

**THE ROLE OF DTSA IN APPROVING CRITICAL  
TECHNOLOGY EXPORTS**

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**HEARING**  
BEFORE THE  
COMMITTEE ON  
GOVERNMENTAL AFFAIRS  
UNITED STATES SENATE  
ONE HUNDRED FIFTH CONGRESS  
SECOND SESSION

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JUNE 25, 1998  
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# THE ROLE OF DTSA IN APPROVING CRITICAL TECHNOLOGY EXPORTS

THURSDAY, JUNE 25, 1998

U.S. SENATE,  
COMMITTEE ON GOVERNMENTAL AFFAIRS,  
*Washington, DC.*

The Committee met, pursuant to notice, at 10:35 a.m., in room SD-342, Dirksen Senate Office Building, Hon. Fred Thompson, Chairman of the Committee, presiding.

Present: Senators Thompson, Cochran, and Torricelli.

## OPENING STATEMENT OF CHAIRMAN THOMPSON

Chairman THOMPSON. The Committee will come to order, please.

We are having a succession of votes, two more votes, with 10-minute intervals. I expect my colleagues will be coming in shortly and we will have to adjourn shortly. We will have to go back and forth a bit, but I think we ought to make what time that we can.

In recent weeks, Congress has begun examining the effects of allowing U.S. satellite makers to launch communication satellites on rockets built by the People's Republic of China. The principal question posed thus far is, have the launches benefitted China's military capability and unacceptably harmed our national security interests?

In today's hearings, we are stepping back from the specifics of individual satellite cases in order to look at the crucial process by which our government licenses the export of so-called "dual-use" items. Dual-use items are products and know-how that have both commercial and military applications. Communications satellites are one example, but there are many others, including supercomputers, advanced composite materials, and high precision machine tools.

Focusing for a moment on supercomputers, the Committee heard testimony yesterday from the Directors of the CIA and the NSA about threats to American computer security. The CIA and NSA described vividly the increased likelihood that terrorists and nation states will use information technologies as weapons of war and terror. The supercomputer technology we transfer today may become the same technology that enables a foreign government to develop strong encryption or, even worse, break our encryption codes and wreak havoc on our Nation's computer systems.

Today, we will hear from Defense Department officials about the Department's important role in the dual-use licensing process. The Defense Department vests its responsibility for these matters in a

small agency called the Defense Technology Security Administration, commonly known by its acronym, DTSA.

DTSA has the important role of determining whether licensing the export of particular dual-use items would be harmful to our national security interests. DTSA brings to the licensing process the views of our fighting forces who, at the end of the day, have to live with any military benefits other countries might obtain from dual-use technologies.

As we will learn today, not everyone is happy about the job that DTSA does and with the dual-use process generally. Some believe that the current licensing process is flawed because it discounts our national security interests too much in favor of promoting exports.

As we will also learn today, the Defense Department plans to reorganize DTSA, in what amounts to a demotion for DTSA within the Defense Department hierarchy.

This is a development that troubles me deeply. Because it is so important for Congress to understand how DTSA and the dual-use licensing process really works, the Committee is breaking with tradition a little bit today. To discuss government programs and operations, we normally hear just from high-ranking political appointees, as witnesses. Well, we have one of those today. We also have a working-level career official who deals with dual-use licensing applications every day, making judgments on whether to recommend approving or denying such licenses.

This mix of perspectives ought to help the Committee parse the issues before us, which include: How the dual-use license review process within DTSA works; how DTSA and national security concerns fit within the broader interagency review process; and how dual-use technologies can benefit the military capabilities of foreign countries and simultaneously harm our military capabilities.

We have no other Members with us yet today. We will go ahead and proceed with Dr. Leitner.

Dr. Leitner, thank you for being here with us today and if you do not mind, stand and raise your right hand.

[Witness sworn.]

Dr. Leitner, do you have a statement to make to the Committee? First of all, identifying yourself and setting forth your background and, of course, your position there at DTSA.

**TESTIMONY OF PETER M. LEITNER,<sup>1</sup> SENIOR STRATEGIC TRADE ADVISOR, DEFENSE TECHNOLOGY SECURITY ADMINISTRATION**

Mr. LEITNER. I would like to thank you for inviting me today. I was stricken yesterday by some sort of malady that has taken over my throat.

Chairman THOMPSON. I hope it does not feel as bad as it sounds.

Mr. LEITNER. It does not feel bad at all; it just sounds awful, but we will continue.

Chairman THOMPSON. All right. Just do the best you can. If you need to take a break at any time, let us know.

Mr. LEITNER. Thank you.

<sup>1</sup>The prepared statement of Dr. Leitner appears in the Appendix on page 51

Mr. Chairman, and Members of the Committee, I am honored to appear before you today to discuss the transfer of so-called dual-use technologies to potential military adversaries and countries engaged in nuclear, chemical, biological and missile proliferation.

I would like to state for the record that I am appearing here today in response to a subpoena and not as a spokesman for DoD, DTSA or the U.S. Government.

For the past 12 years, I have been a senior strategic trade advisor within DoD's Defense Technology Security Administration and I have served as international negotiator for export controls over machine tools, controllers, robots, industrial equipment, software, and navigation and guidance equipment of various kinds. I was also the chairman and head of a U.S. delegation to the Paris-based eight-country study group on Advanced Materials for Weapons Systems and the study group on Defense Production Technology and Equipment.

Chairman THOMPSON. Dr. Leitner, excuse me, but I understand your wife is here with you.

Mr. LEITNER. Yes, sir.

Chairman THOMPSON. There was some discussion, I understand, with the staff about having her read your statement and saving your voice for questions. Would that be a more appropriate thing to do, do you think?

Mr. LEITNER. I think it will be a lot clearer.

Chairman THOMPSON. I have difficulty understanding what you are saying.

Mr. LEITNER. That is fine.

Chairman THOMPSON. Mrs. Leitner, would you mind doing that? This is one of those rare opportunities, Mrs. Leitner, where you get to testify but he is still the one under oath. [Laughter.]

Mrs. LEITNER. That is right.

Chairman THOMPSON. And he is swearing to whatever you say.

Mrs. LEITNER. He can pinch me if I say something wrong.

Chairman THOMPSON. All right. Well, pull the microphone to you closely, if you would.

Why don't you start with: "For the past 12 years."

Mrs. LEITNER. For the past 12 years, I have been a senior strategic trade advisor within DoD's Defense Technology Security Administration and I have served as international negotiator for export controls over machine tools, controllers, robots, industrial equipment, software, and navigation and guidance equipment of various kinds. I was also the chairman and head of a U.S. delegation to the Paris-based eight-country study group on Advanced Materials for Weapons Systems and the study group on Defense Production Technology and Equipment.

In addition, I have been a licensing officer overseeing exports to various proscribed countries including China, Libya, Iraq, former Warsaw Pact countries, Iran and India. Currently, I am DoD's representative to the Subcommittee on Nuclear Export Controls (SNEC). My tenure has given me the opportunity to witness the birth, development, maturity and premature death of DoD's credible role as the guardian of U.S. technology security.

Let me state up front that over the past 6 years the formal process to control exports of dual-use items has failed its stated mis-

sion—to safeguard the national security of the United States. On several levels, what passes for an export control system has been hijacked by longtime ideological opponents of the very concept of export controls. Six years ago, opponents of export controls were granted direct responsibility for managing the Department of Defense's role in this important process. DoD has suffered the greatest damage. Unfortunately, the wrecking ball is still swinging, and on October 1, 1998, it will level the last vestiges of DoD's role in the process.

Through a tireless campaign, the opponents of export controls have managed to destroy the 16-nation Coordinating Committee on Export Controls (CoCom) and decontrol vast arrays of critical military technology, rewire the U.S. domestic export controls process so that it is structurally unsound and unable to safeguard our security, and erect a series of ineffectual domestic regulations and international working groups designed to project a false impression of security, deliberation and cooperation. This Potemkin Village has been constructed to deceive both the Congress and the American people and lull us all into a false sense of security while shortsighted business interests line their pockets at the expense of future generations of American soldiers and citizens alike.

Mr. Chairman, the single point of greatest failure in maintaining a credible export control system was the neutering of the Department of Defense's traditional role as the conservative anchor. First, DoD's key staff were effectively removed from the chain of command and the decision-making process within DoD. DoD abandoned its traditional role and instructed DoD employees to side with the Commerce Department and isolate the State Department and the Arms Control and Disarmament Agency (ACDA) on many issues.

The campaign to isolate DTSA began in earnest with the arrival of David Tarbell as the director of DTSA. DTSA personnel were cut off from most technology security-related activities in the Department of Defense. Whereas DTSA was once the linchpin for these issues within the department, it was quickly marginalized by its own leadership. To clamp down this quarantine, DTSA management instructed the Pentagon to, in effect, prohibit DTSA personnel from receiving the USDP Daily Report, a summary of a broad range of issues important to DoD staff. This cut-off was both malicious and damaging to the organization's mission. It should be noted that the Daily Report, an E-mail-distributed document, is available to hundreds of other OSD personnel, including interns.

As if these steps were not enough, as part of the campaign to marginalize—but maintain the illusion of an effective organization—DTSA management placed staffers with little or no experience or technical aptitude in key positions representing DoD in interagency meetings. DTSA representation has become the joke of the interagency process due to its putting its weakest foot forward. In addition, the revolving door of compliant military personnel being hired into DTSA civilian vacancies has helped to undermine the morale and competence of the entire organization. It should be noted that these practices were among dozens of findings in a devastating 1992 DoD/IG report.

As the purpose of today's hearing is to review the licensing process, I would like to begin by describing the current process, how it has changed over time, and the impact of these changes upon our national security. The three charts in Attachment 2 are designed to illustrate these issues.

As shown in Chart 1, Pre-1992, a typical export license application followed a relatively straightforward path. The process began when an application was submitted to the Commerce Department. If Commerce deemed it appropriate, the case was staffed to State, Defense, Energy, ACDA or the Nuclear Regulatory Commission for review. Each agency provided its recommendations to approve, deny or refer to one of the specialized interagency Subcommittees on nuclear, missile or chemical and biological warfare issues. If agencies could not arrive at a consensus-based position, then the case would be escalated to the Operating Committee. If the weapons-of-mass-destruction-focused Subcommittees failed to agree, then the case would be escalated directly to the Advisory Committee on Export Controls (ACEP).

Chart 2 depicts the erection of the first of the firewalls that have come to dominate the process. This invisible barrier represents the unwillingness of DoD officials to escalate disputed cases beyond the ACEP. Unfortunately, in this process, failure to escalate and fight on behalf of a minority view means you lose. Commerce was quick to sense DoD's lack of resolve. Then the predictable took place. Commerce began pushing the envelope on virtually all issues and boldly overruled a weak and ineffectual DoD. It was not long before DTSA's staff began receiving stunning instructions from their director to support DoC on a variety of issues. Energy and ACDA increasingly distanced themselves from DoD positions because of DoD's failure to protect its own mission areas. It should be noted that national security-minded staff in DoE were being similarly undermined.

Chart 3 shows the process calcifying with the promulgation in December 1995 of Executive Order 12981. This deceptive document purported to broaden DoD's role in export licensing by increasing the number of cases DoD would be permitted to review. But what the right hand giveth, the left hand taketh away. The Executive Order divorced the weapons-of-mass-destruction-focused committees from the ACEP and elevated the Commerce-chaired Operating Committee to new heights of power and influence by breaking the peer relationship with its sister committees and making it the only committee to report to the ACEP. The Missile Technology Export Committee (METC), the Subcommittee on Nuclear Export Controls (SNEC), and the Shield (Chem/Bio issues) Committee were all relegated to insignificant positions as they lost the ability to vote a case directly to the ACEP. Thus, a second firewall was erected and serves as a barrier to prevent the most knowledgeable participants in the interagency process from being able to directly inform policy-makers on the most profound technology transfer issues of the day.

As if these changes were not enough, the Executive Order also shortened the time available for the USG to screen license applications. Combined with a further Draconian shortening of the time allowed by DTSA management to review cases within DoD, the system is designed for failure. For example, when a case comes to DoD



for review, DTSA's internal engineering staff have approximately 4 hours to undertake a technical review of perhaps 20 to 30 cases each day. Approximately 70 percent of the cases are approved outright based on the meager information contained in the license. The technical reviewer generally does not get a second look at the case. Agencies have only 10 days to ask questions. After that, no questions are allowed.

As the charts in Attachment 3 reveal, at the same time that the December 1995 Executive Order was handed down, DTSA's role in the process was further diminished. DTSA in turn slashed the role played by the armed services, the Defense Intelligence Agency, and the National Security Agency, by limiting the number of licenses referred for their review. These organizations, of course, possess the most credible and critical decision support information. DTSA's shutting them out cripples efforts to discern the national security implications of licensing decisions. In addition, DTSA management began arbitrarily dismissing valid intelligence information because "it was over 1 year old." Thus, when faced with evidence that would have traditionally been termed "a smoking gun," the chain of command now capriciously rejects intelligence data and technical analysis when it suits them.

Matters are even worse in the case of supercomputing licensing.

The Department of Defense was the leader in successful efforts to decontrol exports of supercomputers capable of processing vast quantities of complex information and supplied funding and other forms of assistance to contractors hired to justify preconceived policy initiatives in this regard. In a strategic context, such computer systems typically figure in weapons development laboratories, nuclear weapon simulation and modeling facilities, ICBM warhead design activities, and a host of other critical military applications. DoD's leadership harked right back to the role played by the new DoD chain of command in decades-long efforts to reform [read scrap] the export control system at the National Academy of Sciences.

Was it any wonder that DoD officials were unhappy when the Congress mandated in Section 1211(a) of the National Defense Authorization Act for fiscal year 1998, that Commerce was required to forward to the Department of Defense all computer license applications for systems exceeding a certain level of performance? This new authority was an unwarranted gift to some in DoD who led the charge to decontrol the very computers the Congress addressed in the law. The White House immediately sought to neutralize this congressionally mandated requirement by requiring the signature of an Under Secretary in order to object to such an export. The Commerce Department narrowed the window even more by refusing to recognize the right of DoD officials to delegate authority internally.

As we meet today, the Administration appears poised to announce yet another round of unilateral supercomputer decontrols. This time many fear that Administration excesses will extend well above the current unjustifiable 7,000 MTOPS level. In 1995, "President Clinton [unilaterally] decontrolled computers up to 2,000 MTOPS [from the previous CoCom ceiling of 260 MTOPS] for all users and up to 7,000 MTOPS for civilian use in countries such as

Russia" and China. This will enhance proliferation of the entire spectrum of weapons of mass destruction. The weapons design establishments of Russia and the People's Republic of China stand to reap the greatest benefit from further decontrol.

Just last year, DoD officials went along with a proposal from a minor DoE office director to decontrol oscilloscopes—an item controlled for nuclear nonproliferation concerns. Remarkably, rather than opposing this reckless initiative, which was not coordinated with higher-level authorities, DoD counter-proliferation and DTSA officials supported it. DTSA officials even went so far as to bar DTSA employees from addressing the vital nuclear weapons applications for oscilloscopes and limited position papers to the non-nuclear military uses for these instruments—a weak argument at best, as they were controlled for nuclear non-proliferation reasons only.

A quick peek inside the instrumentation trailers and shacks set up around the Indian and Pakistani nuclear test sites would likely reveal scores, if not hundreds, of advanced oscilloscopes, reflectometers, computers, transducers, spectrometers, and other data-capture instruments whose export decontrol was championed by the Administration. The United States developed and pushed decontrol both domestically and in the already ineffectual international regimes known as the Nuclear Suppliers Group and the Wassenaar dual-use technology regime. The oscilloscopes decontrol took effect in 1997, just in time for India and Pakistan to freely procure as many oscilloscopes as they needed to install at their nuclear test sites. The Department of Defense became the incongruous champion of the wholesale decontrol of advanced computers while the DoE promoted the decontrol of oscilloscopes despite the fact that they were originally invented to support DoE's nuclear test program. The main beneficiaries of these decontrols were intended to be the U.S. oscilloscope manufacturers and their Swiss affiliates, which lobbied the Clinton Administration in an effort to freely export their nuclear-proliferation products to India and China.

Nothing can more graphically illustrate how deeply embedded is the refusal to say no in DoD's current psyche than the DTSA internal routing sheet in Attachment 5.<sup>1</sup> This sheet is used to solicit and coordinate positions and recommendations on important issues including the Memoranda of Understanding (MoU's), international agreements, data and exchange meetings, exemptions to Foreign Military Sales (FMS) policies, waivers, and exemptions to established policies—including satellite and launch policies. As you will notice, there are only two possible options given for DTSA analysts to return: Approval or Approval. The analyst who seeks to deny an export has no avenue to express an objection.

On October 1, 1998, the final death knell will sound for DoD's role in the export control process. The pending merger of DTSA into the new Defense Threat Reduction Agency (DTRA) is a national security disaster in the making. This reorganization will result in the removal of DTSA from OSD policy and place it within the Acquisition part of DoD.

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<sup>1</sup>(Attachment 5 is unavailable for publication due to the sensitive nature of its contents.)

First, historically, DTSA and Acquisition have been bitter adversaries over sanctions and export controls. Acquisition's primary interest naturally lies in lowering the unit costs of goods they procure for the military and in maintaining a healthy defense industrial base. Exports are seen as important profit centers, and overseas markets have long been viewed as a primary means of achieving economies of scale and lower unit costs. Export controls, sanctions, and embargoes appear, through Acquisition's lens, as running contrary to their mission.

Second, the merger will create a basic conflict of interest. DTSA is often asked to express an opinion/judgment based on export licensing requests that Acquisition is sponsoring. This is true for both dual-use and ITAR items and involves several organizations. Placing DTSA under the command of parties that are not exporters raises the serious specter of conflicts.

Third, calling for the physical relocation of DTSA from its traditional Crystal City location and dropping it out at Dulles Airport will be the *coup de grace*. DTSA personnel have been key players in the interagency meetings and activities including SNEC, OC, MTEC, Shield, NEVWIG, missile launch arrangements, Wassehaar, etc. Personnel will no longer attend a great many meetings, planning sessions or crisis teams, which are essential if DoD is going to regain its former status as a credible player in the interagency process.

Fourth, the new director of DTSA is a Lawrence Livermore National Laboratory staffer who will occupy the position for a few years as an IPA fellow. This creates yet another conflict of interest as DoD staff often deny cases bound for the DoE-financed programs within the former Soviet Union. Most of these programs are administered by DoE labs, including Livermore. These denials have generated considerable anger throughout DoE in spite of the fact that DoE refuses to turn over evidence, repeatedly requested by DoD, of a technology security plan for U.S.-financed technology transfer programs. These programs alone are deserving of a major round of congressional oversight hearings.

For the Department of Defense, both uniform and career civilian personnel, the philosophy of containment and technical superiority endures as an echoing mantra. The philosophy of the Department of Commerce, however, is one of economic engagement. This philosophy is generally agreed with, if not vigorously endorsed, by high-level political appointees in all departments and agencies, including DoD.

These philosophies are, of course, diametrically opposed. Technology sold to a potential adversary that can be used to close the technical gap between its military systems and ours diminishes our national security. Any short-term gain in our economy would, with this result, represent at best a Pyrrhic victory. The flip side to the argument is that by engagement our economy is improved. This provides incentives for increased R&D to maintain the technical gap. The biggest beneficiary in such a cycle would be the defense industry, which would be called upon to save us from our own trade policy.

The National Science and Technology Council Committee for National Security listed three conditions in its Phase 1 Progress report briefing [28 April 1997]:

One. Government controls over controlled technology are effective within legal and regulatory guidelines, but license decisions are generally made based on narrow evaluation factors and so do not include analysis of multidimensional and long-term effects.

Two. The government does not have a comprehensive understanding of the effects on U.S. national security interests of the international flow of both controlled and uncontrolled technology.

Three. Collecting and analyzing sufficient data to develop a comprehensive understanding of the international flow of both controlled and decontrolled technology and its effects on U.S. national interests to determine if adjustments to policy are called for would be a major undertaking.

Controlled technology is being redefined as uncontrolled technology at an unprecedented rate and is being exported despite the fact that the government does not have a comprehensive understanding of the effects on national interests. While claims of "regulatory effectiveness" are made relative to controlled technology [again, which is being nearly defined out of existence], the government has no clue concerning multidimensional and long-term effects. Why? It would be a major undertaking and would almost certainly expose the recklessness of current export control policy.

The export control system works only when there is a strong degree of creative tension between agencies. This natural adversarial approach ensures full and open debate. In addition, it is vital that higher echelons be regular participants in the process, and this is only achieved through escalation of issues to their level. Preemptive surrender because one does not want to involve higher authorities or because one is afraid that escalation may be misinterpreted as a personal failure to resolve issues does a great disservice to the agency's mission, the process, and this nation's physical security. DoD's consistent pattern of weak or no opposition, capitulation, and failure to escalate issues is the single greatest factor in the loss of tension from the system and its consequent failure to execute its mission.

Tragically, nowhere in this government are analyses being performed to assess the overall strategic and military impact of the technology decontrols I have described in my testimony before the Joint Economic Committee on June 17, 1997 and April 28, 1998. Nor are any analyses being performed on the impact of day-to-day technology releases being made by the dysfunctional export licensing process. Yet it is precisely at the "big picture" level where the overall degradation of our national security will be revealed. Without such assessments the government will continue to blunder along endangering the lives of our citizens unnecessarily.

Chairman THOMPSON. Well, thank you very much.

We are in the midst of a second vote now, which I will go to. Mrs. Leitner, we appreciate that. If I had been reading that we would only be halfway through with it by now. [Laughter.]

So, I appreciate that. We are going to recess and give me a chance to vote and then we will come right back and begin our questioning.

We stand in recess.

[Recess.]

Chairman THOMPSON. The Committee will come to order.

We will have another 10 minutes of debate on the next amendment and then another 10 minutes in which to vote. So, perhaps, we can get almost 20 minutes in.

Mr. Leitner, first of all, thank you, again, for being here. You are not the typical witness in many respects. I said in the beginning, usually when we are talking about policy matters, we have the heads of departments and we have high-ranking officials within the departments who are vested with the polices of those departments. You have come forth to state some really startling matters of concern to you and, clearly, they have been a concern of yours for some time.

I know you have written about this before. I think your concerns about the direction we have been going in goes back some years, back to the prior administration as a matter of fact. Is that the case?

Mr. LEITNER. Yes, sir, they do.

Chairman THOMPSON. And you have written about them eloquently and you have not been afraid to step forward and answer questions that anyone asks of you as to what you see at the ground level.

You set forth your background in your statement. Twelve years of senior strategic trade advisor within DTSA; international negotiator for export controls over machine tools, computers, robots, industrial equipment, software, navigation and guidance equipment. You were the chairman and head of the U.S. delegation to the Paris-based eight-country study group on advanced materials for weapons systems; and the study group on defense production technology and equipment. I suppose this had to do with how certain materials and equipment could be used to fabricate weapons systems by end-users—

Mr. LEITNER. Yes, sir.

Chairman THOMPSON [continuing]. For technology and other exports we might make. You have been a licensing officer overseeing exports of various proscribed countries including China, Libya, Iraq, former Warsaw Pact countries, Iran and India. And currently you are DoD's representative to the Subcommittee on Nuclear Export Controls. So, you have seen the width and breadth of the problem.

And, of course, as far as DTSA, itself, is concerned, DTSA's job is to develop and implement Department of Defense policies on international transfers of defense-related goods, services, and technologies to ensure that such transfers are consistent with national security interests, is that correct?

Mr. LEITNER. Yes, it is, sir.

Chairman THOMPSON. Your concern is national security interests.

Mr. LEITNER. Solely.

Chairman THOMPSON. You are not supposed to be concerned with any commercial activities. You understand that within the realm of things, at some levels, there has to be a balancing of commercial interests. I think most of us would agree that national security in-

terests should trump commercial interests every time, but acknowledging there is some balancing that takes place, that balancing is not your job. You are not a balancer.

Mr. LEITNER. No, sir.

Chairman THOMPSON. You look at these materials and you try to make a determination as to how they might be used. Part of DTSA's job is to determine the end-user, how these materials might be used. And your job, what division are you in, within DTSA?

Mr. LEITNER. I am in the licensing division.

Chairman THOMPSON. And your function in the licensing division precisely is what?

Mr. LEITNER. It is basically to do the national security review of cases that are proposed for export, taking into consideration intelligence, end-use, the views of the services, as well as the other parts of DoD.

Chairman THOMPSON. Now, we have a chart up there that I cannot read. Let us see if we can bring it just a little bit closer. Turn it around toward the audience a little bit more if you would.

I have a smaller one here. Now, what we have is three charts showing the progression of the organization, shall we say, or the entities that deal with these export licensing matters. And DTSA, of course, fits within that organization.

Could you very briefly, first of all, tell us on the typical export license application that is submitted to the Department of Commerce what happens? Let us take one where everybody signs-off on it and nobody has any problem and it goes very smoothly.

In the first place, these are all dual-use items, is that correct?

Mr. LEITNER. Yes, sir.

Chairman THOMPSON. That means that there is a possibility then that they might be used commercially or there is a possibility that they might be used militarily?

Mr. LEITNER. Yes, that is inherent in the category.

Chairman THOMPSON. Inherent in the category. And your determination is to decide whether or not the military aspect of it outweighs the rest and whether or not it presents a national security problem for this country?

