

*Reported Accomplishments of Selected Threat Reduction and Nonproliferation Programs,
By Agency, for Fiscal Year 2005*

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This annual report summarizes the activities and accomplishments of cooperative threat reduction and nonproliferation programs conducted primarily in the Russian Federation and other former Soviet states by the Departments of Defense, Energy, and State.

Progress reports issued by the aforementioned departments in their annual budget requests to Congress provide the main source of information for this report. Facts and figures gathered from Congressional testimony, press releases, public websites, and other government publications are also included.

In general, this paper applies only through the conclusion of Fiscal Year 2005, as is the practice of most government agencies. However, when information through the conclusion of Calendar Year 2005 and into the early months of 2006 was available, it has been included.

This paper does not report on every cooperative threat reduction program and does not include completed or terminated programs. Previous accomplishments reports from RANSAC, available at these links to the RANSAC website, provide additional background for some of these programs:

- [2005](#)
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Department of Defense Programs

Strategic Offensive Arms Elimination Program – Russia

The Department of Defense cooperates with Russia to destroy strategic weapons delivery systems. Intercontinental Ballistic Missiles (ICBMs), Submarine Launched Ballistic Missiles (SLBMs), and their launchers, along with bombers, nuclear-powered missile submarines, and nuclear air-to-surface missiles (ASMs) are being dismantled or destroyed under the program.

Destruction progress is outlined in the following table:

Nunn-Lugar Scorecard

Program	Current Cumulative Reductions	2007 Projection	2012 Projection
13300 Warheads Deactivated	6828	7347	9029
1473 ICBMs Destroyed	612	766	1162
831 ICBM Silos Eliminated	485	503	612
442 ICBM Mobile Launchers Destroyed	55	120	344
233 Bombers Eliminated	155	155	155
906 Nuclear ASMs Destroyed	885	906	906
728 SLBM Launchers Eliminated	436	456	572
936 SLBMs Eliminated	577	598	695
48 SSBNs Destroyed	29	32	39
194 Nuclear Test Tunnels/Holes Sealed	194	194	194

Current numbers as of February 6, 2006; projections as of December 31, 2005

FY 2005 accomplishments included:

- Solid Propellant ICBM/SLBM and Mobile Launcher Elimination: Oversaw the disassembly of six SS-N-20 missiles and ten SS-25 missiles as well as the final SS-24 silo-type ICBM. Twelve SS-24 missiles were disassembled, eleven of which were eliminated. Twelve rail-mobile launchers and elements from eleven SS-25 missiles previously disassembled were eliminated. Three SS-25 regiments were decommissioned. Twenty launch-associated railcars were rendered strategically inoperable.
- Liquid Propellant ICBM and Silo Elimination: Twelve SS-18 ICBMs, six SS-18 ICBM silo launchers, and one associated launch control center silo were taken out

- of service. 24 SS-18 ICBMs, seven SS-19 ICBMS, twelve SS-18 ICBM silo launchers, three associated launch control center silos, and one associated training silo were eliminated. Approximately 768 metric tons of propellant and 1,968 metro tons of oxidizer were shipped to storage facilities for future elimination.
- SLBM Launcher Elimination/SSBN Dismantlement: Dismantlement of two Typhoon class nuclear submarines and one Delta III class nuclear submarine continued. The SLBM launchers on the Delta III were eliminated. The dismantlement of a Delta I class nuclear submarine was completed.
 - Spent Naval Fuel Disposition: Production of 35 casks to hold spent naval fuel during transportation and storage continued.
 - Liquid Propellant SLBM Elimination: Fifteen SLBMs were dismantled and eliminated, twelve of which by Russia using CTR Program-provided equipment.

Chemical Weapons Destruction Program – Russia

Two projects within this program assist Russia in destroying its chemical weapons nerve agents in a safe and environmentally sound manner.

