Reported Accomplishments of Selected Threat Reduction and Nonproliferation Programs, By Agency, for Fiscal Year 2009

Emily Kilborn and Nicholas Banco

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

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 2009, as is the practice of most government agencies. However, when information through the conclusion of Calendar Year 2009 and into the early months of 2010 was available, it has been included.

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

- 2008
- 2007
- 2006
- 2005
- 2004
- 2003
- 2002
- 2001

Table of Contents

Department of Defense Cooperative Threat Reduction (CTR) Programs

The Department of Defense (DoD) cooperates with Russia to destroy strategic weapons delivery systems. This program dismantles 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). Additionally, it also cooperates with former Soviet states to improve biological security by enhancing site security and supporting peaceful research activities for former WMD experts.

Destruction activities and progress in other areas are outlined in the following table:

Nunn-Lugar Scorecard

Program	Current Cumulative Reductions to Date	Percent of 2012 Targets	2012 Targets
Warheads Deactivated	7,551	81%	9,222
ICBMs Destroyed	785	72%	1,078
ICBM Silos Eliminated	498	77%	645
ICBM Mobile Launchers Destroyed	180	67%	267
Nuclear Carrying Submarines Destroyed	32	91%	35
Submarine Launched ICBMs Eliminated	651	94%	691
SLBM Launchers Eliminated	476	84%	564
Nuclear Air-to-Surface Missiles Destroyed	906	100%	906
Bombers Eliminated	155	100%	155
Nuclear Test Tunnels/Holes Sealed	194	100%	194
Nuclear Weapons Transport Train Shipments	487	78%	620
Nuclear Weapons Storage Site Security Upgrades	24	100%	24
Biological Monitoring Stations Built and Equipped	20	36%	55

Strategic Offensive Arms Elimination Program – Russia

DoD supports destruction of strategic weapons delivery systems and associated infrastructure in accordance with applicable Strategic Arms Reduction Treaty (START) provisions, including the START Conversion or Elimination Protocol. This assistance remains an incentive for Russia to draw down its Soviet-legacy nuclear forces and reduces opportunities for their proliferation or use. Equipment and services are provided to destroy or dismantle intercontinental ballistic missiles (ICBMs), ICBM silo launchers, road-mobile launchers, submarine-launched ballistic missiles (SLBMs), SLBM launchers, reactor cores of strategic nuclear-powered ballistic missile submarines (SSBNs), and WMD infrastructure.

FY 2009 accomplishments included:
Solid Propellant ICBM/SLBM and Mobile Launcher Elimination:

- Eliminated 10 SS-25 ICBMS;
- Eliminated 30 SS-25 road-mobile launchers;
- Decommissioned two SS-25 regiments.

Liquid Propellant IBCM and Silo Elimination:

- Eliminated eight SS-19 ICBMs;
- Eliminated two SS-18 ICBMs, decommissioned and dismantled six SS-18 ICBM silo launchers and Launch Control Centers (LCCs);
- Conducted repairs at the liquid propellant ICBM elimination facility.

SLBM Launcher Elimination/SSBN Dismantlement:

- Dismantled one Delta III-class SSBN and eliminated 16 SLBM launchers.

Strategic Nuclear Arms Elimination Program (SNAE) – Ukraine

DoD supports the safe storage of 160 solid rocket motors from dismantled SS-24 ICBMs and provides funding for empty motor cases after the propellant is removed by Ukraine.

FY 2009 accomplishments included:

- Stored 160 SS-24 solid rocket motors (SRMs);
- Transported SRMs to the propellant removal facility;
- Assisted Ukraine by making payments for 10 empty SRM cases;
- Continued maintenance and repair of SRM storage facilities;
- Provided administrative and advisory support.

Chemical Weapons Destruction Facility (CWDF) Program

DoD is assisting Russia with safe, secure, and environmentally sound destruction of the most proliferable portion of its chemical weapons nerve-agent stockpile and

related chemical weapons production facilities. The Shchuch'ye CWDF project supports this effort.

FY 2009 accomplishments included:

- Conducted reviews of project implementation;
- Completed boiler house construction and process line and supporting equipment procurements;
- Validated $150 million in work completed by Russian Ministry of Industry and Trade contractors.

Nuclear Weapons Storage Security Program

This program supports proliferation prevention by enhancing the security systems of nuclear weapons storage sites in Russia using DoD nuclear security standards as a basis for design.

Projected accomplishments for FY 2009 include:

- Completion of a set of regional training and logistics centers and developing a cadre of Ministry of Defense (MOD) personnel to operate, maintain, and support the security system upgrades;
- Establishment of a Far East Training Center (FETC) that will support the operators, maintainers, and system administrators of upgraded physical security equipment;
- Enhancement of automated inventory system for the tracking and cataloging of nuclear weapons to be eliminated;
- Construction of new Automated Inventory Control and Management System (AICMS) facilities at 13 additional sites;
- Technological upgrades of the hardware and software at the existing 20 AICMS facilities and new system training.

Nuclear Weapons Transportation Security Program

This program supports proliferation prevention by enhancing the security and safety of nuclear weapons during shipment.

Projected accomplishments for FY 2009 include:

- Shipped an average of four nuclear warheads per month to dismantlement locations or more secure storage sites pending dismantlement;
- Procured up to 100 heated cargo railcars to replace existing railcars at the end of their service life;
- Procured satellite transmitters and antennas for 15 DoD-provided railcars as components of an off-train communications system that supports the capability to monitor location and alarm-system status from MOD headquarters;
- Supported depot- and capital-level maintenance for cargo railcars to ensure compliance with Russian railway certification requirements.