You get an application. Someone, some company, major company wants to do business with a major country. They have a big contract and they apply for an export license for a particular material to the Department of Commerce. They send it to whom? What happens then?

Mr. LEITNER. Well, Commerce makes an internal decision as to whether or not that case is one that should be vetted to the other agencies, whether it is actually controlled or not.

Chairman THOMPSON. If it is not a controlled item, they decide it right there, themselves?

Mr. LEITNER. Right. They will return it.

Chairman THOMPSON. All right.

Mr. LEITNER. If it is a controlled item, controlled for one of various reasons, the case is then farmed out or vetted to the other agencies for their consideration. So, DoD would get an electronic submission of an export license and then it will go through an in-

ternal process of how DoD vets the issue in order to make a decision on the particular license.

Chairman THOMPSON. So, it goes to the Department of Defense and it may go to other agencies as well.

Mr. LEITNER. Right. It can go to the Arms Control and Disarmament Agency, Department of Energy, the Nuclear Regulatory Commission, if it is appropriate, or the Department of State.

Chairman THOMPSON. So, you are within DTSA. It has gone to you, it has gone to others. Within DTSA, what happens?

Mr. LEITNER. Within DTSA, the case comes in, generally electronically. It is received about 11 o'clock in the morning on an electronic upload from Commerce. And then the cases are distributed to the technical analysis branch where we have engineers involved in doing the technical analysis.

About 12 or 1 o'clock in the afternoon the engineers finally have the case up on their computers. And for the remainder of the day, whatever time allows, they do a preliminary analysis which is usually the only analysis they get a chance to do of the case. They consider its implications, whether or not the technology is appropriate for the end-use, whether or not the technology was even categorized appropriately by the Commerce Department, and the analyst might have 20 to 25 cases to do.

And he has almost no information to work with because the electronic case that comes over only has the barest minimum of information.

Chairman THOMPSON. And in making this determination, first of all, how many of these license applications do you have to deal with over a particular period of time in DTSA? How many do you see?

Mr. LEITNER. As an organization?

Chairman THOMPSON. Yes.

Mr. LEITNER. As an organization, probably about 7,000 a year.

Chairman THOMPSON. About 7,000 a year come over from Commerce?

Mr. LEITNER. Right.

Chairman THOMPSON. And what percentage of those are approved within the time frame given, no problem, sent back to Commerce?

Mr. LEITNER. Well, of the cases that come in for dual-use, somewhere in the ballpark of 70 percent are approved by the next morning.

Chairman THOMPSON. Are approved by the next morning.

Mr. LEITNER. In less than 24 hours after coming in.

Chairman THOMPSON. Less than 24 hours. What kind of information does DTSA have within its grasp in order to make a determination as to whether or not it ought to be approved?

Mr. LEITNER. Well, whatever information is available. Most of it is based on experience: I have seen this commodity before, I have seen this end-user before, that sort of thing. And it simply becomes almost an automatic exercise. But there is no time within that 24-hour period to undertake a serious analysis.

Chairman THOMPSON. So, essentially, all that you have within which to make that decision, the information you have is what in-

herent knowledge the particular officer or person who is deciding this case.

Mr. LEITNER. Exactly. And the information—

Chairman THOMPSON. Personal experience, plus, what you get from Commerce.

Mr. LEITNER. Right.

Chairman THOMPSON. What kind of information do you get from Commerce?

Mr. LEITNER. Very meager information. It is basically who the exporter is, what the commodity is, how many, what the dollar amount is, what the stated destination is, and what the state of the end-use is.

And beyond that, there is almost no information.

Chairman THOMPSON. So, they give you nothing with regard to the workings of the device or the technical aspects of it? You get none of that?

Mr. LEITNER. I get nothing. You have to specifically request a technical brochure or a technical description to be sent separately later.

Chairman THOMPSON. So, you have described then the nature of the information that you get, which certainly sounds very general.

Mr. LEITNER. Yes.

Chairman THOMPSON. Then you are an expert—although we will get to that in a minute—there are many over there, I think, within your department that have various levels of experience and expertise, shall we say. And you bring whatever experience you have got to bear on the particular subject and in most cases, 70 percent or somewhere in that ball park, you turn it around within 24 hours?

Mr. LEITNER. Yes.

Chairman THOMPSON. Now, what about those cases that are not approved? Let us talk about the 30 percent for a minute. The matter is at DTSA, it is at other agencies. There is concern. What happens?

Mr. LEITNER. The 30 percent have a variety of different outcomes eventually. Most often the cases are not approved immediately because there is an absolute vacuum of information and somebody needs to send it back; they have questions or some other information requirements. So, it gets kicked back to the Commerce Department.

Unfortunately, on an ever decreasing share of cases, DTSA requests the armed services and DIA to look at the cases to see whether they can do a real check on the technology, its application, or the end-user.

Chairman THOMPSON. If you have got a problem one of the things that you always do is check with the armed services or, I will not say always about it, but one of the things you normally do is check with the armed services because they are going to be the people who have to deal with this.

Mr. LEITNER. Exactly.

Chairman THOMPSON. The question is, whether or not they might be seeing this device across the field from them some day on a battlefield, for example?

Mr. LEITNER. Yes, precisely.



Chairman THOMPSON. So, you say in an ever decreasing number of cases, these applications are sent for comment and review by the armed services.

Now, what about the Missile Technology Export Committee and the Subcommittee on Nuclear Export Controls and all of those committees. Do they at that point, are they brought in to the picture from the standpoint of nuclear concern, missile concern?

Mr. LEITNER. Well, the way the system works right now is extraordinarily idiosyncratic. The cases that go on the agendas for those subcommittees are brought up by the individual agencies. So, if I, for instance, think something was worthy of SNEC review, I call up and have it put on the agenda for that week's discussions.

Chairman THOMPSON. At this point, let us get into our charts here. And we will point—could you stand there perhaps and point to the appropriate point.

The Missile Technology Export Committee, for example, there on the left. Yes. And then going across there is the Operating Committee and going across there is the Subcommittee On Nuclear Export Controls. And then the Shield, chemical and biological issues.

Those are the kinds of committees you are talking about at that stage of the game that you might farm these matters out to in case there is a concern in their area?

Mr. LEITNER. Yes. And then the various agencies meet and discuss them.

Chairman THOMPSON. Now, let us go back and draw the distinction of Pre-1992, which is the first chart; and 1992 to 1996, which is the second chart below there; and then present, which is up above. Let us go back to Pre-1992.

So, in Pre-1992, these entities would review these matters and what would happen if there was a concern among any of the entities?

Mr. LEITNER. OK. Back in that period of time, an issue would come up before one of the committees. The committee would meet and discuss it, and eventually take an up-and-down vote on each agency's position.

Chairman THOMPSON. All right.

Mr. LEITNER. If there was a lack of consensus or there was one outlier or 3-to-2 vote, whatever it wound up being, the case would automatically be escalated to the organization called the ACEP, the Advisory Committee on Export Controls.

Chairman THOMPSON. Let me make sure I understand.

Even if there was a majority vote to approve the license, but it was not unanimous, it would go up?

Mr. LEITNER. Yes. Even if one agency, let us say in the SNEC, for instance, objected to a case, it would force it to be escalated.

Chairman THOMPSON. It would be escalated at that point to the Advisory Committee on Export Policy, you might point to that, right?

Mr. LEITNER. Yes.

Chairman THOMPSON. And what is the Advisory Committee on Export Policy?

Mr. LEITNER. That is a committee of political-level officials at the Assistant Secretary level who meet to discuss issues as part of the dispute settlement process between agencies.

And, eventually they take a vote, as well. They present their views. They might bring a technical person to make an argument, and then they discuss it, and then they take a vote.

Chairman THOMPSON. So, let us talk very briefly then about the 1992 to 1996 time frame there, which is evidenced by that chart on the bottom there. And I believe the only difference that we have there in the two charts is that we have a red line there. Well, I am ahead of myself.

After the Advisory Committee on Export Policy then the next level of review is Export Administration Review Board, is that correct?

Mr. LEITNER. Yes, that is correct.

Chairman THOMPSON. The Advisory Committee on Export Policy, ACEP. Would you take a vote there and if there was a division there would that automatically be an appeal?

Mr. LEITNER. It would not automatically. The onus to appeal is on the dissenting voice.

Chairman THOMPSON. But they could appeal it?

Mr. LEITNER. They can appeal it. You have a right to appeal.

Chairman THOMPSON. It would then go to the Export Administration Review Board?

Mr. LEITNER. Yes.

Chairman THOMPSON. What happened in 1992 to change any of that process?

Mr. LEITNER. Well, basically in 1992, there began to be a tremendous hesitance to escalate any issues. The process down below worked basically the same way it has traditionally. But then when it got up to the ACEP level, fewer cases were going to the ACEP level, to begin with, but the big difference was that nothing wound up getting escalated beyond the ACEP level, which meant that if you had a dissenting voice, you decided not to escalate the issue on your own. Generally, the dissenting voice was on the side of national security concerns. So nothing was presented above, based on deep-seated national security concerns, from that point on.

Chairman THOMPSON. Now let's move to 1996, to the present, and what happened in 1996 to cause a change in the process.

Mr. LEITNER. There was a dramatic change that occurred at that point.

Chairman THOMPSON. Or 1995, I should say.

Mr. LEITNER. Yes. In December of 1995, an executive order was issued which did several things to the licensing process. Probably the most important thing it did, and probably the most destructive thing it did, was to elevate the operating committee above the other subcommittees, which they were coequals with before on the earlier charts.

Chairman THOMPSON. Now if you could point out, on the first chart, where their operating committee is. Now, on the last chart, where is the operating committee? It has been elevated, right?

Mr. LEITNER. Yes, sir.

Chairman THOMPSON. And it is above all of the other, what I would call technical committees now. Correct?

Mr. LEITNER. Yes.

Chairman THOMPSON. OK. Further explain the difference.

Mr. LEITNER. The operating committee traditionally has handled a basket of cases of general national security concern, nothing really very specific to a particular WMD regime, where real knowledge is required. At this point, the operating committee was elevated to supersede and sit above the other committees. This in effect cut off the ability of those other committees to report directly to the ACEP. Instead, the committees now meet, they discuss the issues before them, but now, they rarely take any votes, and any votes that they do take no longer have any meaning in the process.

So what you would have to do, if you want to escalate an issue, let's say on a nuclear matter, is to try to persuade the other agencies as to your point of view, and at that point you go back to your agency, put your position in, and it goes to the operating committee.

Chairman THOMPSON. When you say the technical committees, and we are talking, again, about the Missile Technology Export Committee, the Subcommittee on Nuclear Export Controls, the Chemical and Biological Committee, all of those are now under the operating committee. You say that their vote is really ineffectual.

Why do you say that, now?

Mr. LEITNER. Because if there is a vote, it is a pro forma vote, because the committees no longer report to anybody.

Chairman THOMPSON. It reports only to the operating committee. Or it does not report, but it has to appeal to them.

Mr. LEITNER. Right. A potential appeal only through your agency's position. There is basically a feedback loop which takes you right back to where you started from. It is a circle at this point.

Chairman THOMPSON. Who chairs the operating committee?

Mr. LEITNER. It is chaired by the Commerce Department.

Chairman THOMPSON. And is it not true that the chairman of the committee, from the Commerce Department, has the power to render a decision regardless of the vote in that operating committee?

Mr. LEITNER. Yes, sir. That is written into their charter, that all the opinions of the other agencies are merely advisory in nature.

Chairman THOMPSON. So pre-1996, these technical committees, who these matters were farmed out to, to get their expertise, matters of national security dealing with missile technology, nuclear export controls, by voicing their concerns, even they were in the minority, could cause an appeal to be taken directly to the ACEP. But after the 1995 executive order, all of it had to be funnelled through the operating committee, which was controlled by the Department of Commerce?

Mr. LEITNER. Yes.

Chairman THOMPSON. And is today controlled by Department of Commerce?

Mr. LEITNER. Yes.

Chairman THOMPSON. You mentioned in your statement the marginalizing of DoD and DTSA, and the marginalizing of the committees with the knowledge that really should be brought to bear, and I think we have seen some of that, right here, from this chart, and the change that was made.

We heard testimony the other day, and I think it is clear from that testimony, and from other accounts, what happened was that

the President's Advisory Committee, when the issue came up concerning the satellites, and jurisdiction for export licenses of dual-use satellites, whether or not it should remain divided between DoD, or State Department and Commerce, the interagency committee recommended to the President that it remain as it was, and that is, some satellites remain with Department of Commerce but others, having military sensitivity, remain at State, that that remain in place.

Then what happened was the President apparently said, OK, to alleviate your concerns, I still want this done, the transfer made to Commerce, all of them. But to alleviate your concern, I am going to put down this executive order, December of 1995, which is going to give more opportunity for input from more people.

So they're saying exactly the opposite, as I understand it, of what you're saying. The gentleman from Department of Commerce and your superiors at Department of Defense, all seem to take the position that under the new system you have got all these people with a shot at it, more or less, to raise their concerns.

The administration says no, it never gets to the upper levels because we always agree on everything. What is your response to all that?

Mr. LEITNER. My response is the argument made to say that the mere fact that we are getting to see more licenses, and that gives us more influence over the process, is nonsense. It is the other way around. It was by the changing of the mechanisms, and the institutional arrangements, they have neutered the ability to really do anything with those additional cases, other than become sort of a factory and be a mass-production outfit, and approving these things and sending them out.

Chairman THOMPSON. In other words, their position is that you are seeing more cases, DTSA is getting to look at more cases, and you would agree with that, factually?

Mr. LEITNER. Yes. In terms of numbers; yes.

Chairman THOMPSON. OK. But your response to that is that it has the opposite effect because—well, you have already described the fact that 70 percent of them are turned around within 24 hours, based on what I would call sketchy information.

Mr. LEITNER. Yes.

Chairman THOMPSON. And of course I assume that if you want additional information you have the right to ask for it, and technical brochures, so you are satisfied, generally, I suppose, on 70 percent of the cases?

Mr. LEITNER. Well, that is the way it goes out. I do not particularly agree with that 70 percent. You know, I am not the final authority on most of these things.

Chairman THOMPSON. You personally do not necessarily sign off on those 70 percent, but that is what happens?

Mr. LEITNER. That is what occurs.

Chairman THOMPSON. Seventy percent gets out of DTSA.

Mr. LEITNER. But another feature occurring at the same time is that when you move items from the State Department over to the Commerce Department, you go from basically a presumption of denial attitude, in terms of review, to a presumption of approval. Things like Tiananman sanctions do not apply under the Com-

merce regulations; they are unique creatures of the ITAR, and of the State Department regulations. So you get an inherent liberalization when you move items from one place to the other. Yes, you might see more cases coming in as a result, now they are called dual-use, but you have no leverage to do a real national security review, or have things denied on a national security basis.

Chairman THOMPSON. Let's talk about these various points. Marginalizing the DoD and DTSA. You mention the staffing at the interagency meetings. First of all, again, when we are talking about interagency meetings, which meetings are we talking about?

Mr. LEITNER. Well, in the general sense, we are talking about the meetings of the various committees, the operating committee, the missile tech committee, the—

Chairman THOMPSON. DTSA has a matter, let's say there is a problem expressed—you express a problem in DTSA. DTSA sends someone to the interagency meeting. Would that person be you?

Mr. LEITNER. No.

Chairman THOMPSON. Who is sent by DTSA to the interagency meeting to argue the case for DTSA, shall we say?

Mr. LEITNER. Well, we have the four committees that are up on the board, those working-level committees. A different DTSA staff person goes to the meeting and represents the agency's point of view and tries to make a credible argument in support of that point of view.

So, for instance, for the Subcommittee on Nuclear Export Controls, that is me. Usually, I make a better argument than I do today because I can speak. But other people are responsible for the other committees. There are three other people within DTSA, within my branch, who do the other committees as well.

Chairman THOMPSON. Do you see any deficiencies in that process in terms of who staffs those meetings?

Mr. LEITNER. Yes. Well, it is very difficult to make a technical argument, or an argument on military items, if you do not have a background in military technology of some sort. You do not have to be in the military, but you have to have some aptitude for engineering principles and an understanding of how technology works.

Chairman THOMPSON. Are you saying that people are sent to those meetings that do not have a very good technical background?

Mr. LEITNER. Or no technical background at all.

Chairman THOMPSON. No technical? Well, what qualifications do you need to be licensing officers?

Mr. LEITNER. That is a very good question, and it is a question that affects the entire process and all the agencies. There are no requirements. There is no profile of education, experience, or anything else, that is required to serve in this post.

Chairman THOMPSON. Even for a position such as the one that you have?

Mr. LEITNER. Even for a position such as mine, where I am trying to make arguments on nuclear technology grounds. Yes, there is absolutely no criterion established, that says a person should have a certain level of ability; and for people who deal with export licenses, in general, one would think that there would be some specific ethical standard, that one would have to comply with, some particular set of criteria of training that one should have in order

to really do the job effectively, if it is so important to this Nation. But yet, there is an absence of either.

Chairman THOMPSON. You mention the revolving door problem as far as perhaps these same people are concerned, or perhaps others within the organization.

Mr. LEITNER. Yes. The revolving door is a very insidious process that goes on. When you have a person who is assigned to this organization, DTSA, who might have worked there for 2, maybe 3 years on a tour of duty, for part of his Pentagon tour, assignment, then generally, later in their career, and when they retire, DTSA has a tremendous record of simply hiring people back within a week, a day, 2 months, and they come and fill the same position they had before. The fact that somebody was assigned to a particular position with DTSA for the military has very little bearing on their capability. It is a tour of duty. It is getting your ticket punched. You need a joint assignment if you want to be promotable to a higher level of the officer corps.

So very often people vie for these positions, even though they are not related to their mission or their training.

Chairman THOMPSON. Is there an industry revolving door problem?

Mr. LEITNER. We have an interesting pattern, here and there, of people who, for instance, worked as a military officer, overseeing one of the monitors you read about in the newspapers, who are protecting U.S. technology in China and Russia on these launches, who then retire and go right to work for a company like Loral or some other company involved in the launches, and are now under investigation.

Chairman THOMPSON. You also referred to an instance, or at least one, in terms of the downgrading of the effectiveness of what you perceive to be doing your job, not just being overruled, but being asked to change your position on matters, or being told to go along with the Department of Commerce on a particular matter?

Mr. LEITNER. Yes, sir. It has happened on several occasions. Sometimes it happens in your face, and sometimes it just happens when you are on vacation and somebody tampers with a database, and changes your position but leaves your name on the case.

Chairman THOMPSON. Has that actually happened to you?

Mr. LEITNER. Yes, it has.

Chairman THOMPSON. Could you give us the details of that.

Mr. LEITNER. That happened to me a couple of years ago. I denied two cases for supercomputers going to Russian nuclear weapons design facilities. One was to a facility called Azamas-16, and the other was to Chelyabinsk-70. Those are the two premier nuclear weapons and simulation facilities in Russia, have always been, for designing warheads. I put in denial positions on these cases, and I took my family on vacation for 3 weeks. I come back from vacation, I just check on the cases out of curiosity since they were so important, and I see that my name is still on the case, as if I entered a position which I didn't.

The position now read, "Return to the Commerce Department without any action at all for further discussions."

Now the electronic database where those records were tampered with is supposed to be DoD's official record of transactions of every-

thing involved in export licensing, yet people are given authority to go in and make changes and edits, which many times change the meaning of the words. Sometimes 180 degrees.

And if this system is supposed to be the official recordkeeping apparatus for DoD, it is defective, has been violated, and has no standing because it is a corrupt record at this point.

Chairman THOMPSON. And were those supercomputers transferred, did you say?

Mr. LEITNER. It is hard to tell exactly whether they were eventually transferred or not. But a month and a half later, Viktor Mikhailov, the head of Russia's MINATOM, Ministry of Atomic Energy, announced that they acquired supercomputers from the United States for the same two facilities, and they acquired them without the benefit of an export license.

So, on the one hand, I tried to stop them, was overruled, and an ambiguous position was put in, and then at the same time they were busy diverting them.

Chairman THOMPSON. In other words, apparently they came back at it a different way, and took the position they did not even need an export license?

Mr. LEITNER. The Russians came at it a different way, dealt with supercomputer companies and got what they wanted. Since then, the United States has demarched the Russians to cooperate on an investigation to get those computers back, to get them out of that weapons bureau, which is actually more than likely using them to design a new generation of warheads to be used against us.

Chairman THOMPSON. Is that because we subsequently discovered their end-use was improper, or is it because they should not—even the Department of Commerce takes the position they should not have been sent to start with?

Mr. LEITNER. The entire U.S. Government agrees those computers should have been licensed. I understand there is an investigation underway to determine the exact cause and effect in the relationships involved in getting those computers out of this country.

Chairman THOMPSON. You mentioned other instances where—I have got 1 minute left for the next vote, and I will be back shortly. Stand in recess.

[Recess.]

Chairman THOMPSON. Let's come to order, please.

Now, Mr. Leitner, we were talking about what you consider to be the marginalizing of DoD and DTSA in this important process. You talked about some of the obstacles in situations that you face in your job, including having records changed pertaining to your own recommendations.

You said there were also some person-to-person, or face-to-face interchanges along those same lines. Would you relate that to us.

Mr. LEITNER. Yes, sir. Probably the most dramatic one was in the case of the machine tool exports in the McDonnell-Douglas instance. There were a lot of reports about this in the last couple of years.

In analyzing this case, and looking at all the facts that were present, and considering the end-user and the end-use that were stated, looking at the capability of the machine tools in question, and what they were used to produce in the United States, I had

a very lengthy denial rationale, warning that these machines would undoubtedly be diverted to military use for aerospace applications in the PRC, once they arrived. It was a very long denial and my—

Chairman THOMPSON. Very what?

Mr. LEITNER. Very long denial; the rationale.

Chairman THOMPSON. I still did not understand. What kind of denial?

Mr. LEITNER. Extensive.

Chairman THOMPSON. Long? OK.

Mr. LEITNER. I cannot say it. Excuse me.

Chairman THOMPSON. Excuse me.

Mr. LEITNER. And at that point, after I entered it in as my official position, I was approached by my hierarchy above me to change my position, told point blank that a decision has been made to approve this case.

Chairman THOMPSON. You were told, point blank, a decision has already been made to approve this case?

Mr. LEITNER. Yes, and that I should change my position from a denial to an approval with conditions, and to get busy writing conditions to go along with the case, to ameliorate whatever concerns I had. At that point I refused to do it, refused to write the conditions, refused to change my position, and simply let it stand.

So what happened? I was taken off the case. My supervisor at the time was put on the case, and someone else wrote the conditions of approval. Then, when the machines were exported, they were promptly diverted as predicted.

Chairman THOMPSON. Do we know that?

Mr. LEITNER. Yes.

Chairman THOMPSON. What happened?

Mr. LEITNER. Of that shipment of machine tools, several were shipped to a cruise missile manufacturing facility in China that was hundreds of miles away from the location where they said it was going to be, and they went right into a cruise missile manufacturing facility.

Chairman THOMPSON. Have we taken any steps—our country—in response to that?

Mr. LEITNER. Well, there have been some steps, but they have been hesitant, and they have been very weak. When the McDonnell-Douglas Corporation reported that some of the machines were diverted, the U.S. Government began a catharsis of what to do now: "What do we do? Do we demand them back? Do we demand from the Chinese that they simply be reshipped back to us?"

"Do we come up with an alternative destination where these machines can be shipped? What do we do?" And my recommendation at that time was that the machines be repatriated to the United States, give the Chinese their \$5 million back, and get the machines back home.

But instead, the process was focusing on, "No, let's rewrite the license to have these machines shipped to another location." At this point they wound up approving them to be shipped to the Aerospace Industrial Corporation in Shanghai, even though they were not needed.



They were not sold for the purpose of going to Shanghai, yet the machines were approved to go down there.

Chairman THOMPSON. What was their purpose in doing that?

Mr. LEITNER. To eliminate the immediate concerns of the machines being used to produce cruise missiles, I presume, and the political fallout which that would entail. So the machines were supposedly sent to Shanghai, where they were crated up, and they stay in crates.

To the best of my knowledge, no one has ever opened up any of those crates to see what was inside of them, whether they are machine tool parts, or whether they are bricks or sand. I do not think anybody has looked inside the crates. They are the property of the People's Republic of China at this point.

And one of the things that I cautioned those approving these cases, of these machines that were rerouted to Shanghai, was our strategic assessment of what the Shanghai Aerospace Industrial Corporation will turn into as a result. These machines are extraordinarily capable systems, and we use them to produce B-1 bombers, Midgetman missiles, and the C-17 strategic airlifter. And my concerns were that if they were allowed to go to Shanghai, then they could easily be used for similar purposes, and with all of that machining capability being focused and aggregated in Shanghai, what would that mean, strategically, as a production facility?

To this day, no one has ever done an analysis of this.

Chairman THOMPSON. I am going to try to move along and cover another couple of topics because we have an awful lot of material here to cover in a pretty short period of time.

The decontrol of supercomputers, tell us what has happened with regard to DTSA in terms of that process.

First of all, tell us what supercomputers are and what they do, and what they can be used for.

Mr. LEITNER. Well, the term supercomputer is one that has become an amorphous term. Until about 3 years ago, a supercomputer was defined as a computer capable of operating at a speed of at least 200 million theoretical operations per second, and that was a figure of merit based upon one of the Cray supercomputers, which was a negotiated figure between us and the Japanese. We had something called a supercomputer regime, where basically the United States and the Japanese, being the only two real manufacturers of supercomputers in the world—and to this day that is still true—had a bilateral agreement that we would set the numbers and the thresholds, and consult on supercomputer exports on behalf of CoCom, which would accept the numbers that the United States and Japan agreed to.