- Chemical Weapons Destruction Facility: The U.S. has agreed to build a facility near the town of Shchuch'ye to destroy Russia's nerve agent stockpile. FY 2005 accomplishments included the preparation of design documentation for demilitarization machines two and three, material handling equipment, and the metal parts furnace. Construction began on the Main Destruction Building, the Bituminization Building, the Administration Building, and the material storage building. Construction was completed on the fire station and transformer substation. Two temporary bridges were completed, one transport bridge was rebuilt, and two other bridges were upgraded to be able to support 100 metric tons, all so that the site would have reliable access for heavy equipment.
- Chemical Weapons Production Facility Demilitarization: This project will dismantle two chemical weapons production facilities at Volgograd and Novocheboksarsk. This process will involve the dismantlement and destruction of equipment that can be used to produce, transfer, and store chemical weapons nerve agents. FY 2005 accomplishments included the completion of the Second Stage Phase III demilitarization of two bunkers and four other remaining buildings in Volgograd. In Novocheboksarsk, provision of the thermal treatment systems continued.

Strategic Nuclear Arms Elimination and WMD Infrastructure Elimination – Ukraine

Through the Strategic Nuclear Arms Elimination Program, the Department of Defense provides assistance to Ukraine to eliminate Tu-22M Backfire bombers, Tu-142 Bear nuclear-capable maritime patrol aircraft, Kh-22 nuclear air-to-surface missiles (ASMs), and strategic bomber trainers. The WMD Infrastructure Elimination Program seeks to take military facilities out of service that could be used to advance countries' WMD programs. Such facilities include ICBM liquid propellant plants, airbases used by bombers, and weapons storage sites.

In Ukraine, specific programs and FY 2005 accomplishments included:

- SS-24 Missile Disassembly, Storage, and Elimination: Washington Group International, the on-site U.S. contractor, aided with the storage of 163 SRMs.
- Bomber and Air-to-Surface Missile Elimination: 12 Tu-22M bombers, 95 Kh-22 ASMs, 4 Tu-142 maritime patrol aircraft, and one strategic bomber trainer were eliminated. Associated bomber engines, auxiliary power units, ASM rotary launchers, and external pylons were also eliminated.
- Nuclear Weapons Storage Area Elimination: The Department of Defense made site visits and developed technical requirements and cost estimates for work at Khmel'nitskiy, Lutsk, and Stryy.

Biological Weapons Proliferation Prevention Program – FSU

This program contains three subprograms working in former Soviet Union states to prevent the proliferation and use of biological weapons:

- Biological Weapons Infrastructure Elimination (BWIE): BWIE provides for the elimination of biological weapons infrastructure in the former Soviet Union by removing equipment from facilities that could be used to produce biological weapons or destroying those facilities that cannot be dismantled. In FY 2005, the demolition of two buildings in Stepnogorsk, Kazakhstan continued. At Tbilisi, Georgia, dual-use equipment was prepared for dismantlement, remaining Foot and Mouth Disease vaccine concentrate was destroyed, and the site access road was repaired.
- Biosecurity and Biosafety and Threat Agent Reduction and Response: BS&S and TADR were combined into one project because of their common objective: to upgrade security at facilities engaged in peaceful biological research and prevent the accidental release or diversion of biological materials. In FY 2005, particularly dangerous pathogens in Georgia were relocated into the secure repository at the Epidemiological Monitoring Station/Central Reference Laboratory (EMS/CRL). Permanent designs for CRLs in Georgia and Uzbekistan are 90% complete. DoD completed training in laboratory and biological safety practices and began diagnostic and epidemiology training for 450 state personnel. Safety and security assessments were carried out in Azerbaijan and Ukraine and enhancements were carried out in Kazakhstan.
- Cooperative Biological Research: The Cooperative Biological Research program redirects former biological weapons scientists to peaceful pursuits in order to help prevent the proliferation of their expertise. In FY 2005, new projects have tracked the occurrence of anthrax in Kazakhstan and produced a modern molecular epidemiological study of brucellosis, engaging 224 scientists at 11 institutes. These scientists have made seven presentations at international conferences. CBR projects are in the process of being integrated with the BS&S and TADR program.

