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NUCLEAR NONPROLIFERATION

Licensing Procedures for Dual-Use Exports Need Strengthening

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Mr. Chairman and Members of the Committee:

I am pleased to be here today to discuss the results of our review[1] of U.S. export licensing procedures for dual-use nuclear items--that is, equipment, materials, and technical data that have civilian uses but that can also be used to develop nuclear explosives or special nuclear material such as weapons grade uranium or plutonium.

At your request, we (1) reviewed the extent of U.S. dual-use nuclear exports to countries of proliferation concern, (2) assessed policies and procedures for reviewing license applications, and (3) examined some methods used to deter and detect the diversion of exports to foreign nuclear proliferation programs. We also reviewed the potential impact of recent changes in computer licensing requirements.

[1] Nuclear Nonproliferation: Export Licensing Procedures for Dual-Use Items Need to be Strengthened (GAO/NSIAD-94-119, Apr. 26, 1994).

RESULTS IN BRIEF

The U.S. government has approved a significant number of dual-use nuclear licenses to 36 countries identified as posing a potential proliferation concern. Computers and other items with wide civilian uses accounted for the largest share of these exports. In contrast, items critical to nuclear explosives development and with few nonnuclear uses have only rarely been approved.

Most licensing decisions for eight countries we focused on were in accord with the overall U.S. goal of minimizing proliferation risk. However, from fiscal years 1988 to 1992, over 1,500 licenses were approved for organizations in these countries involved in or suspected of being involved in developing nuclear explosives or special nuclear material. These approvals increase the risk that U.S. exports could contribute to nuclear proliferation, in some cases significantly. We also found weaknesses in the interagency licensing review process that have resulted in approval of numerous sensitive license applications without review by Energy or other members of an interagency review group.

U.S. government approval of sensitive exports dictates the need for effective ways to deter or detect export diversions, but current procedures have several weaknesses. These include (1) inadequate criteria for selecting pre-license checks and post-shipment verifications, (2) ineffective methods used to perform these inspections, and (3) lack of verification of government-to-government assurances against nuclear end uses.

LICENSING TRENDS

From fiscal years 1985 to 1992, the United States issued approximately 336,000 licenses for dual-use nuclear exports valued at $264 billion. Of these, about 55,000 licenses valued at about $29 billion were issued for items exported to 36 countries that the United States had identified as posing a proliferation concern. These countries, contained on the Department of Commerce's Special Country List, either had not acceded to the Nuclear Non-Proliferation Treaty or were suspected of engaging in nuclear proliferation activities. Several of these countries, listed in Attachment I, were recently removed from the Special Country List.

Computers accounted for 86 percent of dual-use nuclear licenses to the 36 countries. Also licensed in large numbers were common industrial and scientific equipment such as measuring and calibrating equipment, oscilloscopes, lasers, and numerically controlled machine tools. Items with few nonnuclear applications, such as maraging steel (used in the process to enrich uranium), were only rarely licensed.

The volume of licenses for Nuclear Referral List items--those items classified as capable of contributing to nuclear weapons development--has declined since fiscal year 1987, although less for Special Country List destinations than for other countries. This decline is due in large measure to the easing of licensing requirements for computers, which occurred in 1987 and again in 1990.

SIGNIFICANT NUMBER OF LICENSES APPROVED TO COUNTRIES OF PROLIFERATION CONCERN

It is U.S. policy to prevent exports that would contribute to nuclear weapons proliferation without impeding legitimate exports. To assess the implementation of this policy, we analyzed licensing decisions for dual-use

nuclear exports to eight countries of proliferation concern for fiscal years 1988 to 1992. The eight countries were Argentina, Brazil, India, Iran, Iraq, Israel, Pakistan, and South Africa. During this period the United States reviewed approximately 27,500 dual-use nuclear license applications for the eight countries and approved about 24,000, or approximately 87 percent. (See attachment II.)

Most of these licensing decisions were in accord with the overall goal of minimizing the risk that U.S. exports could be used to support nuclear proliferation. Approximately 90 percent of the approved licenses entailed little or no apparent proliferation risk because they did not involve end users suspected of developing nuclear explosives, producing special nuclear materials, or diverting exports to nuclear proliferation activities.