Biological Threat Reduction Program (BTRP)

The BTRP objectives are to prevent proliferation of Biological Weapons (BW)-related materials, technologies, and expertise and combat bioterrorism. DoD consolidates and secures dangerous pathogen collections into Central Reference Laboratories (CRLs). It also improves the safety of biological facilities and enhances states' ability to detect and respond to a bioterror attack. This program works with scientists involved with BW expertise and destroys former BW facilities. This program promotes sustained transparency and the formation of strategic partnerships to prevent bioterrorism.

Accomplishments for FY 2009 include:

- Completed initial assessment of Armenian BTRP requirements;
- Established 11 Zonal Diagnostic Laboratories (ZDL) in Azerbaijan, Georgia, Uzbekistan;
- Constructed Central Reference Laboratories (CRL) in Georgia;
- Provided the Russian International Science and Technology Center with staff, support, training, workshops, travel, and management oversight for BTRP projects.

WMD Proliferation Prevention Initiative Program (WMD-PPI)

WMD-PPI addresses the vulnerability of selected non-Russian FSU states' borders to smuggling of WMD and related components. WMD-PPI expands the Program's traditional focus, WMD at its source, to address WMD on the move. Currently, WMD-PPI assists Azerbaijan, Kazakhstan, and Ukraine to develop functional, self-sustaining, multiagency capabilities to prevent the proliferation of WMD-related materials, components, and technologies across their borders. Additionally, DoD works with recipient states to include commitments in CTR governing agreements for reporting WMD detections made with U. S. Government-provided assistance to the U.S. embassies in-country.

FY 2009 accomplishments in specific countries include:

- Increased WMD command and control, communications, surveillance, detection and interdiction capabilities, and sustainment along Ukraine's Moldova/Transnistria border, the Black Sea/Sea of Azov border, and the Chornobyl Exclusion Zone;
- Enhanced WMD command and control, communications, surveillance, detection and interdiction capabilities, and sustainment along Azerbaijan's Caspian Sea maritime border;
- Installed additional security measures at the former Semipalatinsk test site in Kazakhstan.

Department of Energy National Nuclear Security Administration (NNSA) Programs

International Nuclear Materials Protection and Cooperation Program

The International Nuclear Materials Protection and Cooperation (INMP&C) program prevents nuclear terrorism by working in Russia and other regions of concern to secure and eliminate nuclear weapons and weapons-usable material; and install detection equipment at international crossing points to prevent the illegal transfer of nuclear material. This program seeks to assist the Obama administration goal to secure all nuclear weapons materials at vulnerable sites within four years.

Major FY 2009 achievements of the INMP&C program include:

- Completed MPC&A upgrades at a cumulative total of 210 of 229 buildings containing weapons exploitable material in Russia and other FSU countries;
- Downblended approximately 11.7 metric tons of highly enriched uranium (HEU) to low enriched uranium (LEU);
- Facilitated the enactment of 11 additional MPC&A regulations in Russia;
- Placed a cumulative total of 162 MPC&A regulations in the development phase for Russia and other FSU countries;
- Completed installation of radiation detection equipment at a cumulative total of 335 sites: 308 Second Line of Defense (SLD) Core sites and 27 Megaport sites.

Within INMP&C there are seven subprograms:

- Navy Complex: This program improves security by installing improved security systems at Russian Navy nuclear warhead sites, HEU fuel storage facilities, and shipyards where nuclear materials are present. There are 50 sites covered by this program: 39 Russian Navy nuclear warhead sites and 11 Russian Navy fuel/nuclear material storage sites. Comprehensive upgrades were completed at all 11 Navy fuel and other nuclear material storage sites in FY 2004, however, sustainability and training will continue for seven of these sites.

- Strategic Rocket Forces: This program element improves security of Russian warheads by installing improved security systems at SRF and 12th Main Directorate nuclear warhead sites. A total of 25 SRF sites (at 11 bases) and nine 12th Main Directorate sites have received MPC&A upgrades. Improvements include rapid upgrades and/or a comprehensive upgrades phase, and a sustainability program, which assures the systems will remain effective after the installation of upgrades is complete.

- Rosatom Weapons Complex: The Civilian Nuclear Sites program improved security at 32 civilian nuclear sites (19 Russian and 13 sites outside of Russia). This program improves the security of nuclear materials at seven

Rosatom nuclear sites, including the uranium enrichment and material storage which occurs there.

- Material Consolidation and Conversion: In FY 2009, INMP&C downblended a total of 11.7 metric tons (MT) of HEU to LEU. This program works to improve the long-term security of weapons-usable nuclear material in Russia. MMC works by consolidating non-weapons HEU and plutonium into fewer, more secure locations as well as downblending weapons-usable HEU to non-weapons-usable LEU.

- Second Line of Defense: This program prevents the illegal trafficking of nuclear materials by securing international borders and the global maritime shipping system. This is primarily done by cooperating with foreign governments through SLD's Core Program and Megaports Initiative.

    - The SLD Core Program: In FY 2009 NNSA installed radiation detection equipment at a cumulative total of 308 SLD sites. This program strengthens the capability of foreign governments to intercept illicit nuclear trafficking across international borders and through the global maritime shipping system. This is done by deploying detection equipment to scan commercial cargo, passenger vehicles, and pedestrians regardless of direction or destination. Up to approximately 600 sites in 32 countries are now scheduled to receive detection equipment installations, including approximately 170 sites in Russia.