Chairman THOMPSON. In other words, it would be regulated or controlled above a certain point?

Mr. LEITNER. Yes.

Chairman THOMPSON. If they had capabilities above a certain point, then they would be—

Mr. LEITNER. They would be subject to a much more rigorous licensing regime.

Chairman THOMPSON. Why?

Mr. LEITNER. With more conditions.

Chairman THOMPSON. Why?

Mr. LEITNER. Because computers at that level were developed, in large part, through DoE and DoD funds, in order to do things like simulate the effects of atmospheric heating and friction and buffeting on reentry vehicles.

These computers can do an analysis to determine the accuracy of reentry vehicles, which are coming back into the Earth's atmosphere at 25,000 miles an hour and are subject to enormous heating. The heating distorts and deforms the actual physical structure of the warhead. It is called ablation.

It is absolutely critical both to model the effects of atmospheric heating to enhance the accuracy of warheads and to experiment with new materials to try to dissipate the heat. We have gained things like carbon composites, which were developed specifically for nose cones for reentry vehicles. They have since found a few other uses for them.

But the only way you can do this kind of testing is through modeling and simulation done on supercomputers.

Chairman THOMPSON. What has happened with regard to the treatment of so-called supercomputers at DTSA over the time that you have been there?

Mr. LEITNER. Well, first of all, DTSA, DoD and the Commerce Department jointly funded a study that was undertaken by a long-term friend and associate of our Deputy Assistant Secretary at the time, Mitch Wallerstein, who was head of counterproliferation. The lead guy for the study, Seymour Goodman, was a leading advocate of decontrolling computers, for years, on some panels that were chaired by the National Academy of Sciences, which Wallerstein was the secretary for. When he came into office in DoD, he brought in a coterie of people as advisors and consultants, which he paid to have a study done that would recommend what the appropriate threshold of computers should be in terms of export control.

They came back in with—which was no surprise—recommending a tremendous liberalization of supercomputers for export, based almost entirely on market projections as to what the technology is capable of, rather than looking at the strategic impact of the decontrol. This was jointly funded by DoD, which did not look at the strategic impact.

The President then used that study as the basis for his decontrol action, which bumped the level of what was defined as a supercomputer from 200 to 2,000. They try to avoid the word supercomputer, and they now say high-speed computers. But it is a relative concept that is following the market as opposed to following the strategic application.

Chairman THOMPSON. In other words, before this action, the computers were deregulated up to 200 MTOPS, and in 1995, I believe it was, they were deregulated up to 2,000.

Mr. LEITNER. Even the definition of what is a supercomputer was kicked out, so that now, supercomputers at the level of 2,000 and below, if they go into a nonnuclear use, in a non-pariah nation, can go. Congress, in expressing its concern about that, came up with this NDAA amendment, which basically called for DoD review, whether we would like it or not.

Now at the same time the administration said computers with a CTP and MTOP rating of 7,000 can go to Russia, China, and other

places, as long as they are not going for military or nuclear applications.

Chairman THOMPSON. So in nonmilitary applications, it went from 200 to 7,000?

Mr. LEITNER. I think at the time of CoCom's death, the actual level of computers was something about 400 or 500, but it went up to 7,000 for nonnuclear end-users.

Traditionally, in many countries such as India, China and Russia, one of the first places high-scale computers would go in the past would be their meteorological bureaus to do atmospheric modeling. Unfortunately, we always were concerned that the atmospheric modeling was very similar to the type of analysis you do for the plume analysis of either chemical agent dispersion or radioactive fallout.

It has a lot in common with the meteorological software and the computers they reside on, with actual weapon stuff.

Chairman THOMPSON. Do you understand that there is under consideration, right now, a further decontrolling to an even higher level?

Mr. LEITNER. What is stated, informally, is that it is waiting in the wings. The same folks who were asked to do that first super-computer study, harking back to the NAS episodes, were tasked to do a second review. The second review was completed about a month and a half ago and was kept fairly secret for quite a while, and still has not been widely circulated within DoD.

I believe the Commerce Department did have a press conference a couple of weeks ago, announcing this report's conclusion. Many think that it is going to be used as the justification for another round of decontrols, which might raise the level of decontrol way above 10,000, maybe to 13,000. Who knows?

Chairman THOMPSON. Do you have a concern with that?

Mr. LEITNER. The concerns are manifest, and they are very, very deep. What we are doing is—I have an article coming out in the fall, by the way, in a journal, describing—entitled “Supercomputers, Test Ban Treaties and the Virtual Bomb.”

What I argue in there is that this unrestrained release of super-computing technology around the world is going to have a marked effect on even the basic premise of a comprehensive test ban treaty, because we are giving folks the tools and the platform to do hydrodynamic and other types of modeling on computers, and they can do it in a virtual sense. It can be done in the basement of a bank, it can be done in a university setting, it can be done in a whole bunch of places. What we are basically doing is moving nuclear testing to another venue.

Chairman THOMPSON. It sounds like what the United States is doing.

Mr. LEITNER. That is precisely what the United States is doing. The rest of the world is following our lead.

Chairman THOMPSON. In other words, to keep our nuclear capability intact, and not test, we have to develop this computer simulation capability in order to be able to, in effect, test without testing?

Mr. LEITNER. Exactly.

Chairman THOMPSON. And what you are saying is it is by means of these types of computers, or some of the computers that might fall within these categories, that allow one to do that?

Mr. LEITNER. Yes, and right now, the United States is spending billions of dollars a year on two projects. One is called the Advanced Supercomputing Initiative, and the other is called the National Ignition Facility. They are basically done in tandem, and they are aimed at providing an ability to do very complex simulation and modeling of warhead effects.

Now while the level of computing that will be used by our facilities is well beyond that which is being decontrolled, the level that is being decontrolled is sufficient to engage in almost every type of activity we are concerned about, and give a potential proliferant enough confidence in this design that it will begin to introduce weapons as instruments of policy, and then the whole political landscape of the world changes very quickly.

Chairman THOMPSON. I want to ask you about one more area, and that is the decontrolling of oscilloscopes. What are they? What has happened concerning their decontrol during your tenure at DTSA?

Mr. LEITNER. Oscilloscopes are neat little electronic devices. They are little boxes that have a cathode ray tube and a bunch of wires coming off of them, and basically what they do is they interpret electrical signals, or some sort of a signal, turn it into an electrical impulse, and the impulse is then shown on the CRT, like a sinewave or some others, sort of like a seismograph reading showing amplitude and modulation, of some sort of an event.

Oscilloscopes were invented, originally, by the Department of Energy and its contractors to help capture the data that could be acquired from nuclear testing. You can conduct all the nuclear tests you want, but unless you go in afterwards, you cannot actually know what the fireball is doing, its intensity, its magnitude, its directionality. If you are looking for special effects in some weapons, you cannot tell that by television pictures or by movie cameras. You actually have to have instruments down a hole, or around the device, which are measuring various aspects of the event.

Chairman THOMPSON. So what is the history of oscilloscopes in terms of their regulated status or nature?

Mr. LEITNER. Oscilloscopes have been controlled for a good long time and the principal reason of control is for nuclear nonproliferation, for that express purpose of trying to keep the analytical tools and instrumentation out of the hands of proliferators, so they will not be able to gather much data from their tests.

For instance, in 1974, in India's test, it is very doubtful whether they really derived a whole lot of data from that first test. They tested a concept, they made a big explosion, but how much they actually learned from it is another story.

If you look at what happened a few weeks ago in India and Pakistan, the series of tests that they conducted were, according to them, aimed at yielding sufficient data where they can use it later on for further development of weapons. They did a whole series, all at once, and got as much data as they possibly could before the political fallout hit them in the head.

Chairman THOMPSON. Do you assume they were using these devices?

Mr. LEITNER. I have no doubt they were using them, plus other devices that were decontrolled.

Now, in my written testimony I do point to the fact that the Department of Energy led a decontrol exercise just a little over a year ago, where Energy itself, responding to industry pressure, proposed the decontrol of oscilloscopes and their removal from the nuclear supplier group regulations as well, the group based in Vienna, whose sole purpose is to try to prevent nuclear proliferation.

The United States did this, and DoD went along with it, and went along with it in a most peculiar manner, even to the extent of limiting the ability of analysts to write papers in favor of maintaining the controls, and explaining the nuclear implications.

Chairman THOMPSON. Let me stop you there, just a second. You are saying that the Department of Defense went along with the decontrol, even to the extent of limiting the experts within the Department of Defense as to what their areas of analysis could be. Explain that a little further.

Mr. LEITNER. Normally, when there is a decontrol exercise, or some big proposal like that, DoD will marshal every bit of effort it can, from its various and extensive resources, in order to present the most comprehensive case as to why something is of national security import.

In the case of oscilloscopes, which were developed for nuclear purposes, one would have thought that the nuclear weapons applications would be of some import.

Yet instructions were given that DoD will only limit itself to its presentation to the nonnuclear military uses of oscilloscopes, and arguing that if there is a nuclear argument to be made, let the Department of Energy make it.

The response was the Department of Energy is the one pushing for the decontrol. Energy is not going to make the argument that is obvious. DoD has to make it, but we were not allowed to make it.

Chairman THOMPSON. So even though you had nuclear concerns, you were told not to voice those concerns and let those concerns be voiced by the Department of Energy which was pushing for the—

Mr. LEITNER. No, by the Department of Defense. DoD censored itself. DoD told DoD's analysts, that it will not make the nuclear argument. And it was excellent material to be used. The CIA was pumping out several types of information that were very useful.

Chairman THOMPSON. And you have access to the CIA, and part of what DTSA does is get information from our intelligence agencies?

Mr. LEITNER. Yes, and my role in the SNEC was to deal with nuclear matters, too.

Chairman THOMPSON. You had access to that information?

Mr. LEITNER. Oh, we had it all.

Chairman THOMPSON. And yet you were told not to raise those concerns?

Mr. LEITNER. Expressly.

Chairman THOMPSON. And if those concerns were going to be raised, let it be raised by the Department of Energy?

Mr. LEITNER. Yes, which was pushing the decontrol.

Chairman THOMPSON. Who was pushing for the decontrol?

Mr. LEITNER. Right.

Chairman THOMPSON. Senator Cochran.

Senator COCHRAN. And the Department of Defense was making this decision and told you not to raise these concerns.

Mr. LEITNER. The word was that it was coming from the Director for Counter-Proliferation, Dr. Wallerstein, and also from the DTSA Director, Mr. Tarbell.

Senator COCHRAN. Is there any process by which you could have brought this to a higher authority at the Department of Defense if you thought that was an incorrect assessment of the dangers to permit these kinds of dual-use exports?

Mr. LEITNER. Well, in prior years there would have been many avenues to pursue because the DTSA personnel would have had contacts and interrelationships on a day-to-day basis with other parts of DoD.

But because over the last 6 years we have been continuously isolated and pushed out of issues, basically, relegated to sitting in the building across the street from the Pentagon, doing work and showing up, but not having a leadership role any more, there was really no other alternative to go through. This was the established chain-of-command.

Senator COCHRAN. Is there any further aggravation of this problem in the proposed reorganization or the decision to further reorganize and put DTSA under the jurisdiction of the Under Secretary for Acquisition instead of Under Secretary for Policy?

Mr. LEITNER. That is the nearest thing you can do to shooting the organization in the head, Senator, and burying it because the long-term relationship between Acquisition and Policy, and particularly DTSA, over the years has been extraordinarily adversarial because we are reporting to two different philosophies. It's a bifurcated system.

The Acquisition side of the House, where the move is going to go to, is interested in maintaining what they call a healthy industrial base, defense industrial base. Exports, expanded market share, and the other economic factors that Commerce considers are largely the same factors that the Acquisition side of DoD considers. And in doing so, they have the legitimate concern that if the balloon goes up some day, those industries will be there. They will be healthy and surviving.

On the other hand, at the same time, they also hope that by having a healthy, robust industry with a large customer base DoD will eventually realize economies of scale and lower unit prices. But I do not think any of us will live that long to see that.

Senator COCHRAN. Some of the witnesses who have testified before our Committee have indicated that they are just continuing a policy that was started in the Reagan administration and then extended by the Bush administration. Is that misleading?

Mr. LEITNER. It is extraordinarily misleading. In the Reagan administration, China was viewed as a counterweight to Soviet military power. And any relationship we had with the Chinese was part of a grand strategic relationship aimed, in large part, at pulling Russian troops east of the Urals, so they will not be facing

NATO and the United States and retargeting Russian missiles away from the United States and our allies and, if possible, toward China, in order to divide and create a very dangerous situation for the Russians and force them to spend money to counter a growing Chinese threat.

The Bush administration continued the same basic philosophy, although the Bush administration was much weaker in terms of export controls. They led movements to, basically, decontrol large numbers of commodities in CoCom. But the Bush administration, still having a strategic perspective, never contemplated a U.S. initiative to eliminate CoCom or to destroy the institutional relationships, both domestically and internationally, that are protecting our national security. Through the denial, we are making it more difficult for potential adversaries from getting advanced technology that can be used against us.

When the current administration came in, there was a quantum shift in the entire philosophy. What was a strong national security concern became relegated to second or third tier. The decontrols orders of magnitude more extreme than anything that ever happened under Reagan or Bush.

In addition, in both the Bush administration and the Reagan administration there was that alternative path one can take to find a sympathetic ear in terms of what national security equities need to be protected.

There is no path any more in this administration. Even our Secretary of Defense at the time, William Perry, was a big proponent of export decontrols. When he was the DDR&E head of Research and Evaluation in acquisition, by the way, during the Carter administration, he was a very profound enemy of export controls as a philosophy. So there was nowhere to go. There was no sponsor. There was no high-level political appointee who would champion that cause any more. So things atrophied.

Senator COCHRAN. There have also been suggestions made by these same witnesses, and I am curious to know what your reaction is, about moving the various commodities from the State munitions list to the Commerce control list and whether or not that has lessened the control over these dual-use technologies.

These witnesses have said that nothing has changed just because of this shift. What is your opinion?

Mr. LEITNER. Profound changes have occurred by engaging in that move. The first change is that the ITAR, the State Department munitions list, carries with it a virtual presumption of denial, where you have to justify why a particular export should go where you want to send it, and from a national security perspective, you have to defend this.

From the view of the Commerce Department, the presumption of denial turns into a presumption of approval. Now the burden has shifted. The burden has shifted onto those who want to prevent the transaction from occurring, and the deck is generally stacked in favor of approval.

In addition, the Tiananmen sanctions don't apply to Commerce-controlled items. But the administrative sleight-of-hand of moving something from one list to another results in a whole different ball

game as to what can go and what will not go. These are profound changes. These are not minor.

Senator COCHRAN. Thank you, Mr. Chairman.

Chairman THOMPSON. Thank you. Senator Torricelli.

Senator TORRICELLI. Thank you, Mr. Chairman.

Dr. Leitner, let me, by way of introduction, make it clear to you the role in which I am cast. Through the years I have generally opposed the easing of export controls, both in the Bush and in the Clinton administration and, indeed, in the House of Representatives a former member of that body the debate specifically against allowing American corporations to participate in the launching of satellites from China.

Nevertheless, in the system in which we are engaged, it is my responsibility to probe your comments to assure their accuracy and objectivity and to ensure that all points are represented. So let me make clear to you that I have come to this debate with that point in mind, and it is important for this Committee to explore some of your comments and why you are making them, motivations and so forth.

Let me begin with respect to the export control system. In your testimony you said, "DoD's key staff were effectively removed from the chain of command and decision-making process within DoD."

Who exactly are these key staff people who were removed? Can you give us the several most prominent names.

Mr. LEITNER. Well, the key staff I am referring to, basically, is DTSA itself and the technical analysis—

Senator TORRICELLI. But at some point the Members of this Committee might like to speak with someone to see whether or not they, indeed, believe that they were removed from the chain of command. Could you give me a couple of names?

Mr. LEITNER. I would be happy to do that, but I do not think it is appropriate for me to give individual names. I would be happy to do it off-line, but not in open Committee. I think there are privacy issues and other things involved.

Senator TORRICELLI. But these are public officials. In which case, their identity is anything but private. Do you understand? This is why I introduced my comments. To say that people were removed from the chain of command, it may be an accurate statement, but it is a bold one, and it invites further inquiry. I would like to now know for the next level of inquiry if people were removed from the chain of command? Who are they?

Mr. LEITNER. If you look at many of the technical analysts, who are capable of doing technical analysis, let's say electrical engineers, who no longer do electrical engineering cases or mechanical engineers who were removed from cases dealing with propulsion systems, who understand propulsion.

Senator TORRICELLI. I am sure that such people would be helpful and no doubt they exist, but it is a very bold statement to say that key staff—I am quoting you—were effectively removed from the chain of command and decision-making process within DoD. That may be accurate.

Mr. LEITNER. Right.

Senator TORRICELLI. But it is a strong statement. It also cannot be taken at face value. You are new to this institution. Let me as-



sure you of one thing, nothing is taken at face value. Everything is followed up. If there is a name—I am not going to press the point—but if there is a name you would like to leave us with who was removed from the chain of command before you leave here today we would like to have it. Understand if you do not, it will lead some people to weigh your testimony, not all people, but some people, in a different manner.

Do you consider yourself to be one of those people removed from the chain of command?

Mr. LEITNER. In many cases, yes.

Senator TORRICELLI. Further in your testimony, and I quote, "DoD instructed DoD employees to side with the Commerce Department and isolate the State Department and the Arms Control and Disarmament Agency on many issues." That also may be an accurate statement, but it is a very strong statement.

Who instructed DoD employees to side with Commerce and isolate State? Were you told that directly yourself and, if so, in those words and who told you so?

Mr. LEITNER. It was done by the director of DTSA.

Senator TORRICELLI. Who is that?

Mr. LEITNER. David Tarbell.

Senator TORRICELLI. Did David Tarbell tell you directly that as a matter of strategy and policy you were to isolate—I am quoting from you—the State Department and Arms Control Disarmament Agency?

Mr. LEITNER. We were in a meeting dealing with the escalation of cases, what should be taken to the Operating Committee, what the position should be in the Operating Committee. Should we escalate it beyond the Operating Committee to the ACEP or whatever?

At that point the director, David Tarbell, said that we're not going to do that. We're not going to raise these issues. We're not going to support them. Let Energy and State take care of themselves on these issues, and these issues were national security issues.

So, on occasions, there have certainly been direct statements.

Senator TORRICELLI. Well, that's troubling testimony, obviously, because the Department is not pursuing its responsibilities. I am not sure if that is a confirmation to isolate the State Department and Arms Control Disarmament Agency. It sounds like a strategy to undermine them. It appears to me that more of what you are testifying is that DoD just wasn't meeting its responsibilities and its own agenda.

Mr. LEITNER. It is isolating—

Senator TORRICELLI. It is bad enough.

Mr. LEITNER. It is isolating them on specific issues, certainly.

Senator TORRICELLI. And I quote, "DTSA staff began receiving stunning instructions from the director of Support, Department of Commerce, on a variety of issues."

Are these stunning instructions all verbal or do you have any documentation to give the Committee?

Mr. LEITNER. They were verbal instructions on the hot-section decontrols, on the supercomputer decontrols, you know the very major—

Senator TORRICELLI. These were conversations within the office. There is no such thing as memorandum, letters, other instructions?

Mr. LEITNER. No. Most things in DTSA have been done verbally, and that has been a continuing source of fear, distress, and discomfort among most DTSA employees that people at the higher levels refused to put anything in writing.

Senator TORRICELLI. On Page 4, and I quote, "Agencies have only 10 days to ask questions. After that no questions are allowed." What did you mean that no questions are allowed?

Mr. LEITNER. Commerce will not accept questions at that point.

Senator TORRICELLI. So they will not accept them on a record. It is not that they are not allowed.

Mr. LEITNER. Well, you can ask questions of anybody, but in an official process—

Senator TORRICELLI. The process closes down after 10 days.

Mr. LEITNER. The process shuts down at 10 days. You can't ask questions.

Senator TORRICELLI. Dr. Leitner, I think your testimony is very helpful to the Committee, and we are very appreciative of your offering it. I do think it is important to put in context that, as I suggested to you, I have been involved in this battle for some years, and you may not believe that there is a continuum and a continuing lower of the standard on export controls, but that has been my experience from the Reagan to the Bush and to the Clinton administration.

And in fairness, particularly to the Bush and Clinton administrations, there has been a remarkable change in the international security situation, not remarkable enough, in my judgment, to warrant some of the changes, but nevertheless there is a change in atmosphere.

I note in particular that in 1987 the National Academy of Sciences' report supported very strict export controls. Indeed, I believe that when we had this debate in the House of Representatives we used to cite the National Academy of Sciences' testimony in support of export controls. In 1991 and again in 1994, the National Academy reports advocated significant changes to allow commercial development and commercial exports.

I mention this to you because it should be put in the context that the change of policy that may have been taking place, particularly in the Bush and Clinton administrations, was also reflected in the National Academy of Sciences, a belief that the international situation, having been altered, the export policy controls of the United States should be altered to deal with the new reality. That doesn't make it right, but I think for the sake of accuracy it should be put in that context.

In any case, Dr. Leitner, thank you very much for your testimony and, Mr. Chairman, for the time.

Chairman THOMPSON. Thank you very much. I think there is no question, but there has been an ongoing debate with regard to those very matters. Clearly, the international situation has changed. The question is to what extent should our response to that change?

In your earlier testimony, you talked in terms of fewer referrals to the military establishment.

Mr. LEITNER. Yes, sir.

Chairman THOMPSON. Fewer referrals to DIA, the Defense Intelligence Agency, fewer referrals to the Army, Air Force, and Navy. I just thought if you could walk through these charts again. First of all, to refresh our memories, when you are talking about referrals, at what stage of the process would you normally refer the matters to these departments?

Mr. LEITNER. These are referrals by DTSA within the Defense Department basically seeking out the technical expertise of each of the Armed Services, NSA, or DIA in support of decisionmaking.

What the charts show most clearly is the impact of that same December 1995 executive order, which basically elevated the Operating Committee to super-national status and gave it the ability to lord over and control the process and cut off the other subcommittees from the ACEP.

They show the percentage of cases received and the decisions that are being made on a daily basis. Of the 70 percent of the cases that go out within 24 hours of arrival, 0 percent are referred out for analysis.

One of the big tragedies of this is that, generally, the most compelling argument one could make as to why a case should be denied is that it is a bad end user. It is almost impossible to glean that from looking at the minimal information supplied with the case. So you have to send it to DIA or NSA or one of the other intelligence agencies in order to be able to do this. Yet, up to 70 percent of these cases are being approved without any intelligence analysis. So it is a major fault.

Chairman THOMPSON. So you had the executive order in December of 1995, and in every case there is a precipitous drop in percentages of cases being referred out to the Navy, Army, Air Force, DIA, and NSA; is that correct?

Mr. LEITNER. Yes, sir. In fact, this issue first became very clear to me when I was approached by a gentleman in the Air Force who handles export licensing for the Air Force, and said, "What happened?"

I said, "What do you mean what happened?"

He said, "Why are we not receiving any more cases from DTSA for referral to do these analyses?"

And I said, "Well, explain yourself," and he started showing me statistics saying that, well, in 1995, for instance—I cannot remember the exact numbers—we had 2,200 cases. In 1996, we had 500. In 1997, they were down to 300, and as of April of 1998 there were 50.

He said, "What are you basing decisions on?"

Chairman THOMPSON. And you have explained the answer to that.

On the proposed reorganization, Senator Cochran asked you some questions about that, and you talked about what you perceived to be, if you are put under acquisition, that you are being put right within the department of someone that you have had an adversarial relationship with in times past because your interests are different.

Mr. LEITNER. Right.

Chairman THOMPSON. Their interest is in acquisition and, I suppose, the more of something that is made, for export or otherwise, the lower costs are going to get. And in your case, some things should not be made to export if that is the only reason they are going to be made. Is that essentially it?

Mr. LEITNER. Yes. The philosophical differences are so fundamental, you are basically looking at the world through a different lens.

Chairman THOMPSON. Do you consider this transfer to acquisition and technology—and when we say technology, is that developing technology in order to determine what kind of systems we want to purchase for our military? What is the technology part of acquisition and technology? That is the new division that you are going under.

Mr. LEITNER. Well, the acquisition side does have one major strength, and that is the fact that it runs a lot of laboratories. Some of the R&D community comes underneath them. So in the theoretical sense, they should be well-positioned to determine what emerging technologies are out there.

We are to get that from the labs, and we get that anyway from the Services. That is why we go to the Services because they are spending the money to develop the new technology.

Chairman THOMPSON. So DTSA is not going to be supplying any additional technology that they use for their purposes.

Mr. LEITNER. No, absolutely not. We do not make anything. We are just bureaucrats who, you know, hang around.

Chairman THOMPSON. And what about the location? I understand the proposal is to move you out to the Dulles Airport; is that correct?

Mr. LEITNER. Yes.

Chairman THOMPSON. How do you view all of this in terms of the future of DTSA? Does this continue as a part of a pattern that you have seen over the last few years?

Mr. LEITNER. Yes. Very clearly it is the overall down-trend that Mr. Torricelli was speaking of a few minutes ago about export controls in general. If you think of DTSA in terms of a life cycle of an organization, it is already over the maturity phase, and we are heading downhill.