In addition, 289 license applications were denied primarily because they represented an unacceptable proliferation risk. More specifically, they involved (1) technically significant items intended for end users or countries where the risk of diversion to nuclear weapons activities was viewed as particularly high; (2) end users linked with unsafeguarded nuclear activities or foreign naval nuclear propulsion programs; or (3) end users engaged in

nuclear activities in countries for which the United States has a policy of nuclear noncooperation.

SOME LICENSES APPROVED TO END USERS INVOLVED IN NUCLEAR WEAPONS DEVELOPMENT

Although, as noted above, most of the licensing decisions for the eight countries we reviewed appeared to be in accord with the U.S. goal of minimizing proliferation risk, we did identify a significant number of licenses that posed a relatively greater risk. From fiscal years 1988 to 1992, the U.S. government approved 1,508 licenses for exports to end users suspected of being involved in nuclear weapons or special nuclear materials development, as shown in Attachment III.

Generally, these end users represented government agencies, research organizations, universities, or defense companies that, while involved in or suspected of being involved in their countries' nuclear weapons programs, were also engaged in other activities. The licenses were approved because U.S. agency officials believed that the exports would not be diverted to nuclear proliferation activities. Nonetheless, about 1,300 licenses involved

Nuclear Referral List items, including high-speed computers, lasers, oscilloscopes, and machine tools. Others involved end users that have played key roles in their countries' nuclear weapons development programs. Examples of the types of items and end users involved in these approved licenses include:

-- two machine tools capable of manufacturing critical nuclear weapons components exported to a military end user involved in nuclear weapons development;

-- numerous high-speed computers exported to a military end user involved in nuclear weapons design and development; and

-- several Nuclear Referral List items, such as computers, and an oscilloscope, exported to a research organization involved in nuclear explosives development.

While we have no evidence to prove that any of these exports have been used in nuclear explosives programs, we believe they constitute a higher nuclear proliferation risk--some significantly higher--than most of the other

licenses approved because of the sensitivity of the items or the role of the end users in unsafeguarded nuclear activities.

EXPORT CONTROL REFERRAL PROCEDURES HAVE WEAKNESSES

The Export Administration Regulations require the Department of Commerce to refer all export applications for dual-use nuclear items to the Department of Energy. In practice, Energy has delegated some of its review authority to Commerce. When either agency believes a license application should be reviewed by other agencies or denied, it is referred to the Subgroup on Nuclear Export Coordination (SNEC), an interagency review group. The SNEC's membership includes representatives from the Departments of Commerce, Defense, State, and Energy and the Arms Control and Disarmament Agency (ACDA).

From fiscal years 1988 to 1992, Commerce decided without Energy consultation about 17,200 (50 percent) of the approximately 34,300 dual-use nuclear license applications for exports to Special Country List destinations. Of the approximately 17,100 licenses Commerce referred, Energy returned

about 15,800 (92 percent) to Commerce with its recommendations, and sent forward about 1,300 (8 percent) for interagency review.

Most of the licenses Commerce unilaterally reviewed did not require Energy review under the delegations of authority negotiated between Energy officials and Commerce. However, from October 1987 to May 1992, Commerce did not refer about 630 licenses to Energy that required referral for various reasons. Of these, about 130 involved Nuclear Referral List items, some destined for end users suspected of developing nuclear explosives or special nuclear materials.

Commerce's failure to refer some licenses to Energy as required increases the chance that a license will be improperly approved for lack of adequate technical review. Commerce and Energy officials now agree that many of the licenses we identified should have been referred, and acknowledge that referral policies should be clarified to correct the problems.

In addition, Energy did not forward to the SNEC the vast majority of the licenses it received from Commerce for end users of nuclear proliferation concern. These licenses involved items such as computers, oscilloscopes,

and lasers intended for end users suspected of developing nuclear explosives or special nuclear material. Energy recommended that Commerce approve most of these licenses because it believed that the exports were of limited technical significance and would not support nuclear proliferation activities.

The Department of Energy has discretion in determining which licenses to forward to the SNEC. However, its practice of seeking interagency consultation on only a minority of licenses raises concerns that other agencies may be precluded from bringing their policy perspectives to bear on important licensing decisions. During our review, Defense and ACDA representatives to the SNEC identified a number of licenses--some involving Nuclear Referral List items destined for end users of proliferation concern--that they believed warranted SNEC review but were not placed on the SNEC agenda. Moreover, agencies represented on the SNEC are limited in their ability to influence which licenses Energy selects for interagency review and unable to hold Commerce and Energy accountable for their review decisions because they lack consistent access to licensing information.