    - SLD Megaports Initiative: In FY 2009 NNSA installed radiation detection equipment at a cumulative total of 27 Megaports. The primary goal of the Megaports Initiative is to scan as much container traffic for radiation as possible, with minimal impact to port operations. This program provides radiation detection equipment to key international seaports to screen cargo containers for nuclear and other radioactive materials. Under this initiative, NNSA plans to implement this program in up to 100 international seaports by the end of 2015.

Global Threat Reduction Initiative (GTRI)

The Global Threat Reduction Initiative (GTRI) mission is to reduce and protect vulnerable nuclear and radiological materials located at civilian sites worldwide, and directly supports President Obama's goal to accelerate efforts to secure and remove all vulnerable nuclear material from the most vulnerable sites within four years.

Major FY 2009 Achievements of the GTRI include:

- Converting or verifying the shutdown of a cumulative 67 research reactors from use of HEU fuel to LEU fuel;
- Removing a cumulative 2,317 kilograms of HEU and plutonium, enough material to make more than 90 nuclear bombs;

- Removing a cumulative 23,014 excess and unwanted radiological sources in the United States, containing more than 750,000 curies;
- Protecting a cumulative 705 buildings worldwide containing vulnerable high-priority nuclear and radiological materials.

GTRI consists of three sub-programs, responsible for the accomplishments listed above:

- HEU Reactor Conversion: This program helps convert domestic and international civilian research reactors and isotope production facilities from HEU to LEU. This includes working with Mo-99 producers to convert their existing operations to use LEU targets and developing new LEU-based Mo-99 production capabilities in the United States.

- Nuclear and Radiological Material Removal: This subprogram supports the removal and disposal of excess nuclear and radiological material from civilian sites worldwide including:
  - Russian-origin nuclear material removal;
  - U.S.-origin nuclear material removal;
  - Gap nuclear material removal;
  - Emerging threats nuclear material removal;
  - International radiological material removal; and
  - Domestic radiological material removal.

- Nuclear and Radiological Material Protection: This subprogram works to secure nuclear and radiological material worldwide from theft and sabotage. This subprogram includes:
  - Providing safe and secure long-term storage of approximately 3,000 kilograms of weapons-grade plutonium and 10,000 kilograms of HEU in spent fuel from the shutdown BN-350 fast breeder reactor in Kazakhstan;
  - Working in cooperation with foreign counterparts and agencies to install security upgrades for vulnerable nuclear and radiological materials located at civilian sites outside the United States; and
  - Working to install security upgrades on high-priority nuclear and radiological materials located at civilian sites within the United States.

Nonproliferation and International Security (NIS) Program

The Nonproliferation and International Security (NIS) program seeks to prevent and counter the proliferation of weapons of mass destruction. This is done by supporting WMD stockpile reduction, encouraging strong export control systems, creating peaceful WMD expertise transfers, and improving international safeguards.

Major FY 2009 achievements of the NIS program include:

- Nuclear Safeguards

- Recruited over 100 students for international safeguards internships at national laboratories, and funded nine post-doctoral positions in international safeguards at the national laboratories, as part of the Next-Generation Security Initiative (NGSI) efforts to reinvigorate the human capital resource base in international safeguards at the labs;
- Conducted three NGSI Lab summer courses on international safeguards for interns and other students;
- Co-sponsored with EURATOM an international workshop on human capital development and safeguards education for the next generation of safeguards professionals;
- Continued 2008 activity to partner with six countries to develop safeguards systems concepts;
- Trained over 1,000 foreign nationals in nuclear safeguards applications;
- Engaged with 14 countries, the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) and EURATOM on safeguards implementation and technology evaluation, and infrastructure for peaceful uses;
- Hosted two regional infrastructure workshops for countries interested in pursuing nuclear power;
- Expanded the technology program with sufficient funds to explore advanced safeguards applications;
- Developed several new safeguards technologies and analytical methodologies;
- Surveyed safeguards technology development in the US government, industry, and academia;
- Completed the update to the five-year NGSI Program Plan.

- Nuclear Controls
  - Continued to lead the five-state 'core group' efforts to update IAEA INFCIRC/225;
  - Advanced policy discussions on strengthened guidelines for enrichment and reprocessing technology in the Nuclear Suppliers Group (NSG);
  - Reviewed approximately 3,000 foreign WMD/missile procurements for sanctionable activity or diplomatic/interdiction response;
  - Reviewed 6,900 export licenses/requests for proliferation risk, recommending denial of 240;
  - Brought on-line the Proliferation Trade Control Directory;
  - Provided nearly $50,000,000 to the IAEA to establish an international nuclear fuel reserve;
  - Agreed to several important technical amendments to the NSG control lists including amendments for stable isotope separations, machine tools, and Uranium Hexafluoride (UF6) resistant valves;
  - Engaged thousands of technical personnel at more than 100 former WMD facilities, in the former Soviet Union, Iraq, and Libya;
  - Trained 400 officials from 75 countries in IAEA physical protection training;
  - Conducted bilateral physical protection assessments in seven countries;

