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Review of Implementation of the Baker-Cutler Report

Background

A Report Card on the Department of Energy's Nonproliferation Programs with Russia—perhaps better known as the Baker-Cutler report—was released in January 2001. It reflected the findings of a task force established by Secretary of Energy Bill Richardson and co-chaired by former Senate Majority Leader Howard Baker and former White House Counsel Lloyd Cutler that was tasked to “review and assess DOE’s nonproliferation programs in Russia and make recommendations for their improvement.” The Implementing Recommendations of the 9/11 Commission Act of 2007 directs this Commission to reassess and, where necessary, update the Baker-Cutler report and examine how effectively its recommendations have been implemented. This appendix addresses that legislative requirement. Part I examines Baker-Cutler recommendations and their implementation; part II reviews key programs designed to address nuclear security concerns in Russia, as administered by the Department of Energy through the National Nuclear Security Administration (NNSA).

Part I: Assessment

The Baker-Cutler report found that (1) the danger that nuclear weapons or weapons-usable material in Russia could be stolen and sold to terrorists or a hostile nation was the most urgent and unmet national security threat to the United States; (2) the budget levels for DOE’s programs were inadequate and management of cooperative nonproliferation programs across the U.S. government too diffuse; and (3) the U.S. government needed to “develop an enhanced response proportionate to the threat.”

Each of these findings were addressed by the Department of Energy. Recognizing the risks from undersecured nuclear materials in Russia, DOE

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accelerated efforts to better secure that material. The department also increased the budget for these and related efforts and, in recognition of the gravity of the threat, initiated a number of programs to complement nuclear materials security efforts.

The Baker-Cutler report specified six steps to be taken, calling on the United States to:

- **Formulate a strategic plan** to secure and/or neutralize in the next eight to ten years all nuclear weapons-usable material located in Russia and to prevent the outflow from Russia of scientific expertise that could be used for nuclear or other weapons of mass destruction;
- **Identify specific goals and measurable objectives** within the strategic plan and associated budgets for each program, as well as provide criteria for success and an exit strategy;
- **Accelerate the pace and increase funding** for specific programs in coordination with the strategic plan;
- Reach agreement with the Russian Federation at the highest level on **acceptable measures for transparency and access**;
- Improve coordination within the U.S. Government by establishing a **high-level leadership position in the White House**; and
- **Focus public and congressional attention** on this critical issue.

The report's principal recommendation—that a comprehensive strategic plan be formulated to address concerns over nuclear materials in Russia and stem the flow of expertise—was not implemented. However, the spirit of the Baker-Cutler recommendations—which aimed primarily at expanding and accelerating activity to secure nuclear materials in Russia—was clearly followed, accelerated significantly by the 2005 Bratislava Nuclear Security Initiative. One concern is that the program has not had access to all the sites in Russia where sensitive materials are stored, and it has proved difficult to get a comprehensive accounting from Russia of all its sites and facilities.

The United States also funded programs to reduce the prospect of scientist migration, the second principal substantive objective of the Baker-Cutler report. Yet the successes of these programs, though considerable, proved hard to quantify; and over time, changes were made as the security environment evolved. One of DOE's two programs (the Nuclear Cities Initiative) was eliminated. The other, the Initiatives for Proliferation Prevention (IPP), remains active but at lower funding levels than in the past.

The paragraphs below summarize the Commission's conclusions on the other steps called for by the Baker-Cutler report.

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DOE has developed specific goals and objectives for its programs in Russia and the republics of the former Soviet Union, as well as metrics for gauging success and determining program budgets.

The funding and pace of activity in Russia have increased. Program-level strategic plans, though not specifically a product of the Baker-Cutler recommendation, are regularly developed, updated, and justified to senior management as part of the DOE planning process. But no government-wide strategic plan has been formulated to guide the department's activities in detail.