To address these problems with the interagency review process, we are recommending that the Departments of Commerce and Energy (1) reach agreement on which types of licenses Commerce is to refer to Energy and (2) provide periodic reports to the SNEC on licensing referral decisions as a basis for allowing the SNEC agencies to establish mutually acceptable guidelines for interagency review.

METHODS FOR DETERRING OR DETECTING DIVERSIONS ARE INADEQUATE

To deter and detect the diversion of nuclear-related dual-use exports to proliferation activities, Commerce or other agencies may request pre-license checks or post-shipment verifications. Pre-license checks are used to establish the legitimacy of the end user or verify the intended end use of the export; post-shipment verifications are used to ascertain whether exported items are being used appropriately.

Only a small proportion of dual-use nuclear licenses have been subjected to pre-license checks or post-shipment verifications. During fiscal years 1991 and 1992, U.S. government officials conducted pre-license checks on 221

(2.6 percent) of the approximately 8,000 licenses referred to Energy for nuclear proliferation concerns. During the same period, 56 post-shipment verifications were conducted on previously exported items. A majority of these checks were conducted on items involving the eight countries of proliferation concern that we focused on (see attachment IV.)

Existing selection criteria do not provide sufficient guidance on what checks to undertake. Our review showed that during fiscal years 1991 and 1992, Commerce selected a number of cases for inspection involving items of low technical significance. For example, approximately 63 percent of nuclear-related pre-license checks in the eight countries of proliferation concern that we focused on were conducted on items that officials from the Los Alamos and Lawrence Livermore National Laboratories told us were of lesser proliferation concern. In addition, Commerce chose to do checks involving end users whose proliferation credentials were already known. For example, about 39 percent of nuclear-related pre-license checks in the eight countries were conducted for end users that had already been identified by the Department of Energy as posing a nuclear proliferation concern. National Laboratory and Defense officials told us that pre-license checks are less

useful in cases involving well-known end users because the existence and activities of the entities are already established.

We also found that (1) U.S. embassy officials who conduct the pre-license checks and post-shipment verifications typically lack technical expertise in how nuclear-related dual-use items could be diverted; (2) Commerce's requests for inspections frequently omitted vital information, such as the reason for the inspection or licensing conditions; and (3) Embassy officials frequently sent foreign service nationals to conduct inspections of their own countries' facilities. To address these problems, we are recommending that the Commerce Department, in consultation with the Department of Energy, take several actions, including prioritizing checks to be done, providing additional guidance and training to embassy staff conducting the checks, and eliminating U.S. reliance on foreign service nationals to perform these checks.

In addition to pre-license checks and post-shipment verifications, the U.S. government may also seek assurances from foreign governments that items will not be diverted to nuclear uses. However, the U.S. government does not systematically verify compliance with such government-to-government

assurances because they are diplomatically negotiated agreements intended to carry the weight of an official commitment by a foreign government. Thus, the U.S. government cannot be certain that exports licensed with government-to-government assurances are being used for their intended purposes.

POTENTIAL IMPACT OF RECENT CHANGES IN COMPUTER LICENSING REQUIREMENTS

As part of a broad policy strategy by the executive branch to improve U.S. trade performance, the Commerce Department has further eased export licensing requirements for computers. This will almost certainly result in a substantial decline in the number of computer license applications and could complicate U.S. efforts to prevent U.S. computer exports from supporting nuclear proliferation.

Under the new policy, only the most advanced computers will require an export license for nuclear proliferation reasons and only when exported to Special Country List destinations. (Licenses will still be required for lower level computers destined for Iran and Syria in accord with existing foreign

policy export controls. Such exports could be denied for nuclear proliferation reasons if it can be clearly established that they would be used to support nuclear weapons activities.)

We estimate that, if these policy changes had been in effect in fiscal year 1992, there would have been approximately 88 percent fewer license applications for computer exports to countries on the Special Country List. For fiscal years 1988 to 1992, 52 computer license applications were denied for 18 end users suspected of involvement in developing nuclear weapons or special nuclear materials, many because there was a clear risk that the computers would be used in such activities. It appears that many of these computers would no longer require an individual export license under the new policy, although we cannot determine precisely because of changes in the standards for controlling computers that occurred in 1991.