Nuclear Weapons Storage Security (NWSS) Program – Russia

This program helps to prevent proliferation by enhancing the security systems of nuclear weapons storage sites. The program has four components:

- Automated Inventory Control & Management System (AICMS): This project helps Russia track its nuclear weapons that are scheduled to be destroyed. In FY 2005, all 16 AICMS modules were installed, accepted, and commissioned. DoD developed A&E procedures for the modules to be in place in FY 2006. Operations and maintenance training was completed for system hardware and software.
- Guard Force Equipment and Training: This project seeks to bolster the ability of Russian guards to prevent unauthorized access to nuclear weapons storage areas. FY 2005 accomplishments included the completion of training of instructors on live-fire shooting range equipment.
- Site Security Enhancements: This program seeks to make security standards at Russian sites equal to those found at U.S. nuclear weapons storage sites by installing physical security systems. In FY 2005, 10 site visits were made and designs for the first 12 comprehensive upgrades were completed. DoD completed site upgrades at one site and has ordered the equipment for the other 11 sites, which is in the process of being received and installed.
- Far East Training Center: This program will establish a training center in Khabarovsk. It will train branches of MOD responsible for WMD security in the Far East to support physical security equipment personnel. It will also be a regional depot-level maintenance facility for security equipment. In FY 2005, DoD approved the acquisition strategy for the project and reviewed MOD's requirements for training and sustainability support.

Nuclear Weapons Transportation Security Program (NWTs) – Russia

This program supports proliferation prevention by enhancing the safety and security of nuclear weapons during shipment. NWTs has three subprograms:

- Nuclear Weapons Transportation: This project assists Russia in securely shipping nuclear warheads to dismantlement or storage locations. During FY 2005, 25 train shipments were supported. This was a decreased number because DoD required increased transparency and the program had to be stopped between November 2004 and May 2005 while the issue was being resolved. DoD and MOD concluded the changes to the implementing agreement in June 2005.
- Railcar Maintenance and Procurement: This project supports the maintenance and certification of railcars that transport Russian nuclear weapons. In FY 2005, DoD approved the procurement of up to 100 new cargo railcars. Fifteen guard railcars are in production.
- Transportation Safety Enhancements: This project enhances Russia's ability to respond to accidents involving the transportation of nuclear weapons. In FY 2005, DoD reached an agreement with the CIS contractor to acquire Russian-made Kamaz transport trucks and 78 tents.

Fissile Material Storage Facility Program – Russia

The fissile material storage facility at Mayak, which was commissioned in December 2003, will help provide safe and environmentally sound storage for weapons grade fissile material. This program currently has one component:

- Fissile Material Storage Facility Transparency: DoD will work with the Russian Federal Agency for Atomic Energy (Rosatom) to install a certified Inventory Sampling Measurement System that will enable monitors to verify that storage containers are loaded solely with fissile material with agreed attributes: weapons-grade plutonium or enriched uranium. FY 2005 accomplishments included the testing of the Gamma Detection Module of the Inventory Sampling Measurement System to evaluate its operational reliability. Further work was halted pending the outcome of the negotiations on the Transparency Protocol.