The record on the development of "exit strategies" is mixed. The fundamental mission in Russia—to secure nuclear materials there and transfer responsibility for maintaining nuclear security upgrades to Russia—has a clear end date mandated by Congress (2013), and it appears that this deadline will be met. Other programs, such as efforts to facilitate the shut down of Russia's plutonium producing reactors, are also on track to complete their work. However, programs such as DOE's efforts to engage nuclear scientists in civilian pursuits do not have clearly defined end points, although they have changed their approach to address threats as they are evolving. Nonetheless, the scientist engagement program would do well to further refine its definition of success and to ensure that its long-term objectives are commensurate with threat projections.

No White House-level coordination position has yet been established (as discussed in more detail in the body of this report). A senior advisor on WMD proliferation and terrorism could help augment and elevate public awareness of what the government is doing in this area. Currently, information is disseminated through the speeches, testimony, and public outreach efforts of DOE.

Programs to address plutonium in Russia—by facilitating the shut-down of reactors still producing it and by disposing of 34 metric tons of the material—are now on track. A significant amount of Russia's excess highly enriched uranium (HEU) is being eliminated, consistent with the Baker-Cutler objectives. At the same time, efforts are just now getting under way to undertake feasibility studies on converting Russian civilian research reactors from HEU to low-enriched uranium (LEU). The United States must urge Russia to accelerate this conversion and to work with the United States on a plan to make additional HEU available for blend-down (processing into a less-enriched form).

As a means to reduce U.S. costs, the Baker-Cutler report encouraged the U.S. government to press other nations to contribute to threat reduction programs in Russia. Shortly after the report was released, the G-8 Global Partnership, which committed G-8 and European Union states to contributing \$20 billion over 10 years for threat reduction programs in Russia, was established. Half of this amount would come from the United States, and DOE programs

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are counted toward the U.S. share. The goal is close to being met. Among the principal contributors are Canada, Japan, other G-8 nations, and the European Union. In addition, the National Nuclear Security Administration has received more than \$45 million in international contributions and pledges from seven countries. DOE/NNSA also has several cost-sharing partnerships in place that involve both monetary and in-kind contributions (equipment and training) from more than 20 countries.

Sustainability is a concern, however. Russia has not fully committed to increase resources for nuclear security upgrades as U.S. efforts come to completion, or taken steps to ensure that an adequate security culture will be in place in Russia after U.S. programs have ended. Russia's budgets to implement and sustain physical protection and security upgrades at both the site and national levels are unknown. Because Russia has not created a comprehensive baseline inventory, there are no reliable and comprehensive national accounting systems to monitor fissile material in Russia. Russia and NNSA are working together to build a federal database to track its proliferation-attractive nuclear material.

Overall, substantial progress has been made since 2001 in meeting the essential objectives in Russia articulated in the Baker-Cutler report. At the same time, there is ample opportunity for further progress. Securing Russian warheads and material must remain a priority. Without a solid and transparent commitment by Russia to maintain the level of security that has been implemented, the existing achievements are imperiled. It is important that the United States and Russia strengthen partnerships to secure and eliminate dangerous nuclear material, convert Russia's civil nuclear reactors from the use of HEU to LEU, and negotiate a transparency regime to support plutonium disposition (discussed below). In addition, securing Russia's borders and engaging scientists at targeted facilities in Russia in civilian pursuits should remain priority objectives. As the Baker-Cutler report emphasized, these efforts must be coordinated within the U.S. government to ensure maximum efficiency and effectiveness as the programs adapt to new challenges and as the United States and Russia shift from having a donor-recipient relationship to being partners.

Next Steps—"Updating" Baker-Cutler

Looked at narrowly—in terms only of U.S. nuclear security programs in Russia—the Baker-Cutler report has no need to be "updated." What is more important, as discussed in the section of our report titled "Nuclear Proliferation and Terrorism," is that, in effect, a new Baker-Cutler be undertaken in the form of a broad strategic review of cooperative nuclear security programs and nuclear security challenges worldwide, which include remaining work in Russia.