At this point, the slide will be irreversible toward the death and total irrelevancy of the organization. It is a very symbolic statement moving one out to Dulles Airport. I might try to check the area code to see if it is the same area code even, but you are certainly far removed from the day-to-day business of the government, and the ability to get back and forth is just physically difficult.

Friends and colleagues of mine who work in the intelligence community either at Fort Mead for NSA or up the river for the CIA talk about how they spend a good part of their time trying to get out of going to meetings because it consumes such a large part of their day, the simple logistics of it, that they cannot get their work done, from just a practical standpoint.

So they do not show up at meetings. They do not provide the input that they would otherwise provide. They do not have a voice. The other agencies or organizations are ill-informed as a result, so the whole process suffers.

Chairman THOMPSON. Look at the blow-up that we have exhibited now. What is that?

Mr. LEITNER. That is an internal DoD routing slip within DTSA, and this routing slip is used to transmit information for technical analysis or an intelligence analysis within DTSA.

Chairman THOMPSON. Is this something that you would receive in the ordinary course of considering an application?

Mr. LEITNER. I, personally, would not receive it, and it is not part of an export license issue. Export licenses are less important than the things that this transmits.

Chairman THOMPSON. What does this transmit?

Mr. LEITNER. This transmits an attempt to come up with a DoD position on Memoranda of Understanding, either within DoD or with other agencies or with other governments on the transfer of technology or weapons and other things. It also is the routing slip that is used to elicit some comment from DoD technical and intelligence people on issues of international agreements that might be struck on a bilateral basis.

It is also used for assessing exceptions or exemptions from foreign military sales regulations or waivers to things like satellite launch policies.

Chairman THOMPSON. It looks as if a decision of some kind has already been made by the time this sheet is distributed.

Mr. LEITNER. It is a remarkable form when you are asked for an opinion and you have two possible choices: approve or approve. [Laughter.]

You can either approve it with no comment or approve it with conditions. There is no opportunity to deny.

Chairman THOMPSON. That is really what I wanted to ask you about. You have got two boxes you can check there. One says, "No objection," and the other one says, "No objection subject to." Those are the two choices you have?

Mr. LEITNER. That is all that is on the form. It delivers a pretty powerful message to the reviewer who is asked to respond.

Chairman THOMPSON. What is the significance of a form like this to you?

Mr. LEITNER. I think it shows the philosophy that has come to the organization as well as the process, where you can export anything to anybody at any time, but you are limited in the type of response that you are allowed.

Chairman THOMPSON. Let me ask you very briefly about a couple of other areas, and then we will wrap up here. One has to do with "hot section" technology. What is the significance of it, and what have you seen happen to it in terms of control or decontrol?

Mr. LEITNER. If you can label anything as the crown jewels of American military technology, the ability to produce "hot sections" for gas turbine engines or for other military types of propulsion has to number among those crown jewels in terms of things to protect that give us a qualitative edge over potential adversaries.

It is interesting to look over the years at the failure rate for Russian military engines, our prime competitor. Their bearings would burn out. The "hot sections" would decay. They would have a mean time between failure measured in either scores of hours or hundreds of hours.

When the Russians replaced something, they had to take the whole engine out and throw it away because they could not produce things of enough quality where they had interchangeable parts.

The U.S. mean time between failure for U.S. gas turbine engines or propulsion engines is in the thousands to tens of thousands of hours. That means you have a lower logistics trail. You have a lower overhead. It means that your planes are going to fail less often. It means when the time comes to use cruise missiles, even though they have been sitting around for several years, they are going to light up the first time and every time and go fly toward their targets. The same cannot be said for Russian engines or Chinese engines.

"Hot section" technology does not really mean anything. It means different things to different people. Where does the "hot section" start? Where does it stop?

There is great debate over what constitutes a "hot section." But what the term does provide is coverage to protect a lot of subtechnologies that are critical: Metallurgical technologies, metal-cutting technologies, bearing technologies, air foil technologies, coating technologies, and other things that go into the make-up of the combustor and where the hot path or gas path is. These are very difficult things to develop. It has cost the U.S. trillions of dollars over the decades to develop and continue to develop and perfect this type of propulsion technology.

By decontrolling it, by moving it over to the Commerce Department, in essence, the bar is off, and you can expect to see a much lower failure rate in the type of propulsion systems that are going to be arrayed against our forces in the future. It is inevitable from the decontrol. It is a very profound impact.

Chairman THOMPSON. So what has happened with regard to the decontrol of hot section technology?

Mr. LEITNER. My understanding that it was put in place and that the cases are in Commerce's jurisdiction, and Commerce is deciding, as we speak, what to send over to DoD for review and what not to send for review.

Commerce has a vehicle in the Export Administration Act where there is a category called "No License Required." If no license is required because of a decontrol exercise, then it will never be seen by the Defense Department. It will never be seen by the Energy Department or anybody else. Commerce will simply ship it out the door, as the regulations would permit.

So I think it is early to judge the impact of the decontrol, but somebody better start at least forecasting it.

Chairman THOMPSON. What about laser technology?

Mr. LEITNER. On laser technology I have several attachments in my presentation that I presented first to the Joint Economic Committee last year. The decontrol of laser technology, again, was looked at in the very, very narrow sense. Lasers are important for medical purposes. They are important for a variety of reasons that have profound commercial applications, but nobody did an analysis to look at the modern military use of laser technology. A friend of mine at McDonnell-Douglas Corporation, an engineer, has described laser weapons as being the Stinger missiles of the 21st Century because of not just a fear but a recognition that as the

technology continues to propagate and proliferate, the laser-blinding applications of these devices are going to be used more and more frequently.

The United States has been developing laser-blinding weapons for years. So have the British. So have several of our allies. But now our adversaries are doing the same.

The decontrol of the lasers themselves and whom they can go to represents a tremendous bonanza in terms of developing alternative weapons.

In my charts, I show how using laser weapons that can be produced for \$50,000 each, you can have a backpack full of batteries or plug it into a receptacle somewhere, and you can have billions and billions of rounds of shots by squeezing the trigger.

One of the weaknesses in our current military technologies is an inability to defend against laser frequencies. We have narrow-band filters. We have goggles. We have paints and coatings that can be applied to filter out a particular narrow band of laser light. But for the types of frequency-agile lasers I described, there is no defense because you are moving at the speed of light, for one thing, and to get a particular material to react faster than the speed of light is beyond our current knowledge of physics to accomplish.

And, unfortunately, the ability to protect the pilot in a ground encounter or an air-to-air encounter is very, very serious and cannot be done given the present state of technology. If you want to add up costs and benefits, try to figure out the cost of defending against frequency-agile laser weapons that are meant to debilitate a pilot, to take out his eyes, to cause retinal hemorrhaging by a very brief exposure, and consider the fact that the instrumentation on the aircraft itself, the FLIRs, theIRST and the other types of electronic sensors, operate in a similar wave band as the human eye. They have a broader range, but they are equally vulnerable to the laser.

So when the pilot's eyes go, his instrumentation goes as well. So we would have to develop a whole new generation of technology.

Chairman THOMPSON. Is this technology being deregulated, being decontrolled?

Mr. LEITNER. It has been deregulated. We see very, very narrow applications of lasers still residing under control, and they are usually going to end users of nuclear concern, that we are afraid might use them in certain types of lasers for applications like laser isotope separation of plutonium to try to extract fissile materials.

Chairman THOMPSON. So where do they fit in the process? Are they considered to be dual-use items?

Mr. LEITNER. Definitely dual use.

Chairman THOMPSON. Does Commerce always send those items to Defense, or do they make the decision themselves that a license is not required in some cases?

Mr. LEITNER. For the vast preponderance of lasers that come in for export control, very few are sent to DoD. Most of them, if they are not coming expressly for somebody who has a known link to a nuclear weapons program, a nuclear plant, or a nuclear development program, generally, DoD will not see these cases. Commerce would just approve them on its own.

Chairman THOMPSON. Well, from what you have seen from the cases that have been sent over there, does that cause you concern?

Mr. LEITNER. Yes, it does.

Chairman THOMPSON. About what you are not seeing, in other words?

Mr. LEITNER. Yes. One thing is certain: Given the small number of laser cases we do see versus the size of the laser industry in the United States and the West, we are seeing—you cannot even describe it as the tip of the iceberg. We see an infinitesimal amount of things that are really—and for what uses they are being put—the conventional advanced military uses give me profound concern. But these advanced conventional uses of the technology are not being looked at to any great extent, mainly for weapons-of-mass destruction context, the current buzzword of the day.

Chairman THOMPSON. We are also concerned with the export of supercomputers, the oscilloscopes, hot section technology, and laser technology have covered. I assume there are many other areas that are in the process of, in effect, being decontrolled?

Mr. LEITNER. Yes. As a matter of fact, in February of this year, the United States' delegation proposed to the Wassenaar regime, that weak, ineffectual substitute for CoCom, that virtually all telecommunications equipment be taken off the list as well. When you are talking about telecommunications, you are also talking about satellite communication, and you are talking about transponders, and you are talking about fiber optics, you are talking about the repeaters and everything else that goes into it. And that was a very recent proposal.

The proposal stunned even some of the people on the delegation who did not know they were going to make that proposal and were incredulous as to why it occurred. That was just this past year.

Chairman THOMPSON. Thank you, Dr. Leitner.

Senator Cochran, do you have any other comments or questions?

Senator COCHRAN. I have no further questions, Mr. Chairman.

Chairman THOMPSON. Dr. Leitner, I am going to thank you for your testimony. In many cases it is disturbing. In every case it is very enlightening.

I think it is clear that the system that is in operation now places an extremely heavy burden on anyone who wants to place a restraint on the export of technology, which might have national security implications. It seems to me that the system is, indeed, rigged in favor of the commercial interests, as opposed to the national security interests, quite frankly.

There will be those that question your motivations. No one knows why someone comes forward and takes the risks, perhaps, you may be taking, but I think you have performed a public service. You have talked about these things at other times. Not a whole lot of people have paid attention up until now. It is time they did. This is a free and open forum. Anyone wants to come in and say you are wrong or they have a contrary view, they are free to do that. Let us have a debate on it.

But it is time we addressed these things, and it is time we had the input of people at the working level, not someone who can explain a chart, but someone who tells us, from the inside, how is this thing working with regard to matters of national security.



So I appreciate what you have done. We clearly have to address the system that we have here, and it looks to me like the timing is certainly right. We are talking about countries who are major proliferators in terms of nuclear technology, and biological weapons. These are the countries that are the end users of many of the things that you see.

And we seem to be at a time when the Department of Defense is intent on downgrading, and humiliating, and ostracizing the key group of people who are our front line in terms of national security considerations on export matters, DTSA.

So thank you for your contribution to this. This is something that we are going to be dealing with for some time in the future.

We will recess until 2 o'clock.

[Whereupon, at 1:00 p.m., the Committee adjourned to reconvene at 2:00 p.m. the same day.]

### AFTERNOON SESSION

[2:03 p.m.]

Chairman THOMPSON. We will come to order, please. Mr. Miller, thank you for being with us here this afternoon. Would you stand and raise your right hand, please.

Do you solemnly swear that the testimony that you are about to give will be the truth, the whole truth, and nothing but the truth, so help you, God?

Mr. MILLER. I do.

Chairman THOMPSON. Thank you very much. Be seated.

Do you have any preliminary statement you would like to make?

#### **TESTIMONY OF FRANKLIN C. MILLER,<sup>1</sup> PRINCIPAL DEPUTY ASSISTANT SECRETARY OF DEFENSE, STRATEGY AND THREAT REDUCTION**

Mr. MILLER. Yes, Senator, I have provided a copy of my opening statement to the Committee. I would like to briefly summarize that opening statement. I would like to summarize my responsibilities within the Office of the Under Secretary of Defense for Policy and outline the reporting chains for the Defense Technology Security Administration or DTSA.

I am a career civil servant. I have been in the Defense Department since 1979. From mid-1993 until September 1996 I served as the Principal Deputy Assistant Secretary for International Security Policy. Dr. Ashton B. Carter was the Assistant Secretary.

The portfolio of our office was broad. It included nuclear forces policy; counter-proliferation policy, including export control policy; Defense Department interaction with Ministries of Defense in Russia, Ukraine, and Eurasia; arms control policy; and threat reduction policy.

From September 1996 until November 1997, for 14 months, I was the Acting Assistant Secretary for International Security Policy. The position of Assistant Secretary for International Security Policy was eliminated under Defense Reform Initiative announced by Deputy Secretary of Defense Hamre in November 1997, and

<sup>1</sup> The prepared statement of Mr. Miller appears in the Appendix on page 81.

those functions were combined with the Assistant Secretary of Defense for Strategy and Threat Reduction, and I am now a Principal Assistant Secretary in that office.

The reason I go through all of this, Senator, is that we are directly DTSA's reporting senior. You have heard all about DTSA. You are well-familiar with DTSA. DTSA reported to the Assistant Secretary for International Security Policy and now reports to the Assistant Secretary for Strategy and Threat Reduction.

Under the Defense Reform Initiative, DTSA is scheduled to become part of the new Threat Reduction Agency reporting directly to the Under Secretary of Defense for Acquisition and Technology with day-to-day oversight provided by the director for Defense Research and Engineering.

When Dr. Carter reorganized the Office of International Security Policy shortly after he became Assistant Secretary in 1993, DTSA was assigned to report to Dr. Carter through a Deputy Assistant Secretary, Mitchel Wallerstein. This was done to provide greater day-to-day oversight of export control policy directly from the International Security Policy Organization.

Dr. Wallerstein, with a more limited span of responsibility than Dr. Carter, could devote a greater portion of his time to export control issues. When difficult or controversial issues arose, Dr. Carter and I, on occasion, were consulted on the issues.

When Dr. Carter departed in 1996, and I assumed the position of Acting Assistant Secretary, any controversial issues were brought to me by Dr. Wallerstein.

Following the Defense Reform Initiative changes that I just described, until DTSA is moved to the new Threat Reduction Agency, the same reporting chain applies, except that with Dr. Wallerstein's departure, Mr. Tarbell, the head of DTSA, reports first to Deputy Assistant Secretary Susan Koch and then to me and then to Dr. Warner.

DTSA is an active and vigorous spokesman in the inter-agency process for protecting national security interests.

Mr. Chairman, I had intended to conclude at that point. My responsibility to the Committee and to the Department compels me to make a few observations on the testimony of the previous witness, which I did hear most of.

First, the previous witness spoke in very broad-brush generalizations: "Key people were removed from the chain of command." As a manager, I find that extremely frustrating. I cannot deal with broad-brush generalizations. If there is a problem out there, I need to go out, find it, and fix it. When people say that there was word on the street, it is difficult for me to deal with that kind of a problem.

There are always Inspector General hotlines if people feel that they are being cut off. Those hotlines are in existence. Indeed, I have personally had to resolve two cases from DTSA that were brought to the Inspector General hotlines, neither of which had to do with policy matters.

The second point, I think, goes to the charts on the wall. I would argue to you that those are changes in form without changes in substance. There was a change in the substance. The new executive order in December 1995 changed the license review process, so that

the Defense Department was not shown only those licenses which Commerce believed it should see, but rather Defense is now shown all licenses which Commerce receives.

It was also said that the Defense Department is now afraid to raise issues and that because of the onus to escalate shown in the charts, which actually refers to the prior period as well, that Defense is not raising issues in the interagency. That does not comport with my own experience.

DTSA's reputation, both in the interagency and in the private sector is one of being a very tough organization and one that is usually uncompromising, and I have had a lot of people from both the interagency and the private sector complain to me about DTSA's "intransigence."

In this vein, in my 14 months as Acting Assistant Secretary, I often fought and often won on export control issues. I was not afraid to raise those issues or have those issues raised to me.

The notion that for the Department of Commerce any item on the list may be a presumption of approval is for others to decide. That is not the DoD position or my position. It has never been our position that there is a presumption of approval.

Third, the Committee was supplied information about the export of computers to the nuclear laboratories in Russia. From what I know of those actions, and it is not extensive, you were told information about two separate cases, one of which is under the investigation of the Department of Justice and the other of which saw the license request returned to the company without approval. The information supplied to the Committee confused these two cases.

The Committee was also told that decisions on computer control were following market decisions rather than following strategic implications. If the technology is available, if the market has made the technology available anyway, that in itself has strategic implications, and I believe that is what the Defense Department was looking at.

The Committee was told, for example, that the computers that were deregulated, decontrolled, could be used to map the dispersion of chemical agents. The Committee was not told that so-called supercomputers are not allowed, by U.S. regulation, to be exported to any rogue nation.

Fourth, I do have considerable background in nuclear deterrence and nuclear targeting, and I have had a fair amount to do with the Stockpile Stewardship Program. The suggestion that the computer exports in the 2,000 to 7,000 MTOPS range could in any way approximate what we are doing and what we plan to do in the future as a Department to ensure the reliability of our nuclear stockpile without testing is completely off the mark. We are building huge facilities, and we are taking data from all of our nuclear tests, and what we will do is simulations without the fissile material and use the computers to compare what happened in the past with what happens with the simulations.

There is no connection between a 7,000 MTOP computer, especially if there is no database of past tests to compare. That I do know. I am not an export control expert, but I can speak to that.

Fifth, on the question of oscilloscopes, the Committee was not told that the deregulation of oscilloscopes specifically said that os-

cilloscopes could not be exported to any country of proliferation and concern and, in particular, to India and Pakistan. If India and Pakistan had obtained the oscilloscopes, as the Committee was told, that does say something about their general availability.

Sixth, with regard to data and the screening of licenses by the Services, because in December 1995 we were given authority to review all of Commerce's licenses rather than just those which Commerce wanted us to see, DTSA's case load from Commerce went from 1,200 licenses a year to 9,000 licenses a year. To cope with this, the director of DTSA went to the Armed Services and to DIA and asked them what parameters governed the licenses they wanted to see. And what the Services and DIA see now responds directly to what they told DTSA they were interested in looking at, in terms of both technology and potential end users.

Seventh, the routing slip which was shown the Committee that simply said "approve and approve with modifications" was never used for any sort of license review. That was used to review a Memorandum of Understanding, a Memorandum of Understanding being an agreement concluded between the United States and a friendly government. Agreement in principle to the MOU would already have been in place, therefore, before text was circulated to DTSA, so it was not a question of rejecting the MOU, but rather of making changes to proposed text. As a result, the choices correctly are "approve or approve as modified."

Eighth, hot section technology for military aircraft is still on the list controlled by the State Department, not by the Commerce Department. And hot section technology for civilian aircraft requires a Commerce license. There are no exemptions for that license. The Department of Defense gets to review all of those licenses.

As I said, I have a broad background in Defense issues. I am not an export control specialist. But if the Committee is interested in the specifics of any of these cases, I would be happy to take that back and promptly supply information for the record for your review in either a classified or unclassified form or both.

Senator that concludes my remarks.

Chairman THOMPSON. Thank you very much. What is the extent of the Defense Reform Initiative? I understand that the changing of DTSA is a part of that. Are there other parts?

Mr. MILLER. Yes, Mr. Chairman, there are. The Defense Reform Initiative had several parts. The first was, in our own organizational policy, to go from four assistant secretaries to three to further reduce the organization.

Second, there is a cut in the number of people in the Office of Secretary of Defense I think on the order of 30 percent. We are under a 30 percent reduction in about an 18-month space.

In the course of this streamlining of the Department, one of the ideas, as I understand the thrust behind the Defense Reform Initiative, and I was not an author of it, was to remove implementation functions from policy at the same time the Policy was getting smaller. DTSA was viewed to have an implementation function.

A second thrust of the DRI was to create a strong center for DoD to fight proliferation, and in that regard, this new Threat Reduction Agency was created, bringing together a number of different agencies to focus on counter-proliferation. It was believed that be-

cause DTSA dealt with technology that could be used to build or acquire weapons of mass destruction that it would benefit from the synergy of being co-located with the other elements of the Threat Reduction Agency, and that was the point in that.

So the Defense Reform Initiative is wide-ranging across the Department, and the DTSA relocation is only a portion of that.

Chairman THOMPSON. But the DTSA relocation was definitely a part of that.

Mr. MILLER. Yes, sir.

Chairman THOMPSON. And was done at the same time.

Mr. MILLER. Yes, sir.

Chairman THOMPSON. I noticed that—

Mr. MILLER. I am sorry, Mr. Chairman. I should say that even within that, the responsibility for export control policy will remain with the Office of the Under Secretary of Defense for Policy, and so DTSA will continue to staff us in export control matters just as it does today.

Chairman THOMPSON. So you are separating the DTSA policy from the other responsibilities of DTSA.

Mr. MILLER. Yes, sir.

Chairman THOMPSON. And you are leaving the DTSA policy essentially where it is. What is that going to translate to in terms of number of personnel?

Mr. MILLER. We have not figured that out yet. I have asked Mr. Tarbell several weeks ago, I asked Mr. Tarbell to submit to me by the end of this month, this June, a plan for how he would continue to staff me and Assistant Secretary Warner in these functions while having the main body of his people out at Dulles co-located with the other agencies. So I will not pretend to you that I have a plan yet, but I have asked for an initial input, which I will then take up.

Chairman THOMPSON. How would you describe the function of policy in DTSA, as opposed to the implementation or however you have described the other part?

Mr. MILLER. I would say that the policy involves the broad debate within the interagency as to what is controlled and how it is controlled. I would describe implementation as being the routine processing of what I am told are 21,000 license applications a year—about 9,000 from Commerce and about 12,000 from the State Department.

Chairman THOMPSON. How could you do the routine processing without consideration of what should be processed?

Mr. MILLER. I think that what you do is you first set forth broad policy. Certain things do not go to certain countries. Certain end users are known to be bad, and there are certain black-and-white things; technology exports to a humanitarian organization, which is clearly a humanitarian organization, is clearly OK.

Chairman THOMPSON. But there will be questions concerning whether or not a particular situation fits within that policy.

Mr. MILLER. Absolutely.

Chairman THOMPSON. And your policy people will be at Crystal City, and your other people will be at Dulles Airport.

Mr. MILLER. We have faxes. We have phones. I am going to have people resident in the Pentagon to directly liaise with me, and

when issues like that come up, as you suggest, they will be treated as policy issues. If it proves necessary raising an issue to the ACEP at the Assistant Secretary level will be done by Policy, not by the organization at Dulles.

Chairman THOMPSON. So the people who actually make the recommendation as to whether or not something should be approved will not be involved in the raising of the issue to the ACEP level.

Mr. MILLER. They never are. They never have been. It has always been from the licensing officer to his superiors to the head of DTSA who, under the previous regime, was a member of ACEP.

Chairman THOMPSON. Well, the licensing officer and his superior and the head of DTSA will all be a part of the move, won't they?

Mr. MILLER. They will, but they will have liaison functions in the Pentagon.

Chairman THOMPSON. I see.

Mr. MILLER. At this point, they are not located in the Pentagon. Even so, we are able to meet the 5-day rule. We only have 5 days to raise something to the ACEP if we want to object.

Chairman THOMPSON. What do you think about that 5-day rule?

Mr. MILLER. I have never had a problem with it. I have always used it. When DTSA calls me up and says that this has to be done, you make a clean path for the piece of paper, and we have never missed a deadline.

Chairman THOMPSON. You are at the Assistant Secretary level?

Mr. MILLER. Yes, I have been. I am now a Principal Deputy Assistant Secretary, but I act for the Assistant Secretary when he is away or unavailable.

Chairman THOMPSON. Are you involved in the ACEP part of the process?

Mr. MILLER. When I was the Acting Assistant Secretary, I raised the objections. I get it to my boss, the Assistant Secretary now, and when he is gone, I sign for him.

Chairman THOMPSON. How many cases have you handled?

Mr. MILLER. I will get that for the record. I do not know.

[The information for the record follows:]

#### ANSWER FOR RECORD

From January 1995 through May 1998, DoD escalated 72 license cases in the Commerce system to the Advisory Committee on Export Policy (the ACEP). The number of cases by year were as follows: 1995—27; 1996—28; 1997—13; 1998 (thru May)—4.

I would have reviewed recommendations from DTSA for escalations from January 1995 to September 1996 when I served as the Principal Deputy Assistant Secretary of Defense for International Security Policy. During the period of September 1996 until November 1997, I would have signed out escalations as Acting Assistant Secretary of Defense for International Security Policy. Since late last year, I have been the Principal Deputy Assistant Secretary of Defense for Strategy and Threat Reduction, and all escalations went through me for review prior to being considered and signed by the Assistant Secretary of Defense for Strategy and Threat Reduction. In all of the above time periods, I would have signed the escalation as Acting Assistant Secretary if the Assistant Secretary were out of town.

Chairman THOMPSON. Coming up from the Operating Committee as it is now to your level, to that level—

Mr. MILLER. Yes, sir.

Chairman THOMPSON. How many cases have you appealed from that level on up to the Secretary level?

Mr. MILLER. We have not appealed one.

Chairman THOMPSON. There has not been one. I noticed in your statement that you say DTSA will become part of the new Defense Threat Reduction Agency reporting directly to the Under Secretary of Defense for Acquisition and Technology with day-to-day oversight provided by the director of Defense Research and Engineering.

So not only do we have a Policy Implementation Division, but apparently we have a responsibility to the Division here of some kind because they are reporting to the Under Secretary for Acquisition and Technology, but their day-to-day oversight is provided by someone who is below that position on the organizational chart, and that is at the director level.