As shown above, many of the computers that will now be free of nuclear proliferation licensing requirements are capable of performing nuclear weapons-related work. One means of preventing the export of such computers to end users of nuclear proliferation concern is through the "know rule," contained in Part 778.3 of the Export Administration Regulations. This

rule requires exporters to seek a license "if they know or have reason to know" that a proposed export would be used to support nuclear proliferation activities. With the liberalization of computer controls, the "know rule" becomes the key basis for preventing affected computer exports from supporting nuclear proliferation activities.

This concludes my statement. I will be happy to address any questions you may have.

ATTACHMENT I

NUCLEAR NONPROLIFERATION SPECIAL COUNTRY LIST (1992)

Afghanistan
Albania
Algeria
Andorra
Angola
Argentina[a]
Bahrain[a]
Brazil[a]
Burma
Chile[a]
Comoros
Djibouti
Guyana
India
Iran
Iraq
Israel
Kuwait[a]
Libya
Malawi[a]
Mauritania
Mozambique
Niger
Oman
Pakistan
Qatar[a]
Saudi Arabia[a]
South Africa[a]
St. Kitts
Syria[a]
Tanzania
United Arab Emirates
Vanuatu
Yemen Arab Republic[a]
Zambia
Zimbabwe

[a]These countries were removed from the Special Country List under interim rules published in the Federal Register on October 6, 1993.

Source: Commerce's Export Administration Regulations, supplement 4 to part 778.

LICENSING OUTCOMES FOR NUCLEAR-RELATED DUAL-USE EXPORTS FOR EIGHT COUNTRIES OF PROLIFERATION CONCERN (FISCAL YEARS 1988-92)

Country	Applications	Approvals	Denials	Other[a]
Argentina	2,644	2,433 (92.0%)	4 (0.2%)	207 (7.8%)
Brazil	7,476	6,966 (93.2%)	29 (0.4%)	481 (6.4%)
India	3,978	3,050 (76.7%)	69 (1.7%)	859 (21.6%)
Iran	721	366 (50.8%)	86(11.9%)	269 (37.3%)
Iraq[b]	410	253 (61.7%)	20 (4.9%)	137 (33.4%)
Israel	6,603	5,929 (89.8%)	44 (0.7%)	630 (9.5%)
Pakistan	808	650 (80.4%)	27 (3.3%)	131 (16.2%)
South Africa	4,927	4,401 (89.3%)	10 (0.2%)	516 (10.5%)
Total	**27,567**	**24,048 (87%)**	**289 (1%)**	**3,230 (12%)**

Note: Percentages may not add to 100 due to rounding.

[a]Includes licenses returned to the exporter without action, still pending, or cancelled.

[b]Data through August 2, 1990. All pending applications were returned without action.

Source: Department of Commerce.

ATTACHMENT III

APPROVALS OF NUCLEAR-RELATED DUAL-USE LICENSES TO SENSITIVE END USERS IN EIGHT COUNTRIES OF PROLIFERATION CONCERN (FISCAL YEARS 1988-92)

Country	Applications	Approvals	Percent approved
Argentina	50	39	78
Brazil	401	322	80
India	317	202	64
Iran	21	5	24
Iraq[a]	89	31	35
Israel	1,075	880	82
Pakistan	9	3	33
South Africa	31	26	84
Total	**1,993**	**1,508**	**76**

[a]Through August 2, 1990.

Source: Department of Commerce, Department of Energy.

ATTACHMENT IV

NUCLEAR-RELATED DUAL-USE INSPECTIONS CONDUCTED IN EIGHT COUNTRIES OF PROLIFERATION CONCERN (FISCAL YEARS 1991-92)

Country	Pre-license check	Post-shipment verification	**Total**
Argentina	9	1	**10**
Brazil	31	3	**34**
India	24	8	**32**
Iran	1	0	**1**
Iraq	0	0	**0**
Israel	23	4	**27**
Pakistan	15	11	**26**
South Africa	19	11	**30**
Total	**122**	**38**	**160**

Source: Department of Commerce.

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