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As discussed in the text of this report, the Commission recommends that the next President conduct a bottom-up review of all threat reduction programs in the former Soviet Union (FSU) and throughout the world, to ensure that they are being implemented as effectively as possible, and that a strategy for addressing potential gaps in coverage be articulated. This assessment should identify programs that play a critical role worldwide and could be expanded; in addition, it should identify programs that may have achieved their objectives or outlived their usefulness and could therefore be reduced, reoriented, or eliminated. In weighing the possible expansion of programs to other nuclear weapons states, this review needs to evaluate the openness of such states to U.S. or international assistance. Finally, the review needs to assess what Russia may be willing to do in cooperation with the United States, particularly with respect to cost sharing, given its new, more active role in international affairs and the improvements in its economic status in the years since the Baker-Cutler report was produced.

Part II: Review and Assessment of Relevant Programs

Key programs evaluated by the Baker-Cutler commission included

- The Material Protection, Control, and Accounting (MPC&A) Program, which secures nuclear weapons and materials in Russia.
- The Highly Enriched Uranium (HEU) Purchase Agreement and Transparency Implementation Program, which is blending down 500 metric tons of HEU from Russia's weapons programs into fuel for use in the United States.
- The Russian Plutonium Disposition Program, which commits the United States and Russia to each eliminate 34 metric tons of plutonium declared in excess of defense requirements.
- The Second Line of Defense (SLD) program, which combats illicit trafficking of nuclear material and related equipment across Russia's borders.
- The Initiatives for Proliferation Prevention (IPP) Program and the Nuclear Cities Initiative (NCI), which implemented DOE's scientist engagement efforts (the programs were brought under common management in 2002; NCI projects in Russia's closed nuclear cities ended in 2005, and the program was not renewed).

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Material Protection, Control, and Accounting

The Baker-Cutler report noted that only a modest fraction of weapons-usable material had received comprehensive security upgrades, that disputes over access and transparency were undermining the broader context of cooperation, that no program was in place to sustain the work already done, and that a comprehensive testing and assessment program still awaited implementation.

Since the publication of the report, the MPC&A program, in close coordination with the Department of Defense, has accelerated U.S. cooperation with Russia on nuclear security. In February 2005, the United States and Russia signed the Bratislava Nuclear Security Initiative, which for the first time included a comprehensive plan for cooperation on security upgrades of Russian nuclear facilities at Federal Atomic Energy Agency (Rosatom) and Ministry of Defense sites. The MPC&A program is on track to complete these upgrades by the end of 2008.

Including sites added after the Bratislava Initiative was signed, the total scope of the MPC&A program now comprises 73 Russian nuclear warhead sites (65 upgraded by the end of fiscal year 2008) and 224 buildings containing nuclear material in Russia and other former Soviet countries (181 complete as of the end of FY 2008). While the precise number of sites containing nuclear material is not clear, these are believed to include the vast majority of overall sites. In the National Defense Authorization Act of 2003, Congress mandated that all responsibility for nuclear security work in Russia be transferred over to the Russian Federation by January 1, 2013. The MPC&A program expects to complete all security upgrades in Russia in 2012.

Consistent with the Baker-Cutler recommendations, MPC&A has made considerable progress in consolidating nuclear materials in fewer facilities. For example, the MPC&A program has eliminated special nuclear material (SNM) from 25 buildings at civilian-sector sites, including the removal of all highly enriched uranium from one civilian-sector site entirely. However, many Russian nuclear sites are apparently reluctant to give up nuclear material, either because they plan to restart dormant research and operations activity or because they wish to retain the prestige and worker benefits associated with a nuclear mission.

In 2007 the MPC&A program developed a Joint Sustainability Plan, signed by U.S. and Russian government officials, which requires Rosatom to sustain U.S.-provided physical protection upgrades installed over the past 14 years. The plan contains seven Sustainability Principles that outline at both the industry and site level the fundamental elements of sustainability—covering human resources, finances, and maintenance. NNSA and Rosatom are now developing a Joint Transition Plan, which will set forth estimated dates for completing the transfer of sustainability activities to Russian control. This plan will identify sus-

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tainability requirements for each site and establish timelines for the transfer of financial responsibility; NNSA continues to seek, but has not received, commitments from Rosatom to increase funding for site- and national-level MPC&A activities as part of the transition process.