Mr. MILLER. Yes, sir, he (the new Director of Defense Research and Engineering) is of the "director" level, but it is a Senate-confirmed position.

Chairman THOMPSON. So how do you envision that or is that part of your job to make the determination?

Mr. MILLER. I think we will work that out as we go along, but I see no difference in the way we do business today in export control matters with the way we will do business whenever the actual transition is made.

Chairman THOMPSON. The day-to-day oversight will be provided by the director of Defense Research and Engineering. Now what is the job of the director of Defense Research and Engineering today?

Mr. MILLER. Defense Research and Engineering looks over technology development within the Department. The people who—

Chairman THOMPSON. You see—excuse me. If I am interrupting you and you need to interrupt me back, go ahead. I am trying to get us both through here as soon as we can.

But do you see the problem that some of us may have here? And you are much more steeped in all of this than we will ever be. But we have a responsibility too, just as you do. Taking an organization like DTSA, setting aside the difference of opinion that people have in terms of what is going on over there. It is set up to be where the rubber meets the road and make initial determinations of matters concerning national security in many cases.

And besides the testimony here today, we see now that DTSA is moving, its day-to-day operations for the implementation side of things is going to be placed under the director for Research and Engineering. That does not make any sense, just listening to it. I mean, what justification do we have for that, to mention the fact that they are reporting directly to the head of Acquisition and Technology. I am sure you heard the testimony today that Dr. Leitner considers that to be an inherent conflict of interest because the Acquisition people—well, you heard what he said. What is your response to that?

Mr. MILLER. First of all, the Acquisition people are not the people who are out there selling U.S. technology. They are developing it for the use of the U.S. Armed Forces. To the degree we have a sales function in DoD, it is a different organization.

Chairman THOMPSON. But they are acquiring it and they have an interest in getting it as cheaply as they can.

Mr. MILLER. Sure.

Chairman THOMPSON. Does that in and of itself not present an inherent—

Mr. MILLER. There may be some inherent tensions, Mr. Chairman, but I do not think those are unworkable. We have those today. We used to have those to the degree that something is staffed in the Department—

Chairman THOMPSON. But there is nothing within DTSA today that presents that conflict. It does not look to me like—now people might make incorrect decisions and disagree—

Mr. MILLER. Because an issue comes into the Department—

Chairman THOMPSON. But they only have one focus the way it is now.

Mr. MILLER. Sure. And they will, I think, continue to have one focus. The idea, as I understand it, behind the new Threat Reduction Agency was to bring together a group of people who will all work on fighting weapons of mass destruction. And the thought was that because DTSA fights the export of what could be weapons of mass destruction or components thereof, its people would benefit by being co-located with these other technical people who will be fighting a weapons of mass destruction acquisition by other nations. In that sense, they all fell under Under Secretary of Defense for Acquisition and Technology. It is not tidy, but the thought is there will be synergy.

Chairman THOMPSON. I thought the acquisition had to do with our acquisition.

Mr. MILLER. It does. But, again—

Chairman THOMPSON. Not the acquisition of other countries. That is DTSA's functions. What you are saying now is we are going to have acquisition coming and going.

Mr. MILLER. You have a Threat Reduction Agency. It will be its own Threat Reduction Agency. It will report into the Department, into the Pentagon through the Under Secretary for Acquisition and Technology, who has other functions. The Threat Reduction Agency's sole function will be to fight the acquisition of weapons of mass destruction by other countries.

Chairman THOMPSON. What is within the Threat Reduction Agency?

Mr. MILLER. What is now the On-Site Inspection Agency, those people who go out and—

Chairman THOMPSON. Is this a new agency?

Mr. MILLER. No, sir. No, it is already located at Dulles. It is a 500-person agency that does our arms control inspections.

Chairman THOMPSON. Where do they fit on the organizational chart today?

Mr. MILLER. They currently report to the Under Secretary for Acquisition and Technology. There will be the Defense Special Weapons Agency, formerly the Defense Nuclear Agency. They also report to the Under Secretary of Defense for Acquisition and Technology, and they are the ones who helped do research and engineering on some of our new sensors for some of our new weapons technologies. Those are two of the principal parts.



Some elements of what used to be the Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological matters, those people who are involved in chemical and biological defense programs, and some of our nuclear surety programs will be part of the new agency.

Some of the people who implement the Nunn-Lugar Program in the former Soviet States will be part of this new agency, and DTSA, too, will be part of this new agency. So it is a very broad—

Chairman THOMPSON. Excuse me. When you say "new agency"—

Mr. MILLER. The Defense Threat Reduction Agency.

Chairman THOMPSON. But it is not a new agency.

Mr. MILLER. DTRA will be a new agency comprised of existing functions.

Chairman THOMPSON. I see.

Mr. MILLER. And if there is a sense of a conflict of interest, even today the people who are our arms sales people, DSAA, Defense Security Assistance Agency, and DTSA both report to Walt Slocombe, who is the Under Secretary for Policy. So if you believe that there is a tension, that tensions exists today, I think we have been able to deal with it.

Chairman THOMPSON. How many levels are there between you and the head of DTSA?

Mr. MILLER. Officially, there would be one level, Deputy Assistant Secretary.

Chairman THOMPSON. Between you and the head of DTSA.

Mr. MILLER. One level.

Chairman THOMPSON. Do you have dealings with them on a regular basis or is it limited to the ACEP level?

Mr. MILLER. It would be approximately once a week. ACEP does not come up all that often. We talk about other licensing problems, but I would say once a week, once every other. Whenever they need to come see us, they come see us.

Chairman THOMPSON. With regard to some of the other testimony that we heard this morning, I appreciate your comments with regard to that. You obviously have some knowledge of the operation of DTSA, although, of course, you are not within DTSA. You do not have anything to do with the day-to-day operations and have no first-hand knowledge of what decisions are made or the merits of any decisions that are made within DTSA.

And you are right to point out that some statements are general statements. Some statements Dr. Leitner made are general statements. Some are very specific. He has very specific instances of cases where he was told to make a certain recommendation or a recommendation was changed, but some were general.

But when you say that DTSA is known to be very tough, that is a general statement too. We are all captive to that, to a certain extent.

But where he did talk in terms of specifics, in terms of products, I think we need to discuss that a little bit more. I will take your expertise as far as the so-called supercomputer situation at face value.

Mr. MILLER. Which is very limited, Mr. Chairman.

Chairman THOMPSON. It is limited?

Mr. MILLER. My own expertise is limited.

Chairman THOMPSON. Oh, I thought that your—but it was the Stockpile Reduction Program I believe you said that you had some—

Mr. MILLER. Yes. Stockpile Stewardship, yes.

Chairman THOMPSON. Stewardship, that you had some interest in. And coming from a State that has Oak Ridge in it, we have some interest in it down there also.

As I understand it, your idea that the supercomputers at the 7,000 level would not begin to get into that kind of problem. Do you have any idea at what level we will begin to get into a situation where another company might or could use that technology for their benefit, for their Stockpile Stewardship Program or simulating their nuclear tests?

Mr. MILLER. I will get you that answer for the record.

[The information for the record follows:]

#### ANSWER FOR RECORD

First, and foremost, a supercomputer—regardless of performance—is dependent on highly detailed computer codes (software) to simulate dynamics of a nuclear explosion. Programmers can only develop software codes of this nature from data collected from past nuclear weapon tests and other experiments coupled to known first-principles of physics and chemistry. For example, for the U.S. Stockpile Stewardship Program, the expectation is to develop software that mirrors the range of U.S. nuclear test experience. Where test information is lacking the programmers would model results from experiments and scientific principles. The Department of Energy has begun developing this advanced software, not for the purposes of developing new weapons, but to confirm the performance of the ones we have as age-related change begins to alter the physical properties of U.S. weapons.

Once software is mature later in the next decade, we believe that a supercomputer capable of modeling the extreme dynamics and complexity of a nuclear explosion will likely require performance capabilities in excess of 10 peta Operations Per Second ( $10^{16}$  OPS), a capability very significantly—by a factor of  $10^{12}$  OPS—above the performance of the computers illegally diverted to Russia.

Currently, no computer, including those reflecting today's state-of-the-art technology, has the capability necessary to design safe and reliable nuclear weapons because they lack the speed and the software necessary to simulate a nuclear explosion. As you know, supercomputers are massively parallel devices. I can infer from today's technology that the absence of such a link between several supercomputers means that it is not within today's technology to link such powerful computers.

However, it is likely that supercomputers might serve another nation with considerable nuclear test experience as a modeling enterprise to assess age-related changes on its nuclear weapons, if that nation could develop the software unique to its nuclear weapons experience. As such, software related to U.S. nuclear explosions must also be protected as we continue to advance with computer hardware technology.

Mr. MILLER. The Department of Energy is working on a new supercomputing facility which, as I understand it, is supposed to raise computing powers in about 5 years time some 100 times the current capacities, the best current capacities, and only then does DoE say that it will be fully confident and can simulate what is going on. So that is 100 times. It is an enormous technical challenge even for DoE.

So there is no comparison between current computers and what we are looking to for stockpile stewardship.

Chairman THOMPSON. Well, the head of Russia's Ministry of Atomic Energy, Mr. Mikhailov, said that the acquisition of American supercomputers by Russia's nuclear weapons labs meant Russia had acquired computers ten times more powerful than any Russia previously had.

Does it not mean that these computers, if they are not as powerful as the ones used at DoE, can still enhance Russia's nuclear weapons design capability?

Mr. MILLER. I can say a number of things to that. First of all, if those computers were acquired, they were acquired illegally, without license review. We would not have approved licenses for computers going to Russia's nuclear weapons capability.

Second of all, Russia is a different matter.

Chairman THOMPSON. Or could it be also that they acquired them for certain purposes and then illegally diverted them to another purpose?

Mr. MILLER. No licenses were approved for exports of those computers to Russia. However they got there, they did not get there, as I understand it, through any legal mechanism, and Justice is investigating that.

Second, Russia has an existing nuclear stockpile with probably several hundred to a thousand nuclear tests under its belt. Even given that, Russia has challenges in terms of maintaining its nuclear weapons for the next 10 to 15 to 20 years without testing.

We face similar challenges. Our computational capabilities are better than Russia's today, and DoE says that our current computation capabilities are not sufficient for us to enter into the no-testing world. That is why we are doing this huge supercomputer project. Could Russia get benefit from these existing computers with an existing weapons program and its two major nuclear design laboratories? I suspect they could. If I knew something more about the computers, I suspect they could.

That is quite another step, though, to say that a country that is a potential proliferant would be able to use those to perfect a nuclear design in a no-testing environment.

Chairman THOMPSON. So you take the position that Russia is not such a country?

Mr. MILLER. Russia has a mature nuclear weapons capability—

Chairman THOMPSON. I am talking about in terms of potential proliferator. Is that what you said?

Mr. MILLER. Russia has not been a nuclear proliferator. Russia has been particularly good in keeping its nuclear weapons technologies to itself. Through the Nunn-Lugar Program, we are trying to make sure that none of their weapons get stolen, that their weapons scientists stay home. There are things that the Russians are doing today with nuclear power reactors in Iran that cause us grave concern.

But, again, it is a different kind of a proliferation concern. At the end of the day, it gets back to nuclear weapons, but it is not nuclear weapons design information, it is not nuclear weapons themselves, it is not nuclear weapons parts.

Chairman THOMPSON. But possibly nuclear weapons materials or fuel.

Mr. MILLER. We worry about that. That is one of the reasons, one of the main elements of the Nunn-Lugar Program is to build a facility at Mayak in Russia to store the fissile material that is mined out of all of their destroyed nuclear weapons and to secure it safely.

Chairman THOMPSON. But, again, you say they will not be put in the hands of potential proliferators. Would China fall into that category?

Mr. MILLER. China has a spotty proliferation record. We worry about China. We have, as a government, gone to China many times and complained about some of its proliferation activities. We have sanctioned Chinese officials for chemical weapons precursor proliferation. We have demarched the Chinese government on the proliferation of missile systems and have had some limited success in that area.

There are reports that China assisted Pakistan in the development of its own nuclear device. So China's weapons proliferation record is fair to poor, at best.

Chairman THOMPSON. So that brings us to the oscilloscope situation. I believe the point there again you were making is that we were not sending it to proliferators, but if, in fact, we are sending it to someone and, therefore, would not have sent those to India or Pakistan, but if we were sending it to a country that was in turn sending it to India and Pakistan, the result would be the same, would it not?

Mr. MILLER. That is true, but my understanding of the regulations that we require third-country transfer provisions, which would not let the legal recipient transfer—

Chairman THOMPSON. Mr. Miller, you could not stack on this table the number of reported instances where China, and other countries, have sent nuclear technology, nuclear missile parts, biological and chemical weapons to various countries. I mean, we all know that, and we are debating over what to do about that. But I think just to keep all of our cards on the table, you have to get back to these devices and what they can be used for. And the end-user question is an important one, but it does not answer the whole question.

And to say that we are not sending it to bad guys, we are just sending it to people who are sending it to bad guys, does not answer the question. I know you take issue with part of my assumption there, but that is where I am coming from on it.

Do you have any concern of the charts that were displayed earlier concerning the diminishing percentage of send-outs to our Armed Forces with regard to these export applications? Were you there for that?

Mr. MILLER. I saw that. Without pretending to be an expert, let me tell you what I understand. The baseline of 1992 to December 1995 reflects all of those cases that Commerce thought DoD ought to review, and the average number is 1,000 to 1,200. Following December 1995, DoD got the authority to review all licenses which Commerce is going to approve. So the case load goes from 1,000 to 1,200 to 9,000.

If the basic core set of cases of concern continues to be referred to the Services for review, that is the numerator. If the denominator goes from 1,000 to 9,000, the percentage is going to go down.

But I am told that the Services and DIA are seeing everything that they want to see; that the director of DTSA said, "My case load is jumping. Tell me what you want to review in terms of specific technologies and specific end users." And I came back to the director of DTSA and those are what is being farmed out to the various agencies. That is what I have been told.

I will take the question for the record and supply you something for the record, but that is my understanding.

[The information for the record follows:]

#### ANSWER FOR RECORD

The following table shows the number of license applications referred to the Department of Defense by the Department of Commerce for the calendar years indicated:

	CY95	CY96	CY97
Total .....	1,463	7,420	9,891

The following table shows the number of Commerce license applications referred to the military departments and DIA by DTSA for the calendar years indicated:

Organization	CY95	CY96	CY97
Army .....	332	457	406
Navy .....	627	861	724
Air Force .....	385	753	288
DIA .....	899	2,880	2,447

Prior to CY96, not all dual-use export license requests were referred by the Department of Commerce to the Department of Defense. Executive Order 12981, which became effective in 1996, provided for Defense review of all dual-use license requests. As a result, there was a large increase in the number of licenses reviewed by DoD between CY95 and CY96, both in terms of referral from Commerce to Defense as well as for Defense referral to the military departments and DIA. The reduction in number of referrals to the military departments between CY96 and CY97 is primarily attributable to two factors. First, each military department or DoD reviewing agency provides to DTSA specific requirements for review by commodity. Consequently, the total number of licenses referred to each military department and DoD reviewing agency is determined by the criteria that those agencies define relative to their capabilities and expertise. DTSA also continues to refer, on a case-by-case basis, export licenses to DoD organizations that we believe require their review, even though they may not have included those areas in the general criteria for referral. Second, the total number of referrals will vary depending on the total number of license requests submitted to Commerce by exporter, for a given item that the military departments and other DoD reviewing organizations have included in the criteria for referral.

As for munitions license applications referred by the State Department to DoD, our records indicate that there has not been a downward trend in the numbers of munitions license applications referred to the military departments. DIA does not formally review many munitions licenses because their role is to provide an assessment of end users. Since the vast majority of munitions exports are to government end users of allies and friends, or to well-known defense companies in those countries, there is no requirement for individual end user reviews for each of these cases.

The following table shows the number of State munitions license applications referred to the Department of Defense by the Department of State for the calendar years indicated:

	CY95	CY96	CY97
Total .....	10,531	11,462	11,773

The following table shows the number of State munitions license applications referred to the military departments by DTSA for the calendar years indicated:

Organization	CY95	CY96	CY97
Army .....	4,329	4,791	5,029
Navy .....	5,517	5,972	5,867
Air Force .....	5,505	5,897	5,981
DIA .....	43	56	6

Chairman THOMPSON. Yes. We need to know a little bit more about that. I do not see how the Armed Services know exactly what they want to see until the applications actually come in. I get your point that there are many, many more being referred, and we are talking in terms of percentages and not gross numbers.

But also Dr. Leitner's point is that it has the very opposite effect than the one that it purports to have, and that is that they are getting many, many, many more applications with short time frames, and if there is an objection, we will go through the process. I have got these 5-day requirements. I think on the front end there is a 30-day requirement.

But, anyway, it is a short requirement, and they are turning most of them around on a 24-hour basis on the basis of sketchy information. It sounds like they are scrambling to keep their head above water.

Mr. MILLER. I think that the best thing I can do to respond to your concerns is to supply to the Committee a sense of the kinds of cases that are decided on the 24-hour review. My understanding is that those are open-and-shut no weapons technology exports to good guys. And so you look at it and you say, "OK, that is not a problem. Next?"

But I can only answer that fairly by supplying—  
[The information for the record follows:]

#### ANSWER FOR RECORD

There is no 24-hour review period at DTSA. For each dual-use license application Commerce forwards to DoD, DTSA staff perform a technical review that considers the level of technology and the appropriateness of the proposed end use and end user. In many cases end-users are well known on the basis of previous exports and have been subjects of recent intelligence assessments. Other factors considered include whether approval is consistent with current embargoes, sanctions, licensing policy, and security interests. Some licenses can be reviewed quite quickly because of a track record on the end user and previous experience with the specific technologies involved.

Chairman THOMPSON. I understand. Well, I think it is a good idea. Let us, if you would, submit some questions to you on some of these details.

Mr. MILLER. Yes, sir.

Chairman THOMPSON. That would be helpful. I appreciate your coming in today and your position. We are trying to make improvements. Everybody puts everything we do up here in a partisan context, and I guess most of it is. But above all of that, we have got to work together in order to make sure that we are doing the right thing. The world is different than it was even a few years ago after the Cold War. I think we are all a little bit smarter now in terms of some of the people we are dealing with and the challenges that are faced internationally, and that has got to be reflected on these day-to-day-to-day decision that we make.

And so we should not dig our heels in about a process that could be improved. It certainly appears to me that in this balance, and

it is always a balance, we have to conclude the commercial interests have had a bigger play than they should have. That is what I am taking away from all of this. I am not sure how much further we would go than that.

That there has been, either by design or by effect, a lessening of the influence of DTSA. If we did not have any problems anywhere and if the major powers of the world were not the biggest proliferators in the world, as they are, and if we knew we were going to have peace and prosperity for the next thousand years, that would be one scenario, but that is not the one that we are living under.

I have the greatest confidence in the world in the Secretary of Defense. He is a personal friend of mine. He would be Chairman of this Committee today, asking you these questions, if he had not resigned or retired from the U.S. Senate, and he would be a lot tougher than I have been, by the way.

But my guess is—I have not talked to him about it—my guess is that, perhaps, a lot of these questions have not been elevated to that level and that, perhaps, they need to be as we go forward.

So thank you for coming. Let us submit these questions to you and give us a response in a reasonable period of time, and let us go from there.

Mr. MILLER. Mr. Chairman, if I might, as a career civil servant, I would like to say, one, that I have never perceived any partisanship in this kind of a situation. The second, that it is our job at Defense, and particularly Under Secretary Cohen, to fight the proliferation of weapons of mass destruction and, while we do it by taking fissile material out of Kazakstan or out of Georgia or by working with Russian scientists to keep them at home working on peaceful projects, we have to work in this area too. The system we have now is not perfect.

Chairman THOMPSON. I am going to Russia with a couple of other Senators over the 4th of July on this very issue. So I fully appreciate what you are talking about and the effort that we are making.

Mr. MILLER. And our system at home in this area is not perfect. It needs improvement, and even these hearings in preparing for them has given us some ideas that we need to carry out within the Executive Branch to better that.

Chairman THOMPSON. I appreciate that attitude. Thank you very much. We will adjourn.

[Whereupon, at 2:42 p.m., the Committee adjourned, subject to the call of the Chair.]

# APPENDIX

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## PREPARED STATEMENT OF DR. LEITNER

### *Dual Use Technology Export Licensing Process: Wired to Fail*

Mr. Chairman, Members of the Committee, I am honored to appear before you today to discuss the transfer of so-called dual-use technologies to potential military adversaries and countries engaged in nuclear, chemical, biological, and missile proliferation. I would like to state for the record that I am appearing here today in response to a subpoena and not as a spokesman for DoD or the U.S. Government.

For the past 12 years I have been a senior strategic trade advisor within DoD's Defense Technology Security Administration. I have served as international negotiator for export controls over machine tools, controllers, robots, industrial equipment, software, and navigation and guidance equipment. I was also the chairman and head of the U.S. delegation to the Paris-based eight-country study group on Advanced Materials for Weapons Systems and the study group on Defense Production Technology and Equipment. In addition, I have been a licensing officer overseeing exports to various proscribed countries including China, Libya, Iraq, former Warsaw Pact countries, Iran, and India. Currently, I am DoD's representative to the Subcommittee on Nuclear Export Controls (SNEC). My tenure has given me the opportunity to witness the birth, development, maturity, and premature death of DoD's credible role as the guardian of U.S. technology security.

Let me state up front that over the past six years the formal process to control exports of dual-use items has failed its stated mission—to safeguard the national security of the United States. On several levels, what passes for an export control system has been hijacked by longtime ideological opponents of the very concept of export controls. Six years ago, opponents of export controls were granted direct responsibility for managing the Defense Department's role in this important process. DoD has suffered the greatest damage. Unfortunately, the wrecking ball is still swinging, and on October 1, 1998, it will level the last vestiges of DoD's role in the process.

Through a tireless campaign, the opponents of export controls have managed to destroy the 16-nation Coordinating Committee on Export Controls (CoCom) and de-control vast arrays of critical military technology, rewire the U.S. domestic export control process so that it is structurally unsound and unable to safeguard our security, and erect a series of ineffectual domestic regulations and international working groups designed to project a false impression of security, deliberation, and cooperation. This Potemkin Village has been constructed to deceive both the Congress and the American people and lull us all into a false sense of security while short-sighted business interests line their pockets at the expense of future generations of American soldiers and citizens alike.

Mr. Chairman, the single point of greatest failure in maintaining a credible export control system was the neutering of the Defense Department's traditional role as the conservative anchor. First, DoD's key staff were effectively removed from the chain of command and the decision-making process within DoD. DoD abandoned its traditional role and instructed DoD employees to side with the Commerce Department and isolate the State Department and the Arms Control and Disarmament Agency (ACDA) on many issues.

The campaign to isolate DTSA began in earnest with the arrival of David Tarbell as the director of DTSA. DTSA personnel were cut off from most technology security-related activities in the Defense Department. Whereas DTSA was once the linchpin for these issues within the department it was quickly marginalized by its own leadership. To clamp down this quarantine, DTSA management instructed the Pentagon to, in effect, prohibit DTSA personnel from receiving the USDP Daily Report, a summary of a broad range of issues important to DoD staff (see Attachment



1). This cut-off was both malicious and damaging to the organization's mission. It should be noted that the Daily Report, an E-mail distributed document, is available to hundreds of other OSD personnel, including interns.

As if these steps were not enough, as part of the campaign to marginalize (but maintain the illusion of an effective organization) DTSA management placed staffers with little to no experience or technical aptitude in key positions representing DoD in interagency meetings. DTSA representation has become the joke of the interagency process due to its putting its weakest foot forward. In addition, the revolving door of compliant military personnel being hired into DTSA civilian vacancies has helped to undermine the morale and competence of the entire organization. It should be noted that these practices were among the dozens of findings in a devastating 1992 DoD/IG report.

#### *Shorting Out the Licensing Process*

As the purpose of today's hearing is to review the licensing process, I would like to begin by describing the current process, how it has changed over time, and the impact of these changes upon our national security. The three charts in Attachment 2 are designed to illustrate these issues.

As shown in Chart 1, Pre-1992, a typical export license application followed a relatively straightforward path. The process began when an application was submitted to the Commerce Department. If Commerce deemed it appropriate the case was staffed to State, Defense, Energy, ACDA, or the NRC for review. Each agency provided its recommendation to approve, deny, or refer to one of the specialized interagency subcommittees on nuclear, missile, or chemical-biological warfare (CBW) issues. If agencies could not arrive at a consensus-based position, then the case would be escalated to the Operating Committee. If the WMD-focused subcommittees failed to agree, then the case would be escalated directly to the Advisory Committee on Export Controls (ACEP).

Chart 2 depicts the erection of the first of the firewalls that have come to dominate the process. This invisible barrier represents the unwillingness of DoD officials to escalate disputed cases beyond the ACEP. Unfortunately, in this process, failure to escalate and fight on behalf of a minority view means you lose. Commerce was quick to sense DoD's lack of resolve. Then the predictable took place. Commerce began pushing the envelope on virtually all issues and boldly overruled a weak and ineffectual DoD. It wasn't long before DTSA staff began receiving stunning instructions from their director to support DoC on a variety of issues. DoE and ACDA increasingly distanced themselves from DoD positions because of DoD's failure to protect its own mission areas. It should be noted that national security-minded staff in DoE were being similarly undermined.