- Established partnership between NNSA and the U.S. Department of Defense on Middle East/South Asia border security;
- Trained roughly 2000 licensors, enforcement officials, and industry representatives on export controls (both domestically and internationally);
- Supported the first UNSCR 1540 regional assistance request for the Caribbean community (CARICOM);
- Established an on-going WMD Commodity Identification Training partnership with South Africa;
- Re-established export control training and cooperation with Turkey;
- Expanded export control internal compliance engagement in Russia;
- Expanded industry outreach collaborations with India, China, Pakistan, and Argentina;
- Initiated proliferation risk analysis and commodity-based training in Southeast Asia;
- Conducted dozens of training sessions on all aspects of WMD fuel and weapons manufacturing technologies for U.S. enforcement agencies, including the Department of Homeland Security (DHS) and FBI;
- Completed national versions of guidebooks to the Nuclear Suppliers Group Trigger List with both Russia and China;
- Engaged the Government of Iraq in border security capacity-building in line with its UNSCR 1540 request for assistance.

- Nuclear Verification/Transparency
  - Since 1995, monitored the conversion of a cumulative 375 metric tons (MT) of Russian highly enriched uranium (HEU) from weapons (15,000 weapons) to low enriched uranium (LEU) (30 MT/1,200 weapons converted in FY 2009);
  - Completed 24 HEU monitoring visits annually to four Russian uranium processing facilities;
  - Supported Six-Party Talks and performed and monitored agreed disablement activities at nuclear facilities in North Korea;
  - Monitored shutdown of reactors and over nine metric tons (MT) of Russian weapons-grade plutonium under the Plutonium Production Reactor Shutdown Agreement.
- Nonproliferation Policy
  - Managed 22 policy analysis projects undertaken by national laboratories, NGOs, and institutes of higher learning;
  - Commenced negotiations on arrangements and procedures to effect reprocessing consent provisions contained in the U.S.-India Agreement for Cooperation;
  - Served as DOE/NNSA representative to the interagency process on the Fissile Material Cut-Off Treaty and the Comprehensive Test Ban Treaty;
  - Supported negotiations on a START follow-on treaty;
  - Commenced negotiations with URENCO countries and France on a nuclear cooperation agreement to create a legal framework for construction of an AREVA enrichment facility in the United States;
  - Supported the entry into force of the India Agreement for Cooperation;

- Participated in and organized Track II engagement activities;
- Developed policy analysis and options for downblending additional quantities of HEU;
- Completed a draft Nonproliferation Impact Assessment for the Global Nuclear Energy Partnership.

The above accomplishments were achieved through four sub-programs:

Dismantlement and Transparency (D&T)

The Dismantlement and Transparency (D&T) subprogram works to reduce proliferation by providing political and technical support for nonproliferation and arms control agreements. In addition, the program monitoring equipment to ensure foreign nuclear dismantling is taking place. D&T accomplishes its goals through the following initiatives:

- HEU Transparency Implementation;
- Warhead Dismantlement and Fissile Missile Transparency; and
- Nuclear Noncompliance Verification.

Global Security Engagement and Cooperation (GSEC)

The Office of Global Security Engagement and Cooperation works with international partners to strengthen export control systems, assist foreign countries in meeting their NPT obligations, deal with regional security challenges and to transition WMD scientific communities to peaceful pursuits. The office has five miniprograms though which it accomplishes its mission:

- Confidence Building Measures;
- International Nuclear Safeguards and Engagement Program;
- International Nonproliferation Export Control;
- Cooperative Border Security Program; and
- Global Initiatives for Proliferation Prevention.

International Regimes and Agreements (IRA)

The Office of International Regimes and Agreements (IRA) seeks to strengthen the nonproliferation regime by reinforcing and enhancing IAEA safeguards. It attempts to raise barriers to proliferation while ensuring U.S. compliance with its nonproliferation and licensing obligations. IRA has five areas of focus:

- Interdiction/Enforcement;
- Global Regimes,
- Nuclear Safeguards;
- Export Control Licensing Operations; and
- International Nuclear Security.

Treaties and Agreements

This Nonproliferation and International Security subprogram supports the enforcement of security measures for nonproliferation agreements. Additionally, the program provides for unexpected responses on unanticipated U.S. national security needs.

Elimination of Weapons-Grade Plutonium Production (EWGPP) Program

FY 2010 is the final year of funding for the EWGPP program. The program will be complete in FY 2011 when the last of the three reactors is shut down.

FY 2009 accomplishments include:

- The Seversk Plutonium Production Elimination Project completed the project scope of the refurbishment of an existing 1950s fossil-fueled facility.
- Physical completion of the Seversk project was accomplished with the exception of one turbine, obtaining high-level Russian Federation commitment to shut down the last (ADE-2) reactor in July 2010.

Fissile Materials Disposition (FMD) Program

The goal of this program is to eliminate surplus Russian plutonium and surplus United States plutonium and highly enriched uranium. The goal of the U.S. Plutonium Disposition program is disposition of at least 34 metric tons of U.S. surplus weapon-grade plutonium. Two key U.S. facilities will be built at the Savannah River Site (SRS) in South Carolina to accomplish this goal: a Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF) to fabricate plutonium oxide into MOX fuel for irradiation in domestic reactors, and a Waste Solidification Building (WSB) to handle waste from the MFFF and pit disassembly operations.