Weapons of Mass Destruction – Proliferation Prevention Incentive Program – FSU

Four projects within this program achieved significant accomplishments in FY 2005:

- Land Border and Maritime Proliferation Prevention – Ukraine: DoD will help Ukraine to develop a capability to detect and interdict WMD-related materials crossing its border or arriving via the sea. FY 2005 accomplishments included the collection of traffic data at Points of Entry (POEs) along the Ukraine – Moldova border. Enhancements were provided to detection and interdiction elements within a geographic corridor designated as the project’s test bed. A contract was signed to initiate the maritime component of the project.
- Portal Monitoring – Uzbekistan: DoD will provide Uzbekistan with equipment, training, and logistics support to establish a nuclear detection and interdiction capability at important POEs. In FY 2005, installation of portal monitors at 11 of the most-at-risk POEs was completed and authority of these locations was transferred to Uzbekistan.
- Caspian Sea Maritime Proliferation Prevention – Azerbaijan: This project supports development of WMD detection and interdiction capability on Azerbaijan’s Caspian Sea border. In FY 2005, the Interim Command and Control Center was established and WMD detection and boarding equipment was purchased and delivered.
- Fissile and Radioactive Material Proliferation Prevention – Kazakhstan: The program continued to assist Kazakhstan in security radiological sources found in an unprotected environment at one site. In FY 2005, a contract for this project was awarded and two maintenance actions on DoD equipment were carried out.

Chemical Weapons Elimination – Albania: The first CTR program outside the FSU will aid Albania to eliminate its stockpile of 16.45 metric tons of chemical weapons agent. In FY 2005, agent samples were collected and analyzed to characterize the material. Design

and production of the elimination system is under way. Infrastructure is being designed and work plans and procedures are being created.

Department of Energy Programs

International Nuclear Materials Protection and Cooperation

The International Nuclear Materials Protection and Cooperation program seeks to prevent terrorism by securing and eliminating nuclear weapons and weapons-usable materials as well as by installing nuclear material detection equipment at border crossings and Megaports to prevent the illicit trafficking of these materials.

- Navy Complex: This program improves the security of Russian Navy warheads and fissile material by upgrading security at sites where nuclear warheads, fuel and other nuclear materials are present. In FY 2005, three additional warhead sites were secured, bringing the cumulative total to 37.
- Strategic Rocket Forces: This program secures nuclear weapons sites that were vulnerable to theft. In FY 2005, eight sites were secured, bringing the cumulative total to ten. Six Strategic Rocket Forces and two 12th Main Directorate sites were added for security cooperation in FY 2006.
- Rosatom Weapons Complex: This program provides upgrades to a total of Rosatom nine nuclear weapons, uranium enrichment, and material processing and storage sites. Through FY 2007, the program has plans for comprehensive system installations and upgrades at five sites, as well as sustainability activities at two other sites. Access to perform security upgrades at serial production enterprises (SPEs) has not yet been granted due to the extreme national security sensitivity of those sites.
- Civilian Nuclear Sites: This program works to install improved security and accounting systems at 31 civilian nuclear sites, both in Russia and elsewhere. Both rapid upgrades, to combat immediate risks, and more comprehensive upgrades, are installed. Through FY 2007, upgrades to help ensure sustainability of security systems at civilian nuclear sites in Russia and in former Soviet states will continue. Additionally, support for training, procedures, maintenance, equipment repair, critical spare parts, and performance testing will be provided to further ensure program sustainability.
- Material Consolidation and Conversion: This program converts highly enriched uranium into low enriched uranium and consolidates excess nuclear materials into fewer, more secure sites. FY 2005 accomplishments included the conversion of 1.7 metric tons of highly enriched uranium to low enriched uranium, bringing the cumulative total of converted material to 7.1 metric tons.
- Second Line of Defense: This program works to prevent the smuggling of nuclear materials through ports and across borders in Russia and elsewhere by setting up radiation detection equipment. In FY 2005, nuclear detection

equipment was installed at 87 sites, including 4 megaports. Also, interdiction exercises to evaluate readiness were supported and observed.

- National Programs and Sustainability: This element allows the International Nuclear Materials Protection and Cooperation program to implement a focused strategy to ensure that its programs can be sustained in Russia and other countries. It develops the necessary infrastructure in these countries through projects that seek to develop regulations and inspection capabilities, site safeguards and security programs, training and regional support, and site sustainability. In FY 2007, the program will operate and maintain three regional technical support facilities. Additionally, fifteen physical protection classes with 300 participants and twenty material control and accounting classes with 400 participants will be conducted.