Chart 3 shows the process calcifying with the promulgation in December 1995 of Executive Order 12981. This highly deceptive document purported to broaden DoD's role in export licensing by increasing the number of cases DoD would be permitted to review. But what the right hand giveth, the left hand taketh away. The Executive Order divorced the weapons of mass destruction (WMD) focused committees from the ACEP and elevated the Commerce-chaired Operating Committee to new heights of power and influence by breaking the peer relationship with its sister committees and making it the only committee to report to the ACEP. The Missile Technology Export Committee (MTEC), the Subcommittee on Nuclear Export Controls (SNEC), and the Shield (Chem/Bio issues) committee were all relegated to insignificant positions as they lost the ability to vote a case directly to the ACEP. Thus a second firewall was erected and serves as a barrier to prevent the most knowledgeable participants in the interagency process from being able to directly inform policymakers on the most profound technology transfer issues of the day.

As if these changes weren't enough, the Executive Order also shortened the time available for the USG to screen license applications. Combined with a further draconian shortening of the time allowed by DTSA management to review cases within DoD, the system is designed for failure. For example, when a case comes to DoD for review DTSA's internal engineering staff have approximately four hours to undertake a technical review of perhaps 20 to 30 cases each day. Approximately 70 percent of the cases are approved outright based upon the meager information contained in the license. The technical reviewer generally does not get a second look at the case. Agencies have only 10 days to ask questions. After that no questions are allowed.

As the charts in Attachment 3 reveal, at the same time that the December 1995 Executive Order was handed down, DTSA's role in the process was further diminished. DTSA in turn slashed the role played by the armed services, the Defense Intelligence Agency, and the National Security Agency by limiting the number of licenses referred for their review. These organizations, of course, possess the most

credible and critical decision support information. DTSA's shutting them out cripples efforts to discern the national security implications of licensing decisions. In addition, DTSA management began arbitrarily dismissing valid intelligence information because "it was over one year old." Thus when faced with evidence that would have traditionally been termed "a smoking gun" the chain of command now capriciously rejects intelligence data and technical analysis when it suits them.

Matters are even worse in the case of supercomputer licensing.

#### *A DoD That Won't Say No*

The Defense Department was the leader in successful efforts to decontrol exports of supercomputers capable of processing vast quantities of complex information and supplied funding and other forms of assistance to contractors hired to justify pre-conceived policy initiatives in this regard. In a strategic context, such computer systems typically figure in weapons development laboratories, nuclear weapon simulation and modeling facilities, ICBM warhead design activities, and a host of other critical military applications. DoD's leadership harked right back to the role played by the new DoD chain of command in decades-long efforts to reform [read scrap] the export control system centered at the National Academy of Sciences.

Was it any wonder that DoD officials were unhappy when the Congress mandated, in Section 1211 (a) of the National Defense Authorization Act for Fiscal Year 1998, that Commerce was required to forward to the Defense Department all computer license applications for systems exceeding a certain level of performance? This new authority was an unwanted gift to some in DoD who led the charge to decontrol the very computers Congress addressed in the law. The White House immediately sought to neutralize this congressionally mandated requirement by requiring the signature of an Under Secretary in order to object to such an export (see Attachment 4). The Commerce Department narrowed the window even more by refusing to recognize the right of DoD officials to delegate authority internally.

As we meet today, the administration appears poised to announce yet another round of unilateral supercomputer decontrols. This time many fear that administration excesses will extend well above the current unjustifiable 7,000 MTOPS level. In 1995, "President Clinton [unilaterally] decontrolled computers up to 2,000 MTOPS [from the previous CoCom ceiling of 260 MTOPS] for all users and up to 7,000 MTOPS for civilian use in countries such as Russia" and China. This will enhance proliferators ability to pursue design, modeling, prototyping, and development work across the entire spectrum of weapons of mass destruction. The weapons design establishments of Russia and the People's Republic of China stand to reap the greatest benefit from further decontrol.

Just last year, DoD officials went along with a proposal from a minor DoE office director to decontrol oscilloscopes—an item controlled for nuclear nonproliferation concerns. Remarkably, rather than opposing this reckless initiative, which was not coordinated with higher-level authorities, DoD counter-proliferation and DTSA officials supported it. DTSA officials even went so far as to bar its employees from addressing the vital nuclear weapons applications for oscilloscopes and limited position papers to the non-nuclear military uses of these instruments—a weak argument at best, as they were controlled for nuclear non-proliferation reasons only.

A quick peek inside the instrumentation trailers and shacks set up around the Indian and Pakistani nuclear test sites would likely reveal scores, if not hundreds, of advanced oscilloscopes, reflectometers, computers, transducers, spectrometers, and other data-capture instruments whose export decontrol was championed by the administration. The United States developed and pushed decontrol both domestically and in the already ineffectual international regimes known as the Nuclear Suppliers Group and the Wassenaar dual-use technology regime. The oscilloscope decontrol took effect in 1997, just in time for India and Pakistan to freely procure as many oscilloscopes as they needed to install at their test sites. The Department of Defense became the incongruous champion of the wholesale decontrol of advanced computers while the Department of Energy promoted the decontrol of oscilloscopes despite the fact that they were originally invented to support DoE's nuclear test program. The main beneficiaries of these decontrols were intended to be the U.S. oscilloscope manufacturers and their Swiss affiliates which lobbied the Clinton administration in an effort to freely export their nuclear-proliferation sensitive products to India and China.

Nothing can more graphically illustrate how deeply embedded is the refusal to say no in DoD's current psyche than the DTSA internal routing sheet in attachment 5.<sup>1</sup> This sheet is used to solicit and coordinate positions and recommendations on important issues including Memoranda of Understanding (MoUs), international agree-

<sup>1</sup>(Attachment 5 is unavailable for publication due to the sensitive nature of its contents.)

ments, data and exchange meetings, exemptions to Foreign Military Sales (FMS) policies, waivers and exemptions to established policies—including satellite launch policies. As you will notice, there are only two possible options given for DTSA analysts to return: Approval or Approval. The analyst who seeks to deny an export has no avenue to express an objection.

#### *Waging a Scorched-Earth Campaign*

On October 1, 1998, the final death knell will sound for DoD's role in the export control process. The pending merger of DTSA into the new Defense Threat Reduction Agency (DTRA) is a national security disaster in the making. This reorganization will result in the removal of DTSA from OSD Policy and place it within the Acquisition part of DoD.

First, historically, DTSA and Acquisition have been bitter adversaries over sanctions and export controls. Acquisition's primary interest naturally lies in lowering the unit cost of goods they procure for the military and in maintaining a healthy defense industrial base. Exports are seen as important profit centers, and overseas markets have long been viewed as a primary means of achieving economies of scale and lower unit costs. Export controls, sanctions, and embargoes appear, through Acquisition's lens, as running contrary to their mission.

Second, the merger will create a basic conflict of interest. DTSA is often asked to express an opinion/judgment on export license requests that Acquisition is sponsoring. This is true for both dual-use and ITAR items and involves several organizations. Placing DTSA under the command of parties that are net exporters raises the serious specter of conflicts.

Third, calling for the physical relocation of DTSA from its traditional Crystal City location and dropping it out at Dulles airport will be the coup de grace. DTSA personnel have been key players in interagency meetings and activities including SNEC, OC, MTEC, Shield, NEVWIG, missile launch arrangements, Wassenaar, etc. Personnel will no longer attend a great many meetings, planning sessions or crisis teams, which are essential if DoD is going to regain its former status as a credible player in the interagency process.

Fourth, the new director of DTRA is a Lawrence Livermore National Laboratory staffer who will occupy the position for a few years as an IPA fellow. This creates yet another conflict of interest as DoD staff often deny cases bound for DoE-financed programs within the former Soviet Union. Most of these programs are administered by DoE labs including Livermore. These denials have generated considerable anger throughout DoE in spite of the fact that DoE refuses to turn over evidence, repeatedly requested by DoD of a technology security plan for U.S. financed technology transfer programs. These programs alone are deserving of a major round of congressional oversight hearings.

#### *Technology Security vs. Balance of Trade*

For the Defense Department, both uniform and career civilian personnel, the philosophy of containment and technical superiority endures as an echoing mantra. The philosophy of the Department of Commerce, however, is one of economic engagement. This philosophy is generally agreed with, if not vigorously endorsed, by high level political appointees in all departments and agencies—including DoD.

These philosophies are, of course, diametrically opposed. Technology sold to a potential adversary that can be used to close the technical gap between its military systems and ours diminishes our national security. Any short-term gain in our economy would, with this result, represent at best a Pyrrhic victory. The flip side to the argument is that by engagement our economy is improved. This provides incentives for increased R&D to maintain the technical gap. The biggest beneficiary in such a cycle would be the defense industry, which would be called upon to save us from our own trade policy.

The National Science and Technology Council Committee for National Security listed three conclusions in its Phase 1 Progress report briefing (28 April 1997):

1. Government controls over controlled technology are effective within legal and regulatory guidelines, but license decisions are generally made based on narrow evaluation factors and so do not include analysis of multidimensional and long-term effects.
2. The government does not have a comprehensive understanding of the effects on U.S. national security interests of the international flow of both controlled and uncontrolled technology.
3. Collecting and analyzing sufficient data to develop a comprehensive understanding of the international flow of both controlled and uncontrolled tech-

nology and its effects on U.S. national interests to determine if adjustments to policy are called for would be a major undertaking.

Controlled technology is being redefined as uncontrolled technology at an unprecedented rate and is being exported despite the fact that the government does not have a comprehensive understanding of the effects on national interests. While claims of "regulatory effectiveness" are made relative to controlled technology (again, which is being nearly defined out of existence), the government has no clue concerning multidimensional and long-term effects. Why?—it would be a major undertaking and would almost certainly expose the recklessness of current export control policy.

The export control system works only when there is a strong degree of creative tension between agencies. This natural adversarial approach ensures full and open debate. In addition, it is vital that higher echelons be regular participants in the process, and this is only achieved through escalation of issues to their level. Pre-emptive surrender because one does not want to involve higher authorities or because one is afraid that escalation may be misinterpreted as a personal failure to resolve issues does a great disservice to the agency's mission, the process, and this nation's physical security. DoD's consistent pattern of weak or no opposition, capitulation, and failure to escalate issues is the single greatest factor in the loss of tension from the system and its consequent failure to execute its mission.

#### *Who's Next?*

Tragically, nowhere in this government are analyses being performed to assess the overall strategic and military impact of the technology decontrols I have described in my testimony before the Joint Economic Committee on June 17, 1997 and April 28, 1998. Nor are any analyses being performed on the impact of the day-to-day technology releases being made by the dysfunctional export licensing process. Yet it is precisely at the "big picture" level where the overall degradation of our national security will be revealed. Without such assessments the government will continue to blunder along endangering the lives of our citizens unnecessarily.

**USDP DAILY REPORT FOR  
09 April 1997**

**SPECIAL OPS AND LOW INTENSITY CONFLICT**

(U) FY 1996 REPORT TO CONGRESS PURSUANT TO 10 U.S.C. 2011, TRAINING OF SPECIAL OPERATIONS FORCES WITH FRIENDLY FOREIGN FORCES.

(U) PRESIDENT'S TRAVEL TO THE CARIBBEAN.

**STRATEGY & REQUIREMENTS**

(U) NDP DIRECTOR JEHN SPEAKS TO NORWEGIAN DELEGATION:

(U) PEACEKEEPING TRAINERS CONFERENCE:

(U) FAILED JUSTICE SYSTEMS:

**INTERNATIONAL SECURITY AFFAIRS**

(C) [                    ]

(C) [                    ]

(U) ZAIRE HEARING.

(C) [ ]

(C) [ ]

(C) [ ]

(U) POTUS CARIBBEAN SUMMIT COMMUNIQUÉ DRAFTING MEETING.

(S) [ ]

(U) HAITI/LABOR UNREST.

(U) MEETING WITH GUATEMALAN DATT.

(U) PANAMA.

(C) [ ]

## INTERNATIONAL SECURITY POLICY

(U) CWC UPDATE.

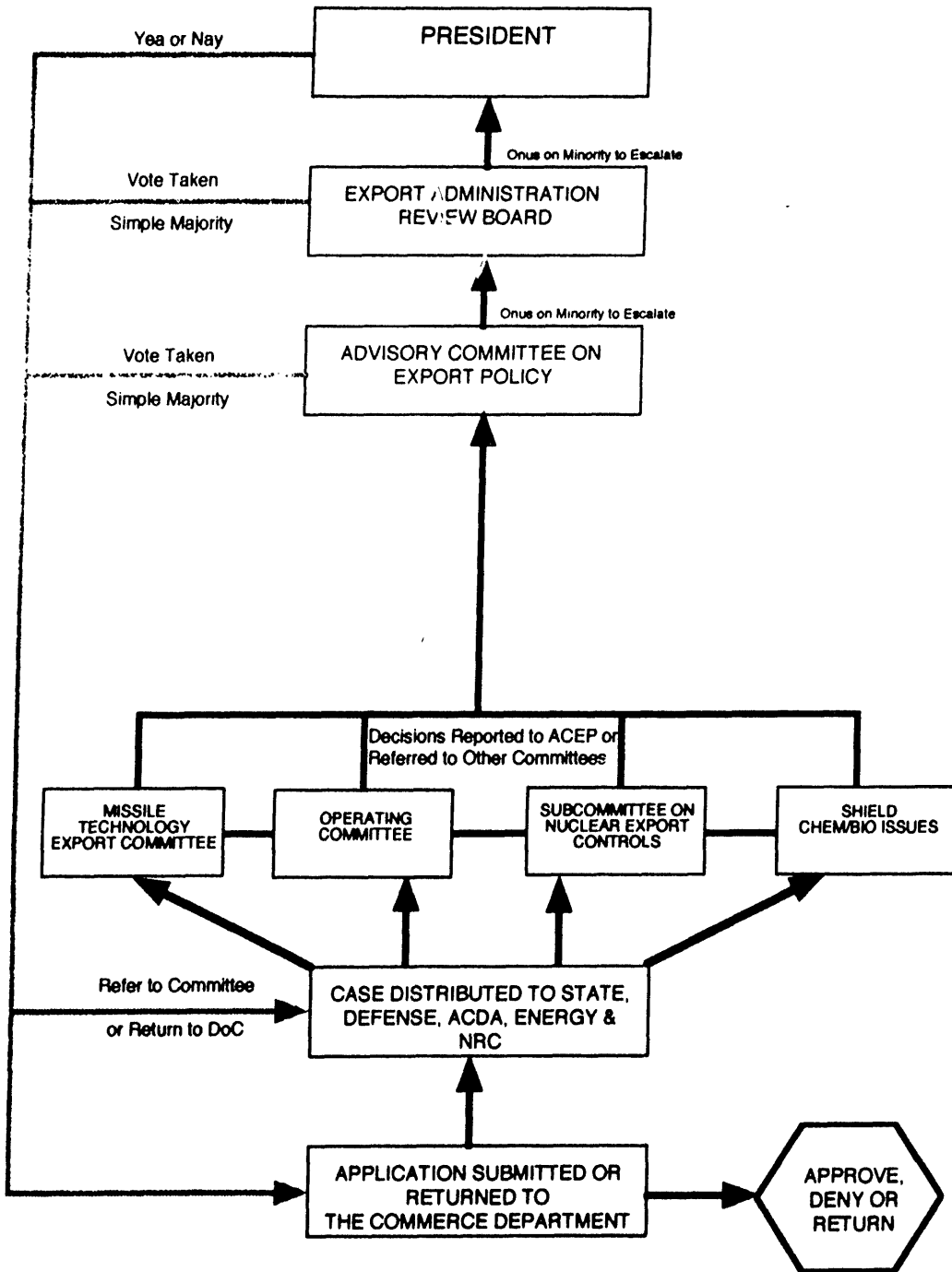
(FOUO) NSC COMMENTS ON AIRBORNE LASER:

## POLICY SUPPORT

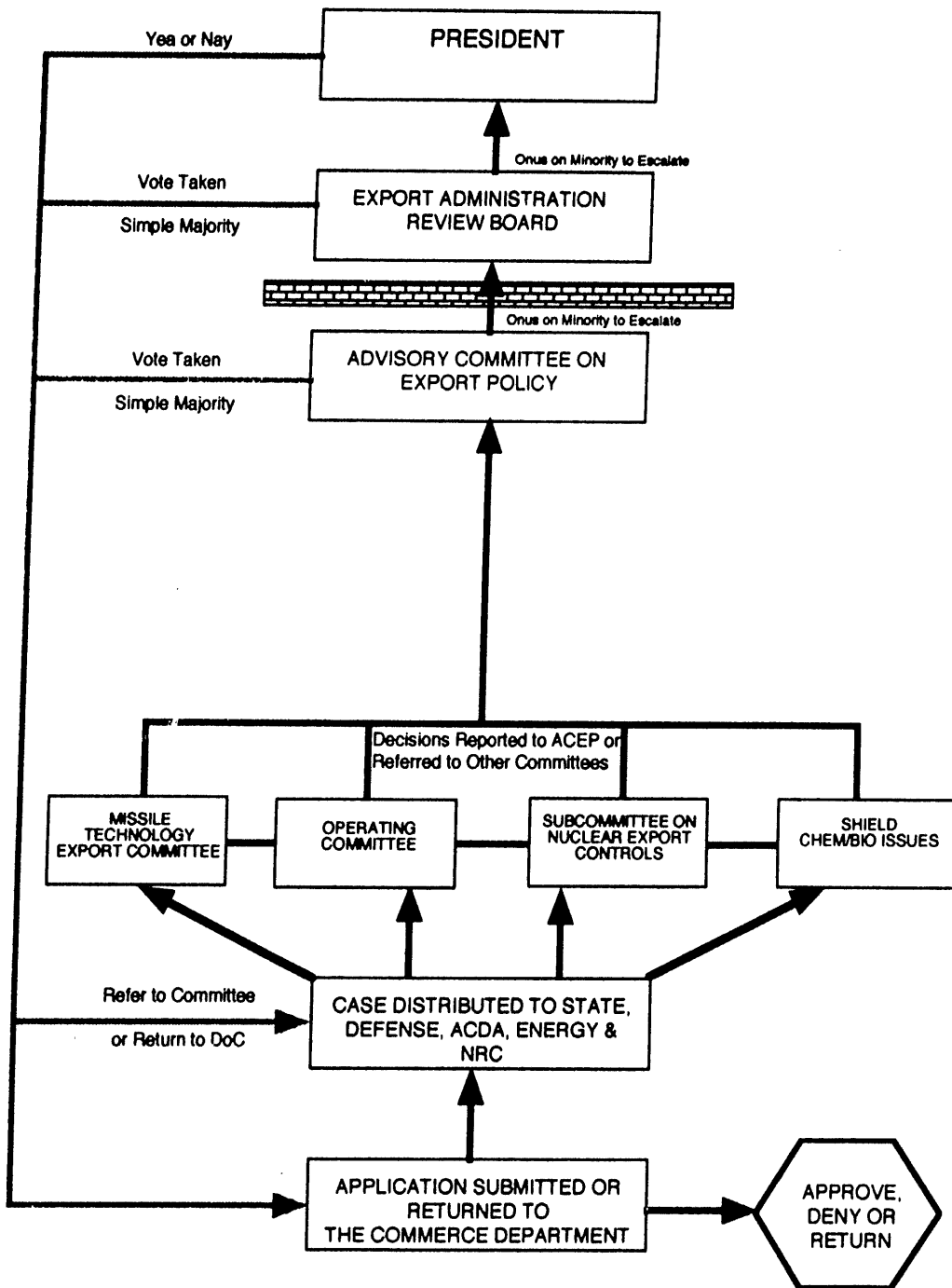
(FOUO) ENCRYPTION.

(U) USAF SPECIAL OPERATIONS SCHOOL.