FY 2009 Major achievements of the FMD program include:

- Installed over 54,000 cubic yards of reinforced concrete and more than 11,000 tons of rebar for the MFFF;
- Completed construction of nine of the 18 auxiliary MOX buildings; two more buildings are under construction, the Secured Warehouse Building and the Electrical Substation;
- Received approval of Critical Decision (CD)-2 (performance baseline) and CD-3 (start of construction) for the WSB, and construction began in December 2008;
- Completed the first of two major phases of construction of the WSB, which entailed site preparation, facility excavation, and installation of underground utilities. The Balance of Plant subcontract for the WSB has been awarded for the remaining facility construction work scope;
- Successfully completed the Pit Disassembly and Conversion Facility (PDCF) Technical Independent Project Review, and continued with process design activities;

- Selected WesDyne International/Nuclear Fuel Services team as the down-blending and storage contractor for the new 12 MT HEU project;
- Completed all shipments of HEU for the Reliable Fuel Supply initiative, and enough LEU to supply fuel for multiple commercial reactor core reloads;
- Completed negotiations between the U.S. and Russian governments of a Protocol to amend the 2000 Plutonium Management and Disposition Agreement (PMDA) to reflect the current U.S. and Russian plutonium disposition program.

NNSA is also responsible for disposing of surplus U.S. HEU by down-blending it into LEU. Once down-blended, the material can no longer be used for nuclear weapons. The program seeks to recover the economic value of the material by using the resulting LEU as nuclear reactor fuel. Four separate disposition activities and projects currently implemented include:

- H-Canyon Enriched Uranium Disposition;
- The 12 MT HEU Blend-Down;
- Reliable Fuel Supply; and
- Research Reactor Fuel.

Department of State Programs

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

NADR provides funding for security programs which work 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 2009 totaling $61 million USD), and provides funding to the Comprehensive Nuclear Test Ban Treaty International Monitoring System (totaling $25 million USD in FY 2009).

Nonproliferation and Disarmament Fund

The Nonproliferation and Disarmament Fund (NDF) works to halt the spread of WMDs and their delivery systems, and advanced conventional weapons to terrorists and others. Projects are designed to deal with unanticipated threats may, and also to destroy existing weapons. Funding for NDF in FY 2009 totaled $91 million USD.

NDF's mandate emphasized maintaining readiness for fast and flexible responses dangerous situations. For this reason, NDF resources are not committed to any project or region in advance, unlike traditional State Department or other U.S. nonproliferation assistance programs.

Its mission includes efforts to:

- Halt the proliferation of nuclear, biological, and chemical weapons and their delivery systems;
- Destroy or neutralize existing WMDs, and their delivery systems;
- Facilitate the detection and interdiction of WMD by tracking, controlling, and securing dangerous materials;
- Limit the spread of advanced conventional weapons; and
- Buttress U.S. diplomatic efforts to promote disarmament activities.

Weapons of Mass Destruction Terrorism Program

The Weapons of Mass Destruction Terrorism (WMDT) program, first authorized in FY 2009, will continue to improve international capabilities to prevent, prepare for, and respond to, a WMD terrorist attack. This funding totaled $2 million USD. The WMDT Program seeks to improve international capabilities to prevent, prepare for, and respond to a WMD terrorist attack, including by supporting the Global Initiative to Combat Nuclear Terrorism (GICNT).

The GICNT is a voluntary partnership of 82 nations and four official observers designed to strengthen global capacity to prevent, detect, and respond to nuclear terrorism. Through multilateral activities and exercises, the GICNT shares best practices and lessons learned to strengthen the plans, policies, procedures, and interoperability of partner nations.

The WMDT Program supports the GICNT by sponsoring activities (i.e., workshops, seminars, table top exercises, or field exercises) that assist GICNT partner nations with implementing their commitments to the Initiative's Statement of Principles, which include:

- Strengthening accounting, control, and protection of nuclear/radiological material;
- Improving ability to search for, confiscate, and establish safe control of nuclear/radiological material;
- Detecting and suppressing illicit trafficking of nuclear/radiological material;
- Enhancing security of civilian nuclear facilities;
- Denying safe haven and economic resources from terrorists seeking to acquire or use nuclear/radiological material;
- Responding to and mitigating the consequences of a nuclear/radiological terrorist event;
- Promoting information sharing to suppress acts of nuclear terrorism.

Export Control and Related Border Security Program

The main focus of the Export Control and Related Border Security (EXBS) Program is to prevent the proliferation of WMD, delivery systems, and other advanced conventional weapons. By assisting partners improve their border control, this program prevents states and terrorists from acquiring WMDs. This program also seeks to improve other nations' legal frameworks, licensing processes, interagency cooperation and other enforcement capabilities. This program focuses chiefly on proliferation-sensitive nations.

EXBS provides extensive training on strategic trade control legislation, licensing, enforcement, government-industry outreach, and interagency coordination, and also donates inspection and detection equipment to front line enforcement agencies. The EXBS program's comprehensive approach, flexibility, responsiveness, and interagency perspective make it a unique resource for addressing critical aspects of the United States' nonproliferation objectives. EXBS currently has twenty-one advisors stationed globally to help implement and coordinate assistance activities in over sixty countries. In FY 2009, the Export Control and Related Border Security (EXBS) program was funded at $44 million USD.

