U.S. citizens (in contrast to foreign students) is strongly emphasized.
- **Survey of Trade Practices**. DoD should survey all possible technologies that the Chinese government may be targeting for subsidies that would assist in the transfer of U.S. chip-making and related fields to China, and then develop a list of those subsidies that are in violation of GATT trade rules and seek USTR action For those that are not in violation but nonetheless create a competitive "edge" for China, The Department and the intelligence agencies will need to develop counter strategies. . The focus should aim to strengthen the entire electronics and IT "food chain" – from semiconductor manufacturing equipment to semiconductors to computers and systems. This will require broad interagency coordination and cooperation. It would

probably be necessary to form such a "tiger team" immediately, and to provide that team with the authority and resources to act to stem the deterioration of our defense-critical on-shore infrastructure.

- **The Semiconductor Equipment and Materials Industry**. Over the last decade a fair fraction of US semiconductor tooling and equipments capability has migrated off shore. This has been particularly true of the "high technology" end of the business – advanced lithography. The migration has had a significant impact on our ability to guide and direct development in the chip economy as a whole. For example, when ASML (a Dutch firm) took over SVG-L (our last cutting edge lithography stepper supplier) the personnel base at the former SVG-L site, in part because of the recession, was reduced, and some advanced product development shifted to Europe. Along with the sale of SVG-L, Tinsley, an SVG-L subsidiary, which is the world's premier supplier of aspheric optical components widely used in defense surveillance systems, was also conveyed to ASML. Lithography patent battles that could affect sales and services to U.S. chip makers using equipment from either of these companies are continuing.[24] As another example, it is generally accepted throughout the industry that the photomask is a key gating element in semiconductor development today, and that mask development is one of the largest challenges currently facing the industry. The cost of photomask infrastructure development is currently outstripping available R&D resources by a factor of 4 to 5. A recent SEMATECH study indicated the shortfall at approximately $750 million. Outside the U.S., this shortfall is being met with Government sponsored development activities in hopes of taking over the market. A small number of U.S. merchant mask companies are currently spearheading an effort to establish a pre-competitive R&D activity focused on U.S. mask infrastructure development. The need, supported by SEMATECH, includes advanced tool evaluation and development, along with materials, metrology, and standards activities to improve future photomask manufacturing capability. The goal is to accelerate leading edge photomask infrastructure capability on-shore by building on prior and current mask industry investments. DoD should give full consideration to supporting this effort for a U.S. mask consortium. Overall, the "tiger team" should survey and make recommendations on what can be done to stimulate and grow what is left of the on-shore semiconductor equipment industry, including masks and lithography.

Necessity of Comprehensive Action

If DoD and the intelligence agencies lose commercial advanced chip production capability, off of which they have sharply leveraged over the past two decades to greatly reduce their costs and to improve war-fighting capability, the ability to benefit from such cost-saving relationships will be permanently lost. DoD can attempt to achieve temporary solutions, such as building its own next generation government-owned chip fabrication facility, but this is likely to be both expensive and ineffective. If the best research and

[24] United States International Trade Commission, Investigation Number 337-TA-468

design capability shifts to China along with manufacturing, this approach will not work past the next generation or two of semiconductor chip production. In addition, such temporary solutions are not only unworkable over time if the U.S. wishes to retain the best capability that is required for defense and intelligence needs, but will be far more expensive than the solutions proposed above. This is because the opportunity to leverage off the commercial sector (an approach which the DoD and intelligence community rely upon at present) for new advances and cost savings will be lost. The U.S. policy goal should not be to seek to prevent China from obtaining significant chip-making capability in the very near future. That will happen. The issue is whether the U.S. can improve its competitive position and remove unfair distortions in order to retain significant on-shore manufacturing capacity.

Conclusions and Further Action

A prompt, concerted effort by the defense and intelligence community can reverse this trend of off-shore migration of manufacturing, research and design that is now under way and that will become essentially irreversible if no action is taken in the next few months. I am requesting a report and plan of action from DoD and the intelligence community, based on the steps enumerated above, on how they will act to prevent the national security damage that the loss of the U.S. semiconductor industry will entail.

The loss goes beyond economics and security. What is at stake here is our ability to be pre-eminent in the world of ideas on which the semiconductor industry is based. Much of applied physical science – optics, materials science, computer science, to name a few – will be practiced at foreign centers of excellence. This stunning loss of intellectual capability will impede our efforts in all areas of our society.

I hope that by bringing attention to this matter, we can avoid a potential national security crisis in terms of reliable access to cutting edge technology necessary to the critical defense needs of our country. We are being confronted by one of the greatest transfers of critical defense technologies ever organized by another government and the time for action is overdue.