## EXPORT LICENSING ESCALATION PROCESS Pre- 1992

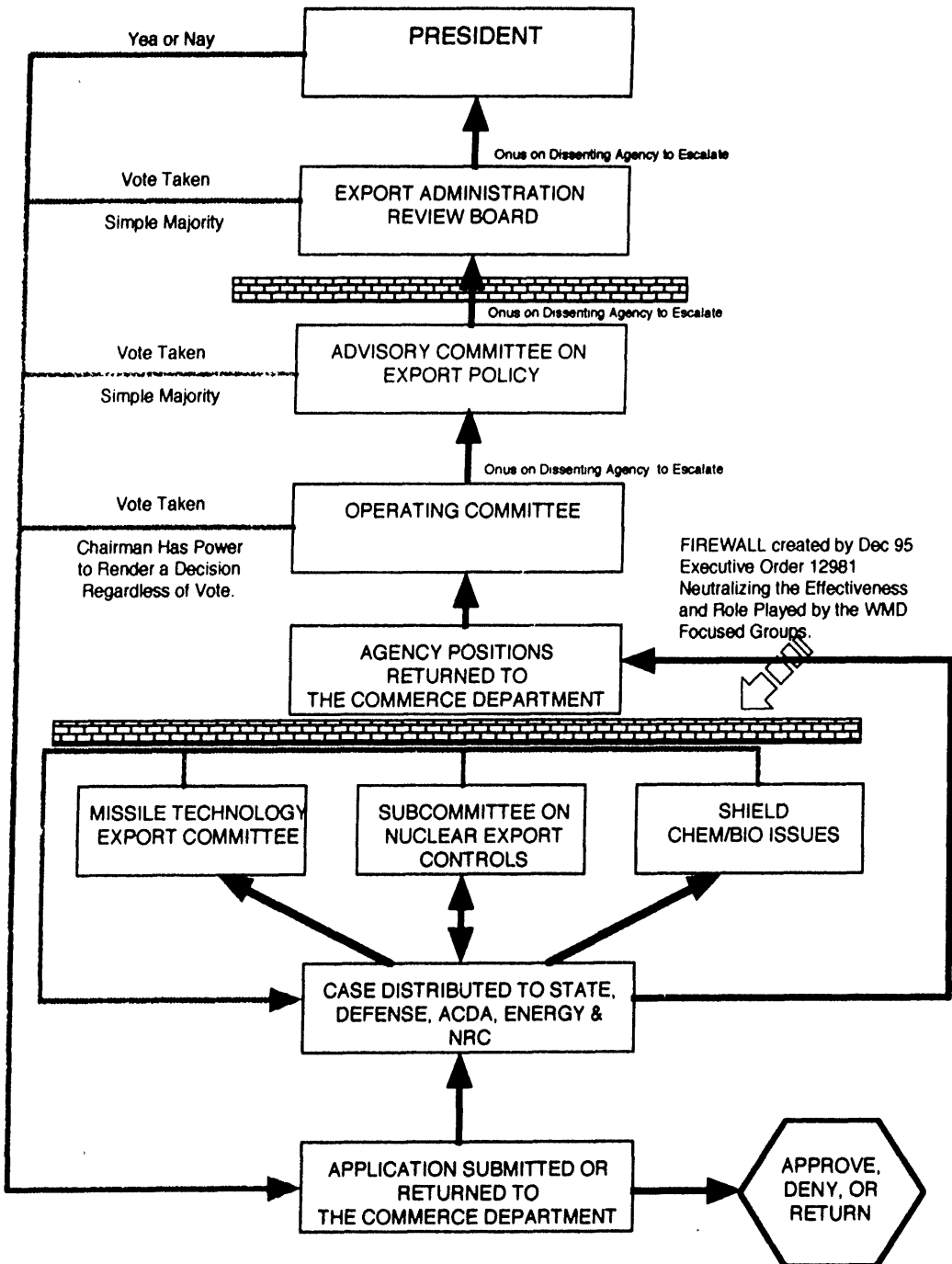


## EXPORT LICENSING ESCALATION PROCESS 1992 -1996



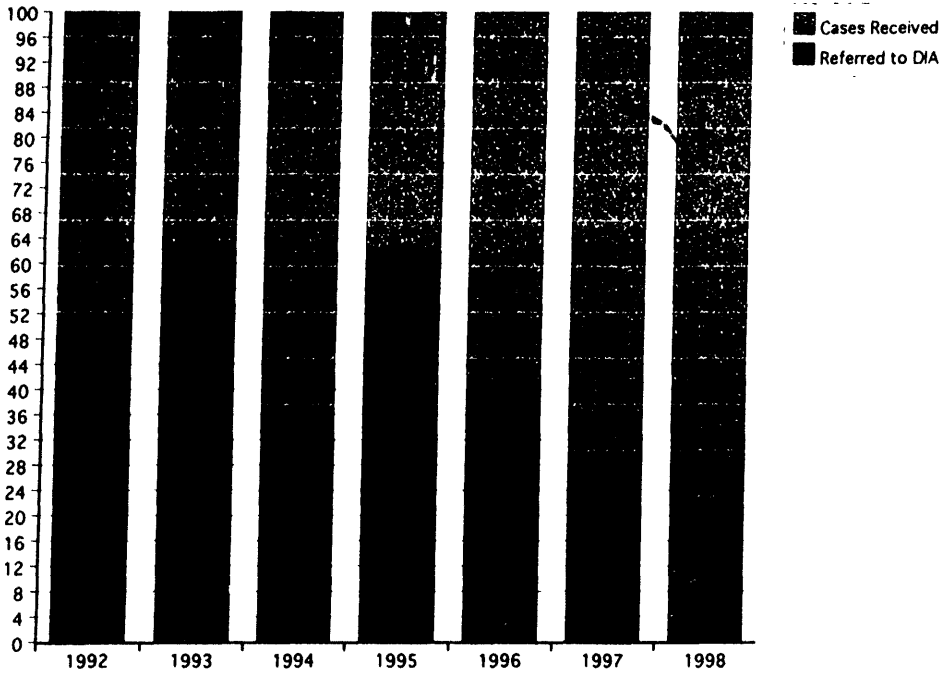


# EXPORT LICENSING ESCALATION PROCESS 1996 - PRESENT

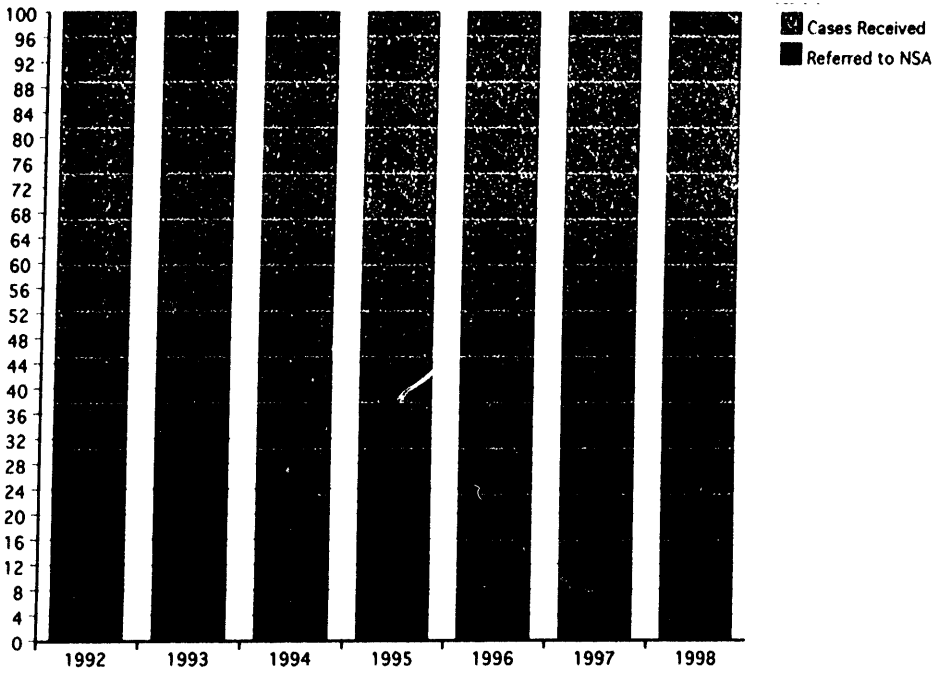


ATTACHMENT 3

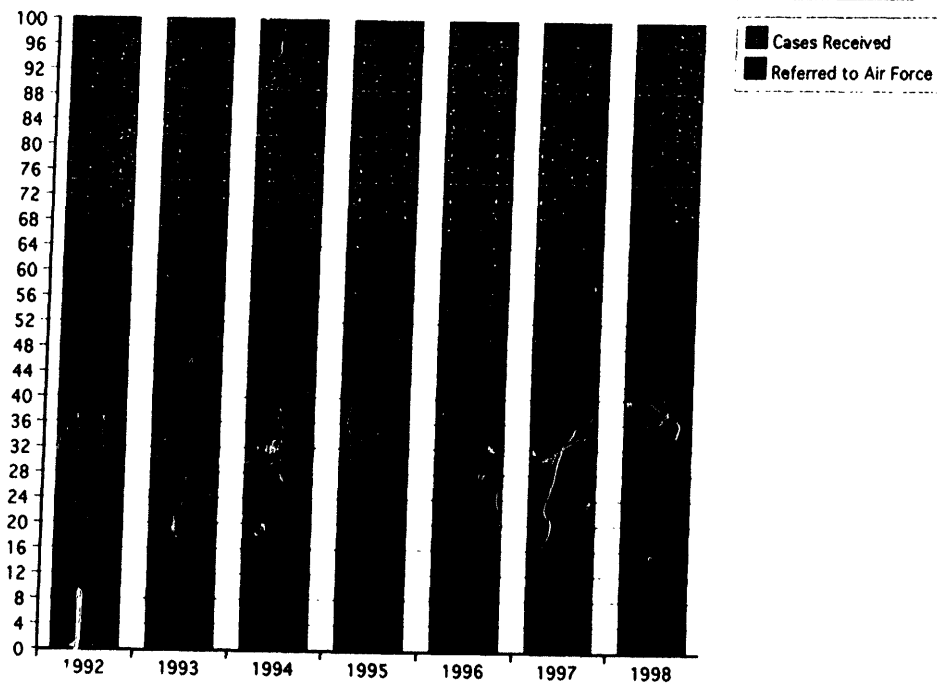
**Percent of Cases Referred to DIA**



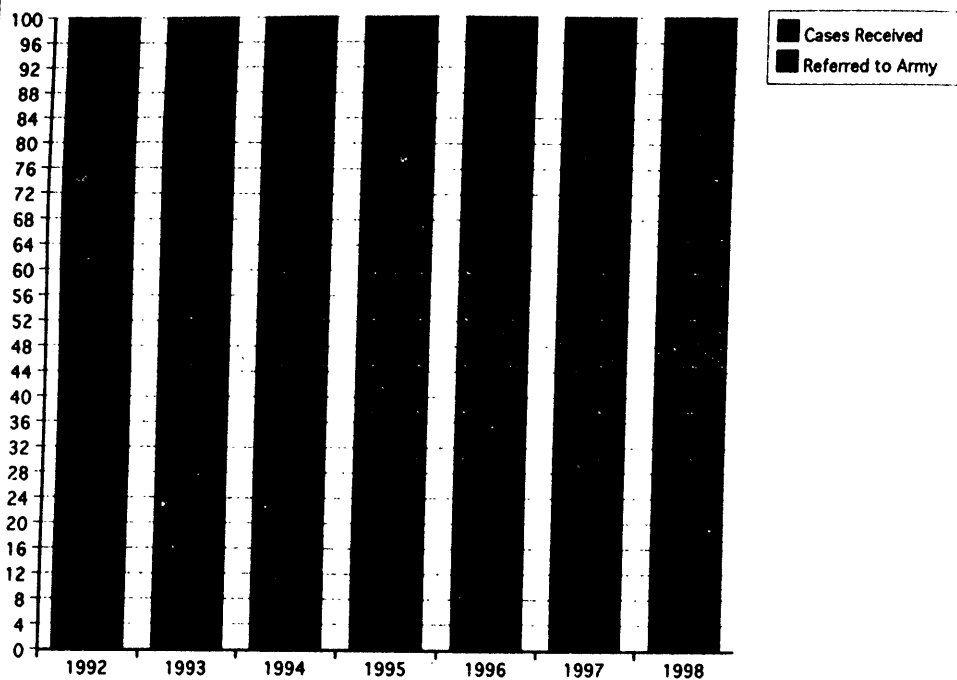
### Percent of Cases Referred to NSA



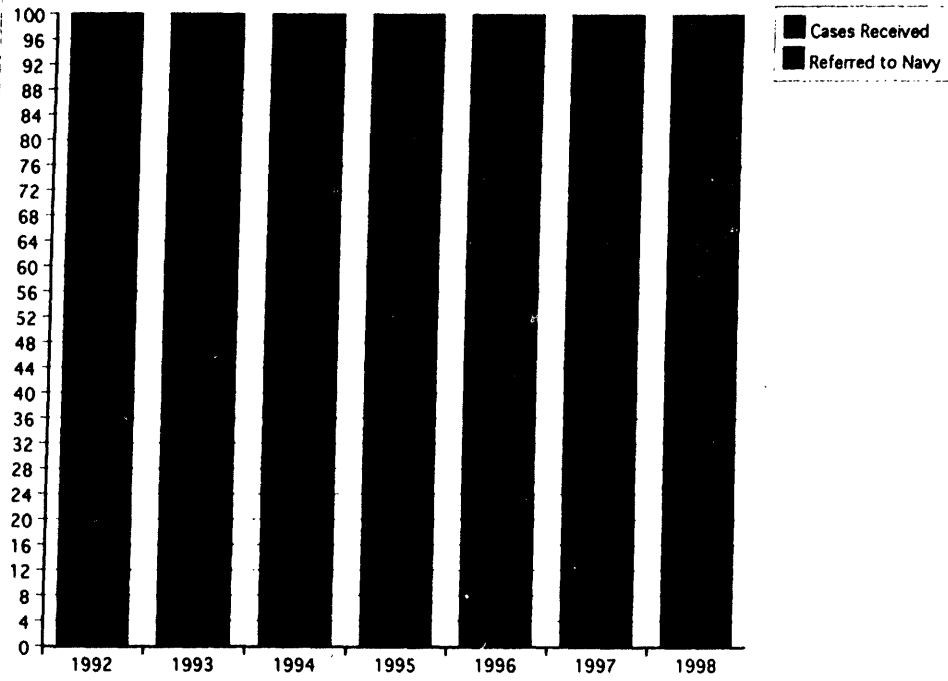
### Percent of Cases Referred to AIR FORCE



### Percent of Cases Referred to ARMY



### Percent of Cases Referred to NAVY



ATTACHMENT 4

DISTRIBUTION: TD ~~DX~~ TSO

SUBJECT: \_\_\_\_\_

SUSPENSE: \_\_\_\_\_

\_\_\_ 1. NO OBJECTION.

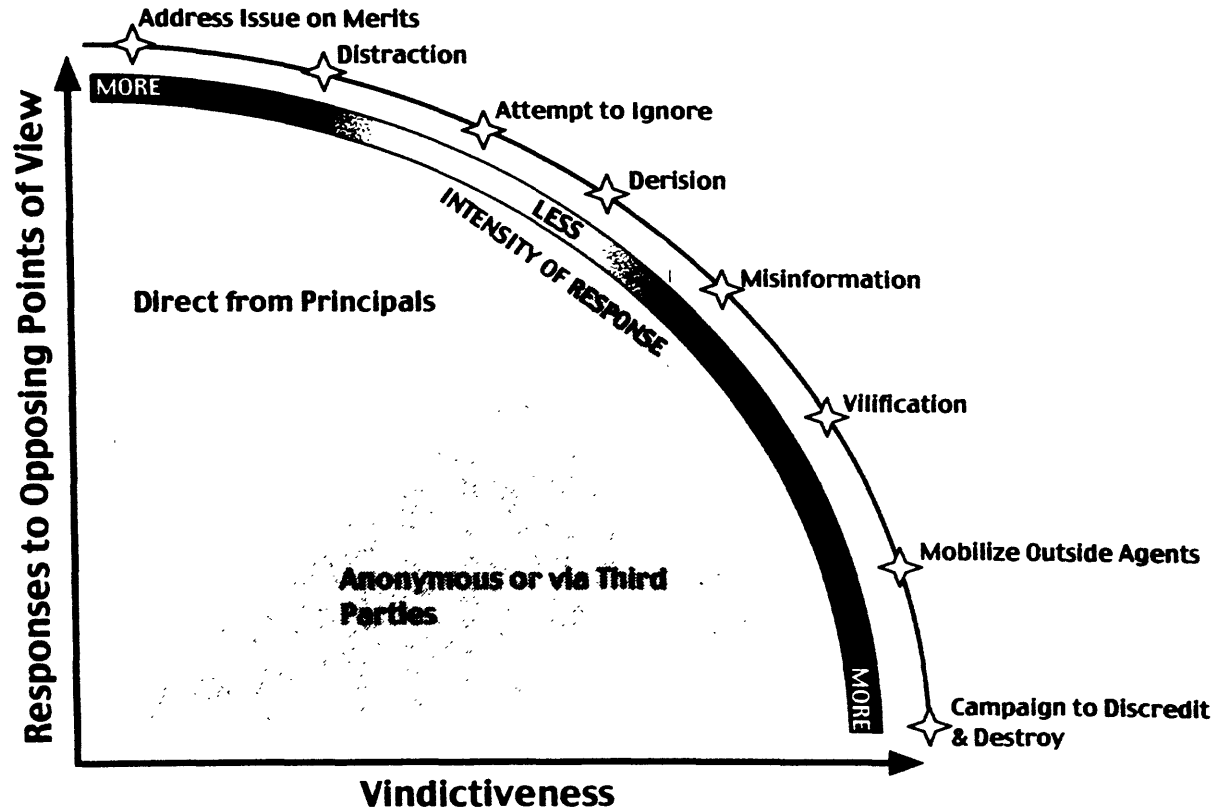
\_\_\_ 2. NO OBJECTION SUBJECT TO:

SIGNATURE OF ACTION OFFICER: \_\_\_\_\_ PHONE: \_\_\_\_\_

DATE RETURNED TO PD/AC&PA: \_\_\_\_\_

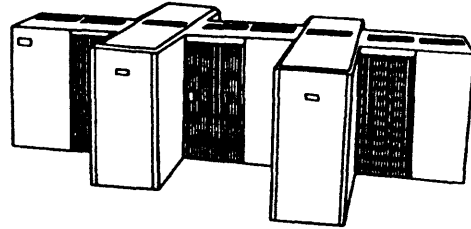
FOR ADDITIONAL INFORMATION, PLEASE CONTACT: \_\_\_\_\_

# Shooting the Messenger





# HIGH PERFORMANCE COMPUTERS



The decontrol of all computers below the 500-CTP threshold would suddenly make available to any proliferant state-of-the-art CAD/CAM or signal-processing workstations that are more capable than anything in the US defense sector. An example of the strategic importance of such access can readily be seen in the aerospace/missile development field. High-speed, ultra-precise, and graphic-intensive workstations employing advanced (but recently decontrolled) software such as Computational Fluid Dynamics or Finite Element Analysis would obviate the need for expensive, thermally conditioned, wind tunnel facilities. The ability to rapidly model and alter size, shape, density and material characteristics in three dimensions and real time is what these workstations were designed for. A proliferant country could then totally conceal its R&D efforts for, say, ballistic or cruise missiles until it has developed a flyable prototype. Workstations at this level also play a pivotal role in the design and development of microprocessors, integrated circuits, dense memory, etc., thus providing the critical enabling technology for indigenous commercial and military devices.

A severe impact would also occur in the areas of ASW, STEALTH, C<sup>3</sup>I, C<sup>4</sup>I, Tactical Weather Forecasting, Nuclear, Chemical, Biological weapons development as well as each of the 21 critical military technologies identified in the DoD Critical Technologies Plan (see below). This impact is directly related to the computational, memory, speed, storage, networkability, communications, and graphics performance of systems in the range decontrolled.

## STRATEGIC IMPACT

An analysis of the technology embodied in the North American Aerospace Defense Command (NORAD) reveals that the continual erosion of export controls has resulted in the decontrol of virtually every system or sub-system at the heart of this nation's strategic and ballistic missile defense capability. Examples include:

- Fiber Optic Communications systems and Cables
- Large format tactical displays
- Computers and Workstations
- Advanced communications and encryption devices
- Advanced Radars
- Advanced Signal Processing Systems

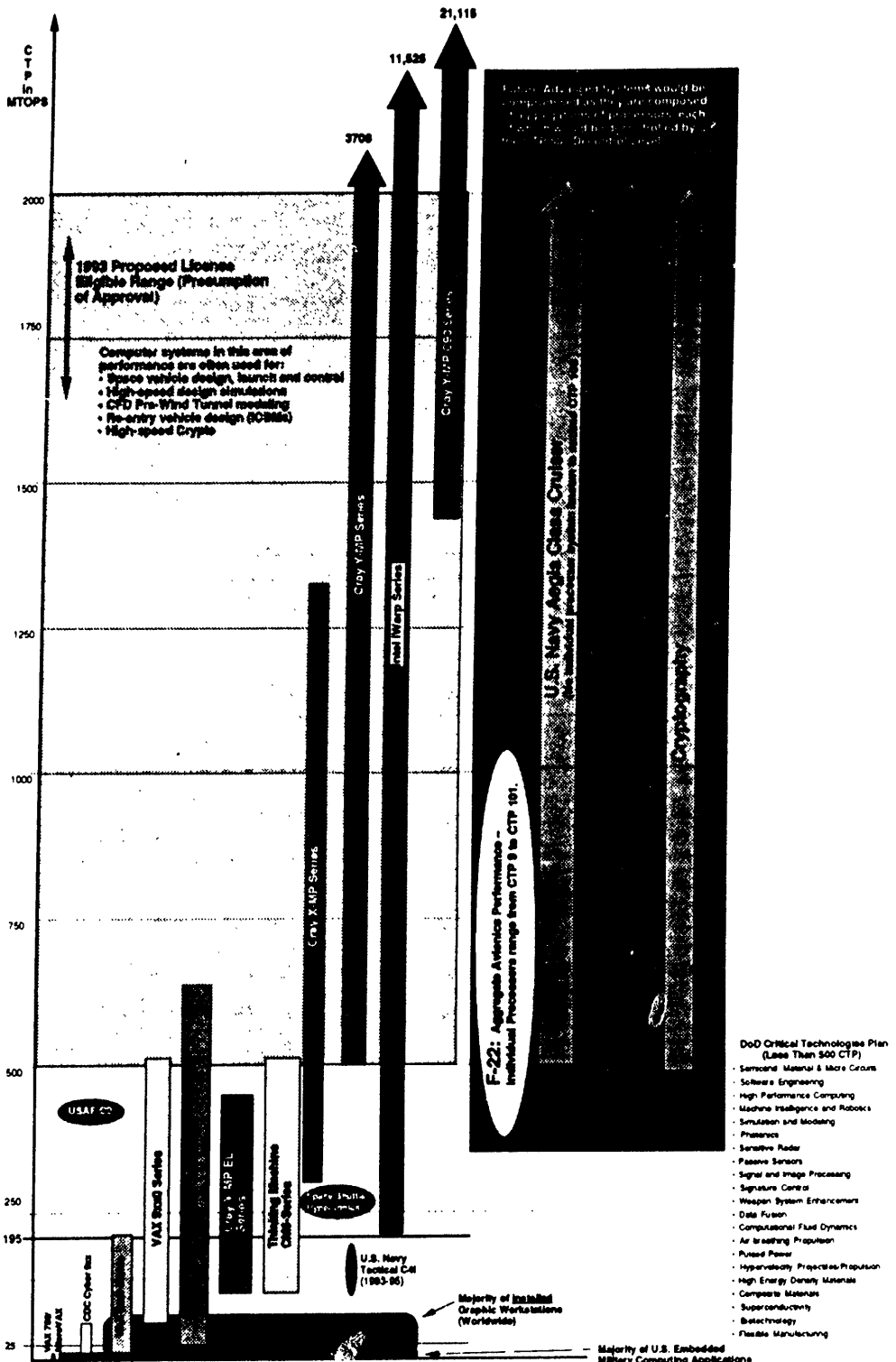
NORAD has just brought up to operational status an upgraded computer system to receive and integrate data from its region and sector operations control centers. This \$10 million system consists of two types of Hewlett-Packard computers rated at 189 and 99 - 300 MTOPs respectively. This newly decontrolled system is illustrative of the strategic applications which will quickly be made available to potential adversaries.

The decontrol of such powerful computing/analytical platforms obviates the need for large computing facilities or mainframe supercomputers such as a CRAY for weapons design, testing or command and control. Coupled with the recent and anticipated relaxations in the area of telecommunications, this makes rapidly relocatable and survivable C<sup>3</sup>I possible and testing of advanced weapons highly portable, concealable and inexpensive.

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## The 21 Critical Technology areas:

- Semiconductor Materials and Micro Circuits
- Software Engineering
- High Performance Computing
- Machine Intelligence and Robotics
- Simulation and Modeling
- Photonics
- Sensitive Radar
- Passive Sensors
- Signal and Image Processing
- Signature Control
- Weapon System Enhancement
- Data Fusion
- Computational Fluid Dynamics
- Air-breathing Propulsion
- Pulsed Power
- Hypervelocity Projectiles and Propulsion
- High Energy Density Materials
- Composite Materials
- Superconductivity
- Biotechnology
- Flexible Manufacturing



CTP Ranges of Computer Systems Used for High-end Computing Applications (1976-1992) Such as Computational Fluid Dynamics, Weather, Sound Analysis, High-performance Jet Engine Design, etc. and Some Advanced Military Weapons Systems

# IMPACT OF HOT SECTION DECONTROL

Decontrol by metaphor will yield the greatest results. Terms such as "Hot section" have no intrinsic meaning and can be defined to fit a particular audience. In addition, use of the term carries a certain rhetorical appeal as it can be argued that limited risks are being taken because it is only for one small part of an engine and will be limited to civil engines. This will effectively mask the equal utility of the underlying technology in military engines. Technologies, Materials, and components which will become free from export restraints by decontrol of "civil" hot sections include:

## Materials:

- Superalloys
- Ceramic Matrix Composites
- Metal Matrix Composites
- Organic Matrix Composites
- High Temperature Bearing Steels
- Intermetallics
- Powder Metallurgy
- Fluorinated Polyimides
- High Modulus Organic Fibers
- Elastomers, Monoplasts, Phenolic Resins
- Carbon/Carbon Matrix
- Silicon Carbide Matrices

## Coatings:

- Aluminides
- Platinum-Aluminides
- Silicides
- Carbides
- Refractory Metals

## Coating Systems:

- Chemical Vapor Deposition (CVD)
- Physical Vapor Deposition (PVD)
- Thermal-Evaporation PVD (TE-PVD)
- Electron-Beam PVD (EB-PVD)
- PVD-Resistive Heating
- PVD-Cathodic Arc Discharge
- Pack-Cementation
- Plasma Spraying
- Slurry Deposition
- Sputter Deposition
- Ion Implantation
- Ion Plating
- Laser Hardening

## Bearings:

- Solid Ball and Roller
- Gas-Lubricated Foil Bearings
- Hydrostatic Fluid Film Bearings
- Active Magnetic Bearings
- Shaverth & Adore CAD Programs

## Software:

- Gas Turbine CGD s/w
- 2D or 3D Viscous s/w for Engine
- Flow Modeling

## Technology:

- Thin Wall Cooling
- Hot Isostatic Presses
- Machine Tools
- Electro-discharge Machines
- Ceramic Core Manu. Equip.
- Ceramic Shell Wax Pattern Prep. Equip.
- Gas Turbine Brush Seal Manu. Equip.
- Tools, Dies, & Fixtures for Solid State Joining
- Precision Hole Drilling
- Single Crystal. Directionally Solidified Blade Manu. Equipment
- Precision Investment Casting
- Water Jet Machining
- Forging
- Diffusion Bonding
- Cooled & uncooled turbine blades
- Airfoil to disk techniques

## Components:

- Heat Exchangers
- Single Crystal. Directionally Solidified Blades
- Ceramic Cores & Shells for Airfoils & Vanes
- Thermally Decoupled Combustion Liners
- Multi-domed Combustors
- Non-Metallic Liners

# Synergistic Effect of Decontrolling Laser Technology

<b>Solutions</b>	<b>Costs</b>	<b>Effectiveness</b>
<b>Sealed Cockpit:</b> No windows or protective shell around pilot when entering high threat environment.	Tens of \$ Billions	Most Effective. Technology does not yet exist. Current sensors are as vulnerable as human eye to laser exposure.
<b>Brilliant stand-off weapons:</b> Autonomous fire and forget, high precision, munitions carriers using multi spectral sensor arrays.	\$ Billions	Poor Tactical Substitute. Extreme cost, small warheads, on-board sensors vulnerable.
<b>Volumetric on-board defense system:</b> Mini-lasers on aircraft project diffuse Laser pattern to polarize or ionize flight envelope as barrier to hostile Lasers.	\$ Billions	Doubtful utility. Technology does not yet exist. Special sensors needed to "see through defense barrier, active barrier will increase electro-optical detectability of aircraft.
<b>Countermeasures:</b> Reflective, scattering, absorptive, material deployed between laser source and target.	Hundreds of \$ Millions	Doubtful utility against fixed targets, ineffective against mobile targets.
<b>Anti-Laser homing missiles:</b> Detect and ride beam back to source and destroy it.	Hundreds of \$ Millions	Minimally Effective, easy to counter.
<b>Personal protective devices:</b> Eyeglasses, shutters, visors, etc.	Tens of \$ Millions	Least effective, narrow bandwidth

# At 10,000 Meters Equivalent to Firing a 100 m Wide Bullet



- Easy Sell to public**
- Very large pay-off for industrial base**
- Use against civil aviation**
- Use as assassination or terrorist weapon**
- Humanitarian issue in U.N.**
- Tactical weapon requires non-linear response**
- More usable than Chem., Bio., or Nuclear weapons**
- \$40 Million plane w/\$20 million laser protection  
against a \$50,000 weapon to deliver \$20,000  
worth of explosives**

20 mrad Beam Divergence	
1,000 m	= 13 m Blinding Zone
2,500 m	= 33 m Blinding Zone
5,000 m	= 52 m Blinding Zone
10,000 m	= 104 m Blinding Zone