Key accomplishments in 2009 include:

- EXBS-trained Customs officers in a Balkan country detected and intercepted 17,000 rounds of ammunition concealed in a hidden compartment in a private vehicle;

- Legal and licensing experts from one European country used their EXBS-provided skills to assist a third country in drafting comprehensive export control laws consistent with European Union standards;
- An Asian country's special law enforcement team trained by EXBS used its skills to search an aircraft, uncovering advanced weaponry exported from a third country in defiance of UN Security Council Resolutions;
- Over 4,000 law enforcement professionals, licensing experts, and industry compliance officials trained in over 60 countries;
- In June 2009, EXBS co-hosted the 10th International Export Control Conference with the Government of Turkey in Istanbul, attended by over 200 delegates from 60 countries and international and nongovernmental organizations;
- In FY 2009, EXBS donated more than $8.5 million USD worth of detection, inspection, and interdiction equipment to 24 countries.

Global Threat Reduction Program

The Global Threat Reduction Program (GTR) (formerly the Nonproliferation of WMD Expertise program) seeks to combat proliferation of WMD expertise, materials, and equipment by:

- Redirecting WMD scientists, engineers and technician;
- Assisting security upgrades at biological and chemical agent facilities; and
- Preventing nuclear smuggling.

The program received $61 million USD in FY 2009 in funding. Multiple areas that deal with the engagement and redirection of expertise are funded under this program.

- Science Centers:
  The International Science and Technology Center (ISTC) in Moscow and the Science and Technology Center (STCU) in Kiev engages researchers in nuclear, missile, chemical and biological institutions in collaboration with Western counterparts. Projects seek to achieve long-term nonproliferation impact and move priority institutions closer to self-sustainability. These resources are used to engage former weapons scientists and technical team members in peaceful science projects.

  - Accomplishments in FY 2009 by the Science Center projects include:
    - New project funding for 63 projects in the amount of $19.1 million USD, of which ISTC Partners provided $9.5 million USD for 34 projects;
    - Addition of 25 new Partner organizations, to the existing 409 Partners, who have provided $254.5 million USD in project funding since program's inception;
    - Celebration of ISTC 15 year anniversary;
    - New project funding for 115 projects, totaling $13.9 million USD, of which STCU Partners provided $7.6 million USD;

- Addition of 14 new Partner organizations, to the existing 189.

- Bio-Chem Redirect Program: The Bio-Chem Redirect Program continues to transition biological and chemical weapons scientists and experts from FSU states to peaceful research projects dealing with global public health, crop and livestock health and environmental monitoring and remediation.

- Bio Industry Initiative: The Bio Industry Initiative (BII) continues to seek to reconfigure former biological weapons production facilities in the former Soviet Union for non-weapon uses and to combat both regional and global disease by engaging former weapons scientist in accelerated drug and vaccine production.

- Iraq Scientist Engagement Program: This program set up a center of science and technology in Iraq to focus on WMD scientist redirection. The priorities of this program include expanding the number of scientists engaged (currently more than 140) and increasing sustainability.

Key accomplishments in FY 2009 include:

- Organizing 27 program activities, including trainings, workshops, and conferences to engage Iraqi scientists and engineers;
- Holding scientific conferences on animal health, science and technology policy, solar energy, and soil salinity and water management;
- Sponsoring professional development trainings on non-destructive testing, radiation protection, business development, chemical safety and security, remote water monitoring, and grant writing;
- Funding nine research and development grants to promote Iraqi-led initiatives in science and technology

- The Libya Scientist Engagement Program: This program continues to engage and transfer Libya's nuclear, chemical and missile experts into civilian careers to enhance Libya's economic development. This program supports the establishment of a nuclear medicine center in Libya, which is intended to help the redirection process of technical personnel.

- Biosecurity Engagement Program (BEP): This program aims to improve pathogen security, facility biosecurity and scientist engagement countries and regions where emerging bioscience sections, highly infections disease outbreaks, and terrorist threats coexist. This program focuses on pathogen security and biosafety projects, training to promote effective laboratory practices, and surveillance and diagnostics that strengthen infectious disease detection and response.

Key 2009 accomplishments of BEP included:

- Provided support to over 700 scientists in over 19 countries throughout Asia, the Middle East, Africa, and Latin America;

- Launched activities in four new countries: Afghanistan, Mexico, Morocco, Nigeria, and Uganda;
- Helped found the African Biosafety Association, Egyptian Biosafety Association, Moroccan Association for Biosecurity, and Philippines Biosafety and Biosecurity Association;
- Sponsored regional biosafety and biosecurity trainings in Brazil for Latin American countries and in Kenya for countries in Africa;
- Established a two-year hands-on disease surveillance training program at the USDA for scientists from South, Central, and Southeast Asia and the Middle East;
- Held 28 trainings and conferences focused on either practices in biosafety and biosecurity, or improved disease surveillance;
- Funded 61 projects and capacity-building grants;
- Completed rapid security upgrades at high risks facilities in Southeast Asia;
- Enhanced disease surveillance and detection capabilities in the Caucuses, South Asia and the Middle East through collaboration with the U.S. CDC Field Epidemiology Training Program;
- Conducted biosafety and biosecurity risk assessments at 3 key research facilities in Southeast Asia, 2 research facilities in South Asia, 2 research facilities in Morocco, and 3 research facilities in Egypt; and
- Supported Phase IV of the Pakistan-U.S. Science &Technology Cooperation Program.

- Partnership for Nuclear Security: The Partnership for Nuclear Security (PNS) aims to establish cooperative partnerships related to the peaceful use of nuclear energy in support of global nuclear security and related safety and nonproliferation objectives. PNS establishes sustainable linkages between nuclear technical professionals and U.S. counterparts; engages nuclear scientists, engineers, and technicians in collaborative research projects; and provides opportunities for training to nuclear technical professionals through workshops, conferences, travel and exchange programs, and related activities.