Global Threat Reduction Initiative

The Global Threat Reduction Initiative seeks to secure and/or remove all high risk nuclear materials and equipment that could potentially be a threat to the United States or the international community. Comprised of eight subprograms, four GTRI subprograms deal directly with Russia and former Soviets states.

- Reduced Enrichment for Research and Test Reactors (RERTR): This program converts reactors that use weapons-grade highly enriched uranium into those that use low enriched uranium. In FY 2005, one reactor was converted from using HEU to LEU, bringing the total number of reactors converted to 40.
- Russian Research Reactor Fuel Return (RRRTR): This program works to eliminate Russian-origin stockpiles of HEU in foreign countries by either repatriating or otherwise facilitating final disposition of the material. In FY 2005, 23 kilograms of HEU from foreign research reactors was returned to Russia.
- Kazakhstan Spent Fuel Disposition: This program seeks to stabilize and secure the spent fuel assemblies from the shut-down BN-350 fast breeder reactor. It also aims to provide long-term dry storage of spent fuel. An internal review of the cost and schedule for this program was recently completed.
- International Radiological Threat Reduction: This program identifies and secures radiological sources worldwide, including in Russia, thereby reducing the threat of illicit acquisition of radiological material. In FY 2005, 165 high priority sites with vulnerable radiological material were secured, bringing the cumulative total to 234, well exceeding the target set for the year.

Nonproliferation and International Security

The Nonproliferation and International Security (NIS) program seeks to prevent and counter proliferation of weapons of mass destruction through providing support for the reduction in WMD stockpiles, strengthening export control systems, transitioning WMD expertise and infrastructure to peaceful purposes, and improving international safeguards

and interdiction regimes. Since September 11, 2001, the program has trained 5,798 international and domestic nuclear experts. There has been a significant realignment of projects, particularly with regard to the NIS program. Thus, there are some subprograms for which accomplishments were not claimed. These programs are still profiled below. NIS is now comprised of five offices, many of which have subprograms.

Dismantlement and Transparency

The Office of Disarmament and Transparency negotiates, implements, and strengthens U.S. nonproliferation and arms control agreements by promoting transparent WMD reductions, ensuring effective verification methods, and developing monitoring tools. The office also works closely with the IAEA to develop advanced technologies for the detection of clandestine nuclear weapons programs and capabilities to dismantle them. The office has three subprograms:

- HEU Transparency Implementation: This program works at four Russian processing facilities to annually monitor the conversion of 30 metric tons of weapons-grade HEU into 900 metric tons of LEU, ensuring that the LEU being purchased under the HEU Purchase Agreement is derived from dismantled nuclear weapons. In FY 2005, U.S. experts confirmed 29 metric tons of HEU to be permanently eliminated from Russian stockpiles, bringing the cumulative total of eliminated HEU to 255 metric tons.
- Warhead Dismantlement and Fissile Material Transparency: This program seeks to provide confidence that Russian nuclear weapons are being dismantled and that excess fissile materials are not being used in the production of new weapons through the negotiation and development of agreements and transparency options.
- Nuclear Noncompliance Verification: This program provides advanced safeguards technology applications to detect nuclear materials, including undeclared nuclear programs in suspected proliferating states, and to verify the dismantlement of those programs.

Global Security Engagement and Cooperation

The Office of Global Security Engagement and Cooperation works with international partners to strengthen export control systems, assist foreign countries to meet their Nuclear Nonproliferation Treaty obligations, develop technically effective approaches to regional security challenges, and to transition WMD scientific communities in high-risk nations to peaceful pursuits. This office has four subprograms:

- International Cooperation: This program seeks to counter the threat of nuclear proliferation by establishing technical partnerships that support the NPT. The program develops and transfers advanced technologies through bilateral agreements in order to prevent and counter proliferation of WMD and nuclear-related terrorism while supporting the peaceful applications of nuclear technologies bilaterally through “Sister Laboratory” arrangements. In FY 2005,

one technology used to prevent and counter WMD proliferation was transferred to international regimes and other countries.