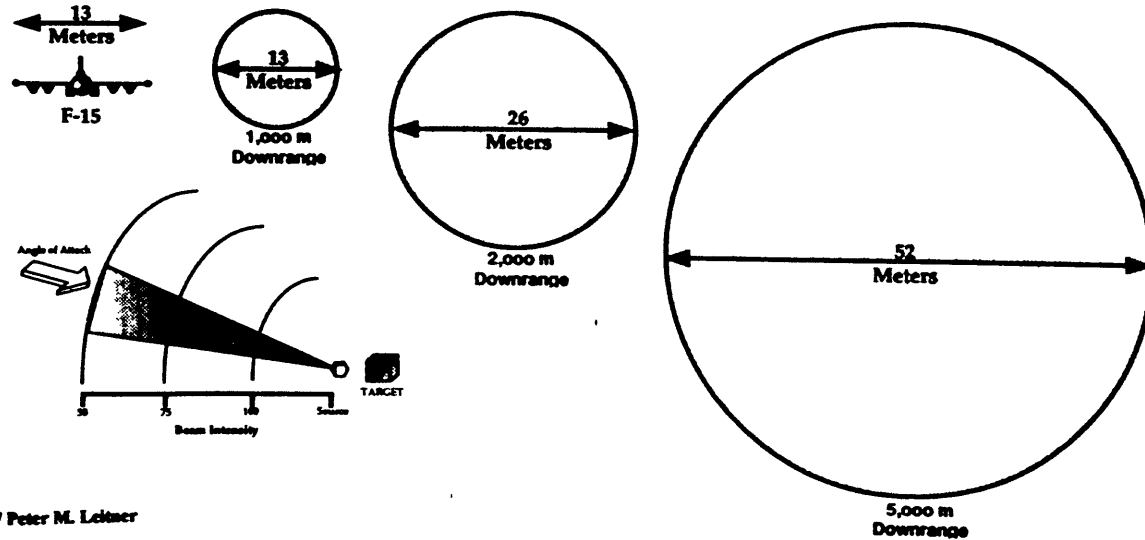
Once dazzled, a pilot has less than 28 seconds to  
regain sight before ejecting or losing control



## Tactical Use of Laser Blinding Weapons

Range (Meters)	Relative Beam Intensity	Volume of Airspace Effected	Lethality Within Envelope	Mission Consequences
5,000	100 %	3,536,109 m <sup>3</sup>	<i>Hemorrhage. Permanent Blindness</i>	<i>Loss of Aircraft and Crew</i>
10,000	75 %	28,288,872 m <sup>3</sup>	<i>Retinal Damage, Cataracts Form, Permanent Damage</i>	<i>Loss of Aircraft and Crew</i>
15,000	50 %	95,474,943 m <sup>3</sup>	<i>Dazzling, One Second to Two Minutes Recovery Time</i>	<i>Reduced Effectiveness to Total Loss Depending Upon Pilot Reaction</i>

### DOWNRANGE ILLUMINATION FIELD















# FUTURE WEAPONS SYSTEMS: Microelectronic Technologies Required

- ★ ESSENTIAL
- IMPORTANT
- HELPFUL

Automated Production	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
CAD Equipment	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Chemical Plasma Etchers	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Clean Room Design and Filters	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Coaxial Crystal Pullers	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
E-Beam Mask Makers	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Epitaxial Growth (VPE, MBE)	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
High-Power Packaging Know-How	★	★	●		●	★	●	●	★	★		○	★	★	●	★	★	★	★
High-Purity Polysilicon	★	★	★		●	★	●	●	★	★			★		○				★
High-Speed Gate Know-How	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Ion Implanters	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Ion Millers	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Know-How to Optimize for Military												○	★	★	●	★	★	★	★
Low-Pressure CVD	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Magnetically-Enhanced Sputtering	★	★	●		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Materials Characterization	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Optimized Layout Know-How	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Parametric Testers	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Reactive Ion Etchers	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Scanning & Stripping Prod. Aligners	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
VLSI Circuit Testers	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Water Probe Testers	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
Wire Bonders	★	★	★		●	★	●	●	★	★	●	○	★	★	●	★	★	★	★
100+ Pin Packaging Know-How	★		●							★	●	○	★	★	●	★	★	★	★

ATTACHMENT 8

**UNITED STATES OF AMERICA**

*Congress of the United States*

SUBPOENA  
000002

To Dr. Peter Leitner

*Greetings:*

*Pursuant to lawful authority, YOU ARE HEREBY COMMANDED to appear before the COMMITTEE ON GOVERNMENTAL AFFAIRS of the Senate of the United States, on June 25, 1998, at 10:00 o'clock a.m., at its Committee Room, 342 Dirksen Senate Office Building, Washington, D.C. 20510, then and there to testify what you may know relative to the subject matters under consideration by said Committee.*

*Hereof fail not, as you will answer your default under the pains and penalties in such cases made and provided.*

To \_\_\_\_\_ to serve and return.

Given under my hand, by authority vested in me by the Committee, on this 17<sup>th</sup> day of June, 1998.

\_\_\_\_\_  
Chairman, Senate Committee on Governmental Affairs

## PREPARED STATEMENT OF MR. MILLER

Mr. Chairman, I am here today in response to a request by the Committee to discuss how the Office of the Secretary of Defense is organized to review the national security implications of the potential export of arms and dual use goods, technologies and services from the United States under licenses granted by the Department of State and the Department of Commerce, respectively.

In my opening remarks today, I would like to summarize my responsibilities within the Office of the Under Secretary of Defense for Policy since 1993 and outline the reporting chain during that time for the Defense Technology Security Administration, which has the principal responsibility with the Department for developing and coordinating Department of Defense positions on exports controls.

From mid-1993 until September 1996 I served as the Principal Deputy Assistant Secretary of Defense for International Security Policy. Dr. Ashton B. Carter was the Assistant Secretary for International Security Policy. The portfolio of that office was broad and included: Nuclear forces policy; counterproliferation policy, which includes export control policy; DoD-MoD interaction in Russia, Ukraine and Eurasia; and threat reduction policy, including arms control and cooperative threat reduction. From September 1996 until November 1997 I was the Acting Assistant Secretary of Defense for International Security Policy. The position of Assistant Secretary for International Security Policy was eliminated under Defense Reform Initiative announced by Deputy Secretary of Defense Hamre in November 1997. At that time the functions of the office of International Security Policy were combined with other functions to form the Office of the Assistant Secretary of Defense for Strategy and Threat Reduction. I became a Principal Deputy Assistant Secretary of Defense for Strategy and Threat Reduction in November 1997. The Assistant Secretary is Dr. Edward L. Warner, III.

Mr. Chairman, DoD plays an active role in the development and implementation of U.S. export control policy. Within DoD, this role is undertaken by the Defense Technology Security Administration (DTSA). With a staff of less than 120, DTSA performs this role in a variety of ways including reviewing over 21,000 export licenses per year referred by the State and Commerce Departments, ensuring that items and technologies that are important to our security interests are adequately controlled by reviewing export control lists and regulations, and assisting U.S. Government efforts to enforce export controls through safeguards. DTSA is an active and vociferous spokesman in the interagency process for protecting national security interests. DTSA is respected by other agencies and the exporting business community as an organization that brings solid technical analyses to bear on export control matters in a manner that is effective in protecting U.S. national security interests.

From 1993 until November 1997, the DTSA, which is a field organization of the Department of Defense, reported ultimately to the Assistant Secretary for International Security Policy. In the same manner, DTSA now reports to its successor, the Assistant Secretary for Strategy and Threat Reduction. Under the Defense Reform Initiative, DTSA is scheduled to become part of the new Defense Threat Reduction Agency reporting directly to the Under Secretary of Defense for Acquisition and Technology, with day-to-day oversight provided by the Director for Defense Research and Engineering. Policy oversight and direction will continue to be provided from the office of the Under Secretary of Defense for Policy, especially for export control matters primarily by the Assistant Secretary for Strategy and Threat Reduction.

When Dr. Carter reorganized the office of International Security Policy shortly after he became Assistant Secretary in 1993, DTSA was assigned to report to Dr. Carter through the Deputy Assistant Secretary for Counterproliferation, Dr. Mitchel Wallerstein. This was done to provide greater day-to-day oversight of export control policy directly from International Security Policy. Dr. Wallerstein, with a more limited span of responsibility than Dr. Carter, could devote a greater part of his time to export control issues than Dr. Carter. When difficult or controversial issues arose, Dr. Carter—and I, on occasion—were consulted on the issues by Dr. Wallerstein in order for Dr. Carter to provide direction. When Dr. Carter departed in 1996 and I assumed the position of Acting Assistant Secretary, any controversial issues were brought to me by Dr. Wallerstein.

Following the Defense Reform Initiative's changes and until DTSA is moved to the Defense Threat Reduction Agency, DTSA reports to Dr. Warner through the Deputy Assistant Secretary of Defense for Cooperative Threat Reduction, Dr. Susan Koch, and then through me. In the reorganization, Dr. Koch assumed Dr. Wallerstein's responsibility for non-proliferation issues. Mr. David Tarbell, the Current Director of DTSA, assumed that position in August 1994.

Mr. Chairman, this concludes my summary of organizational and individual responsibilities for export controls within the Department of Defense and the role of

the Department in protecting United States national security interests in the inter-agency export control process.

I will be pleased to answer questions by the Members of the Committee.

Hearing date: 25 June 1998

Committee: Senate Governmental Affairs

Senator: Not identified

Witness: Mr. Miller

Question #a

Question: Please provide the committee with the following:

a. A list of hot section technology for military and civilian aircraft export license applications forwarded to the Department of Defense from the State Department for review from December 1996 through the present.

Answer:

These license requests can be divided into three basic categories: {1} "marketing data"; {2} "engine component data" (i.e. request to manufacture specific hot section components), and {3} "maintenance data". For marketing license requests DOD has consistently recommended that hot section technical data (e.g., drawings, specifications, design and manufacturing know-how) not be released. For license requests concerning offshore procurement of specific hot section components, DOD will generally limit the transfer to finish machining operations only with all castings and forgings being supplied by U.S. vendors. The exceptions to this approach are for hot section components that are associated with mature engine programs. The final category is related to license requests in support of maintenance operations. In these license requests DOD will recommend that contractors limit the transfer of technology with respect to detail design and manufacturing know-how for the hot section components. The identities of the companies have been withheld in order to protect proprietary information.

Company A.

Export License requests:

(DOS/ITAR licenses)

Case # Recommendation	Country	Subject	DOD
737621	Sweden	Engine marketing license	No hot section data is releasable
733908	Australia	Engine marketing license	No hot section data is releasable
729984	Singapore	Engine marketing license	No hot section data is releasable
727154	Singapore	Engine marketing license	No hot section data is releasable
724942	India	Engine marketing license	No hot section data is releasable
722036	Turkey	Engine marketing license	No hot section data is releasable
720782	Russia	Engine marketing license	No hot section data is releasable
719932	Poland	Engine marketing license	No hot section data is releasable

719931	Argentina	Engine marketing license	No hot section data is releasable
708306	Israel	Engine marketing license	No hot section data is releasable
695617	India	Engine marketing license	No hot section data is releasable
254-88D	Taiwan	Engine component data	Approved with conditions
1508-97	Spain	Engine maintenance data	Approved with conditions
1397-97	Germany	Engine maintenance data	Approved with conditions

Company B.  
(DOS/ITAR licenses)

<b>Case # Recommendation</b>	<b>Country</b>	<b>Subject</b>	<b>DOD</b>
861-98	UK	Engine component data	In process - open case

Company C.

(DOS/ITAR licenses)

<b>Case # Recommendation</b>	<b>Country</b>	<b>Subject</b>	<b>DOD</b>
737138	UK	Engine component data	Approved
735193	UK	Engine component data	In process - open case
732376	UK	Airfoil design methods - test data	Approved with conditions
691930	UK	Engine component data	Approved with conditions
544-97	UK	Turbine "Key" design systems	Returned w/o action (see 1361-97)
1361-97	UK	Turbine "Key" design systems	Approved with conditions
065-97	UK	Advanced materials data	Approved with conditions

Company D.  
(DOS/ITAR licenses)

<b>Case # Recommendation</b>	<b>Country</b>	<b>Subject</b>	<b>DOD</b>
E-97-146	Japan	Export violation (T700 engine data)	In process
871-96B	Japan	Engine component data	Approved with conditions
775-87I	Japan	Manufacture engine components	Conditional (see E-97-146)
741038	Korea	Engine marketing license	No hot section data is releasable
740000	various	Engine marketing license	No hot section data is releasable
739922	Israel	Engine marketing license	No hot section data is releasable



739317	UAE	Engine marketing license	No hot section data is releasable
737045	Australia	Engine marketing license	No hot section data is releasable
736906	So. Africa	Engine marketing license	No hot section data is releasable
736501	Australia	Engine marketing license	No hot section data is releasable
736347	Saudi Arabia	Engine marketing license	No hot section data is releasable
736211	Saudi Arabia	Engine marketing license	No hot section data is releasable
735938	France	Engine marketing license	In process
735923	Spain	Engine marketing license	No hot section data is releasable
734038	So. Africa	Engine marketing license	Returned w/o action
733006	Israel	Engine marketing license	No hot section data is releasable
732711	So. Africa	Engine marketing license	Returned w/o action
732492	Turkey	Engine marketing license	No hot section data is releasable
732317	Japan	Engine marketing license	No hot section data is releasable
731488	Spain	Engine marketing license	No hot section data is releasable
727847	Singapore	Engine marketing license	No hot section data is releasable
727756	Korea	Engine marketing license	No hot section data is releasable
727747	New Zealand	Engine marketing license	No hot section data is releasable
727746	New Zealand	Engine marketing license	No hot section data is releasable
727383	Sweden	Engine marketing license	No hot section data is releasable
725209	Australia	Engine marketing license	No hot section data is releasable
724953	Spain	Engine marketing license	No hot section data is releasable
724584	India	Engine marketing license	No hot section data is releasable
723886	Taiwan	Engine component data	Approved with conditions
722857	Japan	Engine marketing license	No hot section data is releasable
722751	Sweden	Engine marketing license	Returned w/o action
722750	Germany	Engine marketing license	No hot section data is releasable
721928	Turkey	Engine marketing license	No hot section data is releasable
719841	Brazil	Engine marketing license	Denied
719677	Turkey	Engine marketing license	No hot section data is releasable
717965	Slovenia	Engine marketing license	No hot section data is releasable
717814	Romania	Engine marketing license	No hot section data is releasable
717813	Spain	Engine marketing license	No hot section data is releasable
717790	Australia	Engine marketing license	No hot section data is releasable
717357	Israel	Engine marketing license	No hot section data is releasable
717332	Greece	Engine component data	Approved with conditions
717036	Sweden	Engine marketing license	Returned w/o action
713422	Greece	Engine marketing license	No hot section data is releasable
711306	France	Engine marketing license	No hot section data is releasable
711158	Sweden	Engine marketing license	No hot section data is releasable
710358	Germany	Engine marketing license	No hot section data is releasable
710130	Romania	Engine marketing license	No hot section data is releasable

708514	Slovenia	Engine marketing license	No hot section data is releasable
705840	Japan	Engine marketing license	No hot section data is releasable
703759	So. Korea	Engine component	Approved with conditions
703758	Chile	Engine marketing license	No hot section data is releasable
703732	Sweden	Engine marketing license	No hot section data is releasable
703419	Chile	Engine marketing license	No hot section data is releasable
703031	Italy	Engine marketing license	No hot section data is releasable
700059	Brazil	Engine marketing license	No hot section data is releasable
699541	Greece	Engine marketing license	No hot section data is releasable
699304	UK	Engine marketing license	Approved
697349	Saudi Arabia	Engine marketing license	No hot section data is releasable
694906	Norway	Engine marketing license	No hot section data is releasable
694788	Germany	Engine component data	Approved with conditions
694787	Brazil	Engine component data	Approved with conditions
694786	UAE	Engine component data	Approved with conditions
694662	Australia	Engine component data	Approved with conditions
694661	various	Engine component data	Approved
694660	Australia	Engine maintenance data	Approved with conditions
692780	Philippines	Engine marketing license	No hot section data is releasable
692788	Chile	Engine marketing license	Returned w/o action
692696	Egypt	Engine marketing license	Returned w/o action
692695	Greece	Engine marketing license	No hot section data is releasable
654-97	Romania	Engine component data	Approved with conditions
563-98	Canada	Engine component data	Approved with conditions
535-97	various	Engine component data	Approved with conditions
182-97	So. Korea	Engine component data	Approved with conditions
1375-97	Finland	Engine component data	Approved with conditions
1374-97	Australia	Engine component data	Approved with conditions
1297-97	Taiwan	Engine component data	Approved with conditions

Joint Venture E.  
(DOS/ITAR licenses)

Case #	Country	Subject	DOD
740491	Turkey	Engine marketing license	No hot section data is releasable
740373	Singapore	Engine marketing license	No hot section data is releasable

Company F.  
(DOS/ITAR licenses)

<b>Case #</b>	<b>Country</b>	<b>Subject</b>	<b>DOD</b>
			<b>Recommendation</b>
740593	UAE	Engine marketing license	No hot section data is releasable
740106	UK	Engine marketing license	No hot section data is releasable
738680	Canada	Engine marketing license	No hot section data is releasable
737754	Philippines	Engine marketing license	No hot section data is releasable
737638	So. Africa	Engine marketing license	No hot section data is releasable
737637	UAE	Engine marketing license	No hot section data is releasable
736345	Denmark	Engine component data	Approved with conditions
735102	UAE	Engine marketing license	No hot section data is releasable
734520	So. Korea	Engine marketing license	No hot section data is releasable
732992	Greece	Engine marketing license	No hot section data is releasable
732991	France	Engine marketing license	No hot section data is releasable
730226	Pakistan	Engine marketing license	Returned without action
727787	Norway	Engine marketing license	No hot section data is releasable
728453	Netherlands	Engine marketing license	No hot section data is releasable
727538	UK	Engine marketing license	No hot section data is releasable
721604	Austria	Engine marketing license	No hot section data is releasable
719349	Chile	Engine marketing license	No hot section data is releasable
719348	Chile	Engine marketing license	No hot section data is releasable
706773	Romania	Engine marketing license	Returned without action
705367	Brazil	Engine marketing license	Returned without action
705366	Brazil	Engine marketing license	Returned without action
705365	Chile	Engine marketing license	No hot section data is releasable
705364	Chile	Engine marketing license	No hot section data is releasable
703007	Taiwan	Engine marketing license	No hot section data is releasable
698281	India	Engine marketing license	No hot section data is releasable
697425	Egypt	Engine marketing license	No hot section data is releasable
697161	Greece	Engine marketing license	No hot section data is releasable
693490	Bangladesh	Engine marketing license	No hot section data is releasable
232-97	India	Kaveri engine assistance	Approved with conditions
1530-97	Singapore	Depot maintenance	Approved with conditions
1375-96	Israel	Engine component data	Approved with conditions

Hearing date: 25 June 1998  
Committee: Senate Governmental Affairs  
Senator: Not identified  
Witness: Mr. Miller  
Question #b

Question: Please provide the committee with the following:

b. The number of export license applications that DTSA has escalated to the ACEP level from January 1995 through the present.

Answer: DTSA has escalated the following numbers of cases to the Advisory Committee on Export Policy (ACEP):

CY	Cases
1995	27
1996	28
1997	13
1998 (thru May)	4

Hearing date: 25 June 1998  
Committee: Senate Governmental Affairs  
Senator: Not identified  
Witness: Mr. Miller  
Question #c

Question: Please provide the committee with the following:

c. At what point would supercomputer technology transfers to a foreign country or company be utilized for simulating nuclear tests, thereby allowing testing without detectable detonations?

Answer: First, and foremost, a supercomputer — regardless of performance — is dependent on highly detailed computer codes (software) to simulate dynamics of a nuclear explosion. Programmers can only develop software codes of this nature from data collected from past nuclear weapon tests and other experiments coupled to known first-principles of physics and chemistry. For example, for the US Stockpile Stewardship Program, the expectation is to develop software that mirrors the range of US nuclear test experience. Where test information is lacking the programmers would model results from experiments and scientific principles. The Department of Energy has begun developing this advanced software, not for the purposes of developing new weapons, but to confirm the performance of the ones we have as age-related change begins to alter the physical properties of US weapons.

Once software is mature later in the next decade, we believe that a supercomputer capable of modeling the extreme dynamics and complexity of a nuclear explosion will likely require performance capabilities in excess of 10 peta Operations Per Second ( $10^{16}$  OPS), a capability very significantly—by a factor of  $10^{12}$  OPS—above the performance of the computers illegally diverted to Russia.

Currently, no computer, including those reflecting today's state-of-the-art technology, has the capability necessary to design safe and reliable nuclear weapons because they lack the speed and the software necessary to simulate a nuclear explosion. As you know, supercomputers are massively parallel devices. I can infer from today's technology that the absence of such a link between several supercomputers means that it is not within today's technology to link such powerful computers.

However, it is likely that supercomputers might serve another nation with considerable nuclear test experience as a modeling enterprise to assess age-related changes on its nuclear weapons, if that nation could develop the software unique to its nuclear weapons experience. As such, software related to US nuclear explosions must also be protected as we continue to advance with computer hardware technology.

Hearing date: 25 June 1998  
 Committee: Senate Governmental Affairs  
 Senator: Not identified  
 Witness: Mr. Miller  
 Question #d

Question: Please provide the committee with the following:

d. An explanation of the diminishing percentage of export license applications being reviewed by the Armed Forces and the Defense Intelligence Agency (DIA).

Answer:

**Commerce Dual-Use License Applications:**

The following table shows the number of license applications referred to the Department of Defense by the Department of Commerce for the calendar years indicated:

	<b>CY95</b>	<b>CY96</b>	<b>CY97</b>
Total	1463	7420	9891

The following table shows the number of license applications referred to the military departments and DIA by DTSA for the calendar years indicated:

<b>Organization</b>	<b>CY95</b>	<b>CY96</b>	<b>CY97</b>
Army	332	457	406
Navy	627	861	724
Air Force	385	753	288
DIA	899	2880	2447

Prior to CY96, not all dual-use export license requests were referred by the Department of Commerce to the Department of Defense. Executive Order 12981, which became effective in 1996, provided for Defense review of all dual-use license requests. As a result, there was a large increase in the number of licenses reviewed by DoD between CY95 and CY96, both in terms of referral from Commerce to Defense as well as for Defense referral to the military departments and DIA. The reduction in number of referrals to the military departments between CY96 and CY97 is primarily attributable to two factors. First, each military department or DoD reviewing agency provides to DTSA specific requirements for review by commodity. Consequently, the total number of

licenses referred to each military department and DoD reviewing agency is determined by the criteria that those agencies define relative to their capabilities and expertise. DTSA also continues to refer, on a case-by-case basis, export licenses to DoD organizations that we believe require their review, even though they may not have included those areas in the general criteria for referral. Secondly, the total number of referrals will vary depending on the total number of license requests submitted to Commerce by exporter, for a given item that the military departments and other DoD reviewing organizations have included in the criteria for referral.

#### **State Munitions License Applications:**

Our records indicate that there has not been a downward trend in the numbers of munitions license applications referred to the military departments. DIA does not formally review many munitions licenses because their role is to provide an assessment of end users. Since the vast majority of munitions exports are to government end users of allies and friends, or to well-known defense companies in those countries, there is no requirement for individual end user reviews for each of these cases. Nevertheless, DIA provides many useful services to DoD's export control review system in the form of regular reporting on a variety of WMD and conventional arms export issues.

The following table shows the number of munitions license applications referred to the Department of Defense by the Department of State for the calendar years indicated:

	<b>CY95</b>	<b>CY96</b>	<b>CY97</b>
Total	10531	11462	11773

The following table shows the number of munitions license applications referred to the military departments by DTSA for the calendar years indicated:

<b>Organization</b>	<b>CY95</b>	<b>CY96</b>	<b>CY97</b>
Army	4329	4791	5029
Navy	5517	5972	5867
Air Force	5505	5897	5981
DIA	43	56	6

Hearing date: 25 June 1998  
Committee: Senate Governmental Affairs  
Senator: Not identified  
Witness: Mr. Miller  
Question #e

Question: Please provide the committee with the following:

e. The factors that determine whether DTSA will request that an export license application be reviewed by the Armed Forces and/or DIA.

Answer:

**Commerce Dual-Use License Applications:** Each year, DTSA asks all DoD reviewing agencies, including the military departments and DIA, to provide a list of proposed export items that affect their operational responsibilities. DTSA uses that input to refer licenses to them for review. Additionally, DTSA refers export licenses to DoD organizations when DTSA believes a particular DoD component has relevant expertise or that the proposed export may impact on its mission area even if that commodity is not part of its referral criteria list.

**State Munitions License Applications:** DTSA refers licenses to the military departments based on an assessment of whether the proposed export affects that department's operational responsibilities or whether the military department has some particular technical or operational expertise that would assist DTSA in making a judgment about the license. As noted in our answer to question d, few munitions licenses are referred to DIA because their role is to provide an assessment of end users.



Hearing date: 25 June 1998  
Committee: Senate Governmental Affairs  
Senator: Not identified  
Witness: Mr. Miller  
Question: #f

Question: Please provide the committee with the following:

f. The criteria requirements for export license applications decided on the 24-hour review period at DTSA.

Answer: There is no "24-hour review period at DTSA." For each dual-use license application Commerce forwards to DoD, DTSA staff perform a technical review that considers the level of technology and the appropriateness of the proposed end use and end user. In many cases end-users are well known on the basis of previous exports and have been subjects of recent intelligence assessments. Other factors considered include whether approval is consistent with current embargoes, sanctions, licensing policy, and security interests. Some licenses can be reviewed quite quickly because of a track record on the end user and previous experience with the specific technologies involved.

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