- Preventing Nuclear Smuggling Program: The Preventing Nuclear Smuggling Program (PNSP) addresses critical gaps in the capabilities of partner nations to combat smuggling in nuclear and radioactive materials. This program targets countries where significant smuggling events have occurred, or that may be particularly vulnerable to such smuggling. PNSP has two components: one focuses on outreach through the Nuclear Smuggling Outreach Initiative and the other focuses on promoting effective responses to smuggling incidents. Key accomplishments for PNS in 2009 included:

  - Completed four country assessments;
  - Secured funding for six anti-nuclear smuggling projects;
  - Organized seven anti-nuclear smuggling activities;

- Conducted national response plan scenario based workshops in Kazakhstan and Georgia;
- Co-sponsored Legislative Drafting Expert Workshops for nuclear scenarios in Armenia and Kyrgyz Republic;
- Funded seven countries to attend the annual Nuclear Smuggling International Technical Working Group meeting;
- Co-sponsored a Nuclear Forensics Awareness and Law Enforcement Workshop; and
- Began development of nuclear forensics law enforcement training.

Department of Homeland Security Programs

DHS Nuclear Weapons Security Programs

Multiple programs within DHS work to prevent and reduce the risk of a nuclear attack on the United States.

Domestic Nuclear Detection

The Domestic Nuclear Detection Office (DNDO) is the lead agency for nuclear security in DHS and works across the Department to combat the nuclear attack threat. This program improves the capability to detect and report unauthorized attempts to import, possess, store, develop, or transport radiological or nuclear material. The Department has integrated all nuclear detection research, development, test, evaluation, and operational support into a single office.

Accomplishments in FY 2009:

- Established or maintained basic PRND programs in 10 states, Urban Area Security Initiative urban areas and other vulnerable localities;
- Strengthened neighboring countries' maritime borders by supporting a bilateral radiological/nuclear detection capability-building program with Mexican Customs and other Mexican organization, to include equipment, training, protocols, technical reachback and exercises;
- Provided additional grant funding to support a total of approximately 110 undergraduate and graduate students;
- Completed construction of the Radiological/Nuclear Countermeasures Test and Evaluation Complex in Nevada, allowing for more rigorous testing of detection equipment;
- Directly trained 3,000 persons, and indirectly through Train-the-Trainer instruction, trained an additional 4,000 Federal, state and local participants in PRND operations;
- Initiated the first overarching National Technical Nuclear Forensics (NTNF) Annual Capability Assessment to evaluate how well the NTNF community can accomplish the mission in each phase of the process.

Ports, Waterways and Coastal Security

This program area manages and reduces terror-related risk in the U.S. Maritime. The Coast Guard's International Port Security (IPS) program employs effective anti-terrorism measures in foreign ports and ensures arriving vessels go though necessary security checks. The IPS Program has conducted visits in over 500 ports in more than 135 countries.

This program accomplished the following in FY 2009:

- Verified the effectiveness of anti-terrorism measures and security in 35 foreign ports.

Customs and Border Control

This program seeks to improve the targeting, screening, and apprehension of high-risk international cargo and travelers to prevent terrorist attacks through border security inspections and trade facilitation at ports of entry.

Accomplishments for this program in FY 2009 include:

- The Customs-Trade Partnership Against Terrorism (C-TPAT) completed an additional mutual recognition agreement with Japan;
- C-TPAT created a new enrollment sector for Third Party Logistics Providers involved in the international movement of cargo and began accepting and processing applications for companies eligible to participate in the program under this new sector; and
- 93% of requested cargo examinations conducted at foreign ports of origin were successfully made in cooperation with host nations under the Container Security Initiative (CSI).

DHS Biological and Chemical Security Programs

There are five programs which work to prevent and reduce the risk of a biological or chemical attack on the United States. These are listed below with their major accomplishments.

Medical and Biodefense Programs

This program within the DHS Office of Health Affairs works to bolster national biodefense readiness by enhancing the national architecture to rapidly detect, characterize, and respond effectively to a large-scale biological event.

The major accomplishments of this program in FY 2009 include:

- The BioWatch program sponsored an exercise program that included exercises in six BioWatch jurisdictions for both outdoor and subway events, comprised of a combination of notification drills, tabletop exercises and functional exercises to assess the jurisdiction's BioWatch preparedness;
- The Office of Component Services developed specialty protocols for Tactical Emergency Medical Personnel, initiated programs for credentialing of DHS health care personnel, and initiated a medical quality management program for the Department;
- The Office of Medical Readiness initiated the Health Security Intelligence Enterprise to incorporate public health and health care personnel into state and local fusion centers;
- The Food, Agricultural and Veterinary Defense division completed development of the Strategic Plan (for Federal Bio Planning Against Biological Attacks) for catastrophic foreign Animal Disease and Food Contamination Scenarios, and began development of a Benchmarking toolkit to allow state, local, and tribal organizations to measure their preparedness and response capabilities against established food and agricultural catastrophic scenarios.

Chemical and Biological

This program works to improve the understanding, technologies, and systems necessary to protect against possible biological and chemical attacks on the U.S. population, agriculture, or infrastructure. This program, within the Science and Technology directorate, protects against possible biological attacks, focusing on preventing the most catastrophic attacks including aerosolized anthrax and smallpox.