- Global Initiatives for Proliferation Prevention (GIPP): This program helps to prevent the proliferation of WMD expertise by redirecting displaced scientists and other personnel in to sustained, peaceful employment. It achieves this goal by providing grants to WMD experts for applied research with the aim of commercializing indigenous technologies in partnership with private U.S. firms and providing grants to create new businesses that will diversify the civilian economies of closed Russian nuclear cities. In FY 2005, 300 displaced Russian or FSU WMD experts were employed in long-term private sector jobs resulting from grants from the GIPP program. The program also achieved its goal of receiving 65% of its funding from non-U.S. government sources.
- Security Engagement: This program, formerly known as Regional Security, focuses on preventing the proliferation of WMD by developing technical solutions to regional security problems in the Middle East, South Asia, East Asia, and Central Asia.
- International Nonproliferation Export Control Program: This program aims to strengthen foreign national export control systems in countries and regions of proliferation concern. Specifically targeted are established and emerging suppliers and high-traffic transit countries, especially those located near suppliers with inadequate controls.

International Regimes and Agreements

The Office of International Regimes and Agreements (IRA) seeks to raise barriers to WMD proliferation and strengthen the nonproliferation regime by providing policy and technical support to bilateral, multilateral, and international regimes and agreements. IRA has seven subprograms:

- Export Control Licensing Operations: This program provides recommendations on U.S. license applications for dual-use items and munitions that could have use in the development of nuclear, chemical, and biological weapons and delivery systems. The program maintains the Proliferation Information Network System (PINS), an automated, classified system for the review of dual-use and munitions licenses. In FY 2005, this program performed 6,000 reviews, with an average cost of \$400 per review, \$50 below the target average cost per review.
- Interdiction/Enforcement: This program provides technical guidance and policy support to U.S. government interdiction groups that deal with cases which involve an approach to foreign governments on preventing proliferation of specific nuclear, chemical, biological, or missile commodities or technologies. The program also provides training on WMD related technologies to U.S. government enforcement agencies and offices.
- Global Regimes: This program develops policy and provides program oversight for nuclear nonproliferation, international security, and nuclear treaties and agreements.

- Nuclear Safeguards: This program deals with Safeguards Policy, Voluntary Offer Agreement (VOA) implementation at DOE sites, preparations to implement the Additional Protocol at DOE sites, and the Advanced Safeguards Initiative (ASI).
- Export Control Multilateral: This program provides technical and policy support to U.S. government diplomatic efforts involving the Nuclear Suppliers Group, the Missile Technology Control Regime, and other related groups. The program also operates a NSG Information Sharing System (NISS), which allows NSG members to share real-time information on nuclear related license denials to prevent proliferation of dual use items.
- International Nuclear Security: This program conducts bilateral physical protection assessments, physical protection training, and the design and implementation of new physical protection guidelines in conjunction with the IAEA.

Treaties and Agreements

This Nonproliferation and International Security subprogram supports the implementation of bilateral or multilateral nonproliferation and international security requirements that stem from major nonproliferation initiatives, agreements, and treaties. Additionally, the program provides for unplanned responses to immediate requirements based on unanticipated U.S. national security needs.

International Emergency Management and Cooperation

This program is comprised of two subprograms:

- Kazakhstan BN-350 Reactor Shutdown: This subprogram provides the technical support necessary to aid the multinational effort to shut down Kazakhstan's BN-350 breeder reactor. In FY 2005, the deactivation of this facility was completed. The Sodium Processing Facility construction proceeded to process tanks and piping installation. The process of draining the sodium coolant and processing it into an environmentally safe material will eliminate the source of fissile material production.
- International Emergency Management: This project shares and coordinates information with foreign governments in the area of emergency management cooperation. The program also supports the IAEA with radiation detectors and technical assistance for its emergency program and to address lost sources. In Russia, the project assists Rosatom in the development of emergency plans and procedures, conducts emergency drills and exercises, and conducts three training courses for nuclear facility emergency staff.

