

[Return to Table of Contents](#)

CHAPTER 9

High Performance Computers (Section 742.12)

Export Control Program Description And Licensing Policy

Adjusting export controls on high performance computers (HPCs) is a high priority for the United States as improvements in computer technology continue to enhance system performance. In FY 2001, two major adjustments were made to HPC controls. The first set of changes was announced in FY 2000 (August 2000) but was not fully effective until FY 2001 due to a congressionally mandated waiting period. These changes were as follows:

- Raised the Tier II license exception limit to 45,000 from 33,000 MTOPS.
- Raised the Tier III license exception limit to 28,000 from 20,000 MTOPS for civilian end-users and from 12,500 for military end-users.
- Raised the NDAA notification level to 28,000 MTOPS (effective February 28, 2001).
- Removed the distinction between military and civilian end-users in Tier III;
- Moved Argentina from Tier II to Tier I.
- Moved Estonia from Tier III to Tier II (effective December 29, 2000).

The President sent a report to Congress justifying the changes to the Tier III country group and NDAA notification level on August 31, 2000. The Department of Commerce published a regulation in the *Federal Register* on October 13, 2000, implementing the new controls. As stipulated in the FY 1998 National Defense Authorization Act (NDAA), the movement of Estonia from Tier III to Tier II took effect 120 days from the date the President's Report went to Congress (December 29, 2000) and the update of the NDAA notification level took effect 180 days from the date the President's Report was delivered to Congress (February 28, 2001).

The second set of changes to HPC policy in FY 2001 was announced on January 10, 2001 and was implemented in regulations published on January 19, 2001 in the *Federal Register*. President Clinton submitted a report to Congress announcing the changes also on January 19, 2001. The revisions to HPC control policy were as follows:

- Combined Computer Tiers I and II into a single Tier I (all HPCs regardless of MTOPS are eligible for License Exception CTP).
- Raised the Tier III license exception CTP limit to 85,000 MTOPS from 28,000 MTOPS.
- Raised the NDAA notification level to 85,000 MTOPS (effective March 20, 2001).
- Moved Lithuania from Tier III to Tier I (effective May 19, 2001).

As stipulated in the FY 1998 NDAA (as amended), the update of the NDAA notification level was effective 60 days after the President's Report went to Congress (March 20, 2001) and the movement of Lithuania from Tier III to Tier I was effective 120 days after the date that the Report was delivered to Congress (May 19, 2001). The Export of any computer to proliferation-related end-users and end-users still requires a license.

In late FY 2001, the Administration began an interagency review of current computer controls. This review takes into consideration technology trends, such as clustering, and market realities, such as the volume production of systems based on mass-market microprocessors.

Analysis of Control as Required by Section 6(f) of The Act

A. The Purpose of the Control

The purpose of the HPC controls is to prevent the transfer or diversion of computers to end-users who use the computers in an unauthorized manner. The controls demonstrate the degree of U.S. concern over illegitimate access to such machines and assist the United States to obtain multilateral cooperation consistent with the HPC Agreement and obligations under the Wassenaar Arrangement.

B. Considerations and/or Determinations of the Secretary of Commerce

1. *Probability of Achieving the Intended Foreign Policy Purpose.* The widespread availability of the components, the technical know-how needed to build HPCs, and the speed with which the technology of these items improves, are challenges to achieving the control's objectives. U.S. HPC controls are designed to permit the government to calibrate control levels and licensing conditions depending on the national security or proliferation risk posed by a specific destination, enhance U.S. national security, and preserve the technological lead of U.S. industry by ensuring that controls on computers are effective and do not unnecessarily impede legitimate computer exports.

2. *Compatibility with Foreign Policy Objectives.* Preventing the proliferation of weapons of mass destruction and the means to deliver them is a fundamental goal of U.S. foreign policy. Since

HPCs can be used to develop such weapons, U.S. export controls, in concert with those of our allies, deny HPCs to potential proliferators. Extensive U.S. participation in various multilateral control groups, specifically the Wassenaar Arrangement, demonstrates the U.S. commitment in this regard.

3. *Reaction of Other Countries.* Since many of the countries that have the capacity to produce HPCs share U.S. opposition to the proliferation of weapons of mass destruction, there is a high degree of cooperation between the United States and its partners in multilateral export control regimes.

4. *Economic Impact on U.S. Industry.* Regular revisions to HPC control thresholds enable U.S. industry to remain competitive in the world market and ensure that U.S. national security interests are maintained by keeping sensitive computers under export controls. There were several adjustments to the control thresholds during FY 2001, as described above, culminating in the January 2001 decision to allow the use of License Exception CTP for all HPCs, regardless of MTOPS, to all destinations except Tiers 3 and 4. The Tier 3 license exception eligibility level was raised to 85,000 MTOPS (effective March 2001); the Tier 4 control level remains at 6 MTOPS. The new control levels reflect advances in computer technology, mass-market conditions, and increased foreign availability.

In FY 2001, BXA approved 32 licenses for export of computers listed under ECCN 4A003, valued at \$96.9 million. This includes exports to Tier 3 countries (22 cases), as well as to Tier 2 countries (prior to the merger of Tier 1; 7 cases), and exports of lower-level computers to civilian end-users in Syria (3 cases). One license application valued at \$767,000 was denied and 39 applications valued at \$39.9 million were returned without action, most often because a license was not required for the transaction.

5. *Enforcement of Control.* As long as HPC controls are imposed on the most advanced models, which are generally manufactured by a few companies and not in large supply, there are no particular enforcement concerns. However, as technology outpaces the control levels, it is difficult to enforce controls on lower-level items that are manufactured for the mass market.

C. Consultation with Industry

The Department of Commerce, through its Information Systems Technical Advisory Committee (ISTAC) and the President's Export Council Subcommittee on Export Administration (PECSEA), holds ongoing discussions with industry. Industry has repeatedly urged that improvements in performance be taken into account in adjusting export control policy.

In response to this urging, the Administration is working closely with industry on examining future controls.

On November 7, 2001, the Department of Commerce, via the *Federal Register* and via BXA's Web page, solicited comments from industry on the effectiveness of foreign policy-based export controls. No comments were received specific to the controls described in this chapter. A more detailed review of the comments is available in Appendix I.

D. Consultation with Other Countries

The United States actively consults with allies and other potential supplier nations to ensure that they understand the basis for U.S. controls. The United States is working particularly closely with Japan.

E. Alternative Means

The United States will continue to use diplomatic efforts to discourage other nations from acquiring HPCs for the development of weapons of mass destruction and other uses that threaten U.S. interests. The United States also will work closely with other supplier countries to increase the effectiveness of multilateral controls. However, these efforts can only supplement, not replace, the effectiveness of actual export controls.

F. Foreign Availability

The key to effective export controls is to set levels just above the level of computer capability that end-users with security and proliferation risks can obtain from non-U.S. sources as a result of widespread availability. The ability of these end-users to achieve high performance computing capability by clustering together lower-level components is a factor in determining the appropriate control level. The ongoing review of HPC control levels is intended to maintain realistic export control levels in this dynamic market. However, according to private sector forecasts, multi-processor systems may soon be available on a worldwide basis from foreign manufacturers, including configurations that exceed current U.S. computer control thresholds.

In addition, the ability to cluster computers together using off-the-shelf components to achieve high performance computing power has become widespread.