- The Bioassay-Near Term Project transitioned 10 potential biothreat agent-specific assays to the CDC Lab Response Network to support of the National Biomonitoring Architecture.

This program works through six projects.

- The Systems Studies and Decision Support Tools Project conducts system studies and net assessments to identify and assess effective measures for deterrence, detection, and mitigation of biological terrorism acts against the U.S. population and infrastructure.

- The Threat Awareness Project works to identify threats posed by biological weapons, anticipate future threats, and conduct threat and risk assessments to guide prioritization of the Nation's biodefense investments.

- Surveillance and Detection Research and Development and Detection Operations develops next-generation detectors for biological threat agents, including fully autonomous detection capabilities for the third generation BioWatch system.

- DHS Forensics Project area operates the National BioForensics and Analysis Center (NBFAC) and conducts bioforensics research in support of criminal investigative cases, with the ultimate goal of attribution, apprehension, and prosecution of the perpetrator.

- Response and Restoration efforts provide advanced planning, develops concepts-of-operation, and funds exercises and training for responding to and recovering from a large-scale biological attack.

Laboratory Facilities

This program within the Science and Technology directorate works to improve the Nation's core of productive science, technology, and engineering laboratories, organizations, and institutions, which can develop the knowledge and technology required to secure our homeland through science and technology.

The major accomplishments of this program in FY 2009 include:

- After an extensive three-year site selection process the S&T Directorate issued a Record of Decision selecting the Manhattan, Kansas site for the National Bio and Agro-Defense Facility which provides an integrated animal, foreign

animal, and zoonotic disease research, development, and testing facility to support the complementary missions of DHS and USDA;
- Met 90% of program milestones supporting protection against biological attacks.

Explosives
This program within the Science and Technology directorate works to improve explosive countermeasure technologies and procedures to prevent attacks on critical infrastructure, key assets, and the public through science and technology.

The major accomplishments of this program in FY 2009 include:
- Developed advanced capabilities to detect explosives and concealed weapons, including improvised explosive devises or homemade explosives with detonation potential in passenger cabins and weapons that may aid the hostile takeover of mass transit;
- Introduced new standalone technologies, such as Computed Tomography to continue improving detection performance and the detection of novel explosives;
- Introduced five new technologies that have reached a maturity level of TRL 6 or above, which indicates readiness for demonstration;
- Met 72% of program milestones as established in the fiscal year's budget execution plan.

Aviation Security (TSA):
This program within the Transportation and Security Administration works to reduce the probability of a successful terrorist or other criminal attack to the air transportation system by improved aviation security.

- Tripled the number of Improvised Explosive Devices Checkpoint drills;
- Screened more than 570 million people, more than 420 million bags, and prevented more than 830 guns from being brought onto planes;
- Developed advanced imaging technology, advanced technology x-ray, bottled liquid scanner and new explosive trace detection training, and trained all airports where this equipment is deployed;
- Networked U.S. Centers for Disease Control policy with foreign officials for the containment of the H1N1 virus in aviation;
- In February 2009, achieved 50% screening of all cargo on passenger aircraft departing from the U.S.;
- Published the Air Cargo 100% Screening Interim Final Rule which was effective November 16, 2009 (requires 100% screening by August 2010);

Sources

Department of Defense

Defense Threat Reduction Agency, Fiscal Year 2011 Budget Estimate Cooperative Threat Reduction Program, February 2010. http://comptroller.defense.gov/defbudget/fy2011/budget_justification/pdfs/01_Operation_and_Maintenance/O_M_VOL_1_PARTS/CTR_FY11.pdf

Lugar, Richard G., The Nunn-Lugar Scorecard, last accessed on August 18, 2010. http://lugar.senate.gov/nunnlugar/scorecard.html

Office of Cooperative Threat Reduction, Cooperative Threat Reduction, Annual Report to Congress Fiscal Year 2010

Department of Energy

Department of Energy, FY 2011 Congressional Budget Request, 2010. http://www.cfo.doe.gov/budget/11budget/Content/Volume%201.pdf

National Nuclear Security Administration,. GTRI: Reducing Nuclear Threats, January 2009. http://nnsa.energy.gov/mediaroom/factsheets

Department of State

Annual Report 2009, International Science and Technology Center in Moscow, 2010. http://www.istc.ru/istc/istc.nsf/va_webresources/Annual_Reports/$file/AR%202009%20final.pdf

Annual Report 2009, Science and Technology Center in Kiev, 2010. http://www.stcu.int/documents/stcu_inf/reports/annual/2009/2009_Annual_Report.pdf

Department of State, Congressional Budget Justification, Foreign Operations Fiscal Year 2011. http://www.state.gov/documents/organization/137936.pdf

Discussions and communiqués with State Department officials, August 2010.

Department of Homeland Security

Department of Homeland Security, Budget-in-Brief Fiscal Year 2011, 2010. http://www.dhs.gov/xlibrary/assets/budget_bib_fy2011.pdf

Department of Homeland Security, Congressional Budget Justification Fiscal Year 2011, 2010. http://www.dhs.gov/xlibrary/assets/dhs_congressional_budget_justification_fy2011.pdf

Department of Homeland Security, United States Coast Guard Fiscal Year 2011 Congressional Justification, 2010.
http://www.uscg.mil/history/allen/docs/USCGFY2011CongressionalJustification.pdf