Elimination of Weapons-Grade Plutonium Production

This program helps Russia to eliminate its weapons-grade plutonium producing reactors by shutting them down and replacing them with fossil fuel power plants to provide energy to cities dependent on these reactors. This program has two main subprograms:

- Seversk Pu Production Elimination: This project refurbishes an existing fossil-fueled power plant to provide energy and allow for the shutting down of two of the last three weapons-grade plutonium production reactors. Through the FY 2005, this project was 25.7% complete, or \$79.9 million Budgeted Cost of Work Performed (BCWP). This is up from the FY 2004 figure of 12.9% of work complete. Work continued on the new boiler unit, two replacement boilers, the first large turbine, and the new fuel conveying system. Work was initiated on the second smaller turbine generator, two additional boiler units, and auxiliary equipment and structures.
- Zheleznogorsk Plutonium Production Elimination: This project shuts down the final weapons-grade plutonium production reactor while constructing a fossil-fueled facility to take its place. In FY 2005, the process of devising detailed designs was begun. The project was 4.9% of the way completed, actually down from 5% from FY 2004 because revisions of cost estimates altered endpoint target costs.

Russian Surplus Fissile Materials Disposition

This project is part of a larger program that seeks to dispose of at least 34 metric tons of U.S. and Russian weapons-grade plutonium, as well as surplus U.S. highly enriched uranium. The goal of this project is to irradiate the excess plutonium in nuclear reactors as part of a mixed oxide (MOX) fuel mixture, which will convert the plutonium into a form that is less adaptable for use in nuclear weapons. In FY 2005, site preparation activities for the Russian MOX facility and identification of the specific technologies to be used by Russia to dispose of its plutonium have begun. An ongoing Russian technical review of its program and the lack of an agreement on the liability protocol had prevented the program from moving forward (a liability protocol was signed on September 16, 2006).

Department of State Programs

Nonproliferation, Anti-terrorism, Demining, and Related Programs (NADR)

NADR provides funding for a wide range of critical, security-related programs that seek to reduce regional and transnational threats. There are three programs within NADR that deal with nonproliferation and global security of WMD material and expertise. Along with the programs outlined below, NADR also makes a voluntary contribution to the IAEA (in FY 2005 totaling \$52.6 million), as well as provides funding to the Comprehensive Nuclear Test Ban Treaty International Monitoring System (\$18.8 million in FY 2005).

Nonproliferation and Disarmament Fund

The Nonproliferation and Disarmament Fund (NDF) supports efforts to halt the spread of weapons of mass destruction, to limit the spread of advanced conventional weapons, and to enable the dismantling of existing weapons and their means of delivery. Projects are designed to deal with the unanticipated and fast-paced nature of circumstances that may arise during the fiscal year.

Funding for NDF in FY 2005 totaled \$31.7 million. NDF is currently engaged in eliminating heavy munitions that could be used to make Improvised Explosive Devices and the destruction of fermenters that could be used to make pathogens for biological weapons. The program is also ensuring that laboratories that work with and store dangerous pathogens are safe and secure. NDF is also pursuing programs to remove fissile materials from insecure circumstances. Additionally, the program is maintaining the security of a chemical weapons storage facility in Libya while the bulk agent is being safely eliminated.

Export Control and Related Border Security

The main focus of the Export Control and Related Border Security (EXBS) Program is to prevent the proliferation of WMD, their missile delivery systems, and other advanced conventional weapons. The program seeks to help ensure safe international trade while enhancing the global community's ability to interdict illicit transfers of dangerous technologies by assisting foreign countries in improving their legal and regulatory capacity and border security capabilities. The program focuses chiefly on proliferation-sensitive nations.

In FY 2005, Bulgaria and Romania graduated from EXBS support due to superior performance in the program. New nonproliferation export control and border security assistance programs were initiated in Argentina, Brazil, Libya, and the Philippines. Serbia and Montenegro, Macedonia, India, and Pakistan all altered nonproliferation export control laws to better meet international standards and continued efforts to improve border security infrastructure.

Nonproliferation of WMD Expertise

The Nonproliferation of WMD Expertise (NWMDE) program seeks to combat proliferation of WMD expertise by redirecting WMD scientists, engineers, and technicians. Five areas that deal with the engagement and redirection of expertise are funded under this heading. In addition to the areas detailed below, NWMDE is launching a new initiative called the Biosecurity Engagement Program (BEP) with the aim of engaging countries that maintain rapidly growing biotechnology sectors and unsecured dangerous pathogen collections. BEP will seek to improve biosecurity and biosafety conditions and to improve accounting for dangerous pathogens. The program is expected

to begin to receive funding via its own line item in the NWMDE account in the near future.

- Science Centers: Through the intergovernmental Science Centers in Moscow (ISTC) and Kiev (STCU), researchers in nuclear, missile, chemical, and biological institutes in collaboration with Western counterparts are engaged. Funding is committed to qualified research proposals, with an emphasis on projects that have a long-term nonproliferation impact and move institutes closer to self-sustainability. In FY 2005, the ISTC received new project funding for 163 projects in the amount of \$51.3 million, of which \$21.5 million was provided by ISTC partners. Also, direct grant payments to 24,984 scientists and team members were made, amounting to \$43.9 million. There were 42 new partner organizations added. Nearly \$3 million for new research in four countries was funded through the STCU. The STCU parties and the Ukrainian National Academy of Sciences allocated \$500,000 each for Ukraine's Targeted Research Initiatives, the first contribution from a recipient nation.
- Bio-Chem Redirect Program: The Bio-Chem Redirect Program transitions biological and chemical weapons scientists and experts from the former Soviet Union to peaceful research projects dealing with global public health, crop and livestock health, and environmental monitoring and remediation. In FY 2005, the program gained access to eight bio-chem institutes in Azerbaijan and was able to engage five high-priority institutes in the Kyrgyz Republic. Three bio institutes and one chemical institute graduated to commercially sustainable ventures, bringing the cumulative total to 22.
- Bio-Industry Initiative: The Bio-Industry Initiative (BII) seeks to reconfigure former biological weapons production facilities in the former Soviet Union for non-weapons uses and to combat both regional and global disease by engaging former weapons scientists in accelerated drug and vaccine production. In FY 2005, Russian inventors of a novel HIV vaccine began to receive royalty income under a commercial agreement.
- Iraq: This program set up a center of science and technology in Iraq to focus on WMD scientist redirection. Since the program's inception in 2004, approximately 200 scientists, engineers, and technicians have been engaged. In FY 2005, the program engaged former WMD experts in the pursuit of technology solutions in forensics and law enforcement, which will in turn draw Russian, Canadian, and U.S. funds and expertise. Through the Iraqi Center, the program funded more than \$2 million in new projects in six countries. Through FY 2005, 23 scientists have graduated from the program into permanent positions with the Ministry of Environment. The Iraqi Center is currently reviewing more than 100 project proposals submitted by Iraqis for funding consideration.
- Libya: This program aims to engage and transfer Libya's nuclear, chemical, and missile experts into civilian careers to enhance Libya's economic development. Due to the fact that Libya remains designated as a State Sponsor of Terrorism, it is not eligible for NWMDE funding, so the program receives funds instead from NDF. In FY 2005, the program sponsored workshops on alternative career areas

for former WMD experts, developed a discreet number of research proposals, and initiated project implementation.

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