Highly Enriched Uranium Transparency

NNSA expects to complete the blending down of 500 metric tons of Russia's HEU by 2013. However, Russia has shown little interest in continuing the process beyond that amount, in part because it believes that it may be able to get a better price for its downblended HEU from other countries. Legislation recently proposed by Senator Pete Domenici would improve Russia's access to the U.S. market, on the condition that Moscow blend down additional HEU beyond the 500 metric tons already agreed. The Commission believes that this is a sensible approach.

Russian Plutonium Disposition

The September 2000 Plutonium Management and Disposition Agreement (PMDA) committed the United States and Russia to each dispose of 34 metric tons of plutonium, but a number of obstacles slowed their progress. These included a disagreement over the path for disposing of the material, the liability of contractors working in the Russian Federation, financing, and the lack of a monitoring regime to provide confidence that the program would not lead to proliferation.

Over time, most of these issues were resolved; in November 2007, the United States and Russia agreed on a plan for Russia to dispose of the 34 metric tons of its plutonium as mixed oxide (MOX) fuel in Russia's fast reactors—the BN-600 and the BN-800, which is currently under construction. Russia has also pledged to bear most of the cost and could begin disposing of its plutonium by 2012. Under this plan, the U.S. contribution is capped at \$400 million. Both the United States and Russia plan to complete disposition of all 68 metric tons of plutonium between 2035 and 2040. This schedule, subject to congressional funding, takes into account both the time needed to construct facilities in Russia and the United States and the time needed to actually dispose of the material.

One unresolved issue concerns the establishment of a monitoring and inspection regime. For years efforts have been made to negotiate such a regime, but Russian concerns over transparency and access have prevented an agreement from being reached.

Second Line of Defense

The Baker-Cutler report called for an increase in funding for the Second Line of Defense (SLD) program because, in the task force's judgment, the program was

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moving forward too slowly. In FY 2000, the program's budget was \$6 million; by FY 2008, it was \$267 million. In response to heightened concerns after 9/11, SLD work in the FSU countries has steadily and consistently expanded to other countries. SLD's Core Program installs radiation detection equipment at borders, airports, and strategic feeder ports, primarily in Russia and the former Soviet republics.

In 2006, the program reached an agreement with the Federal Customs Service of Russia to equip all 350 Russian border crossings with radiation detection equipment by the end of 2011. A total of 117 sites in Russia have been equipped to date, and costs for this effort are shared by NNSA and the Russian Customs Service. The Core Program has identified a total of 450 sites where detection equipment will be installed. The Megaports Initiative, launched in 2003, works with countries to equip seaports with radiation detection equipment. The program is operational in ports in 19 countries. Program officials have identified 75 ports altogether for potential cooperation.

Initiatives for Proliferation Prevention and Nuclear Cities Initiative

The Baker-Cutler report noted that the IPP suffered from years of inconsistent funding from Congress, and that metrics, such as the number of actual weapons scientists engaged in commercial jobs, were difficult to document. The report emphasized that careful attention should be given to defining criteria for success and developing an exit strategy for the program.

In 2005, DOE established the Global Initiatives for Proliferation Prevention (GIPP): it combined the missions of the IPP and the NCI, which worked with former scientists in Russia's closed nuclear cities, and expanded the scientist engagement mission beyond Russia and the former Soviet Union. GIPP has engaged thousands of former weapons scientists, engineers, and technicians at more than 180 facilities in the former Soviet Union, as well as hundreds of former weapons specialists in Libya and Iraq.

GIPP coordinates closely with the Department of State's Global Threat Reduction (GTR) program, which also works with former FSU weapons scientists and has expanded to include facilities in Iraq and Libya. As GIPP's original mission has evolved, it has reduced the scope of its work in the FSU to focus on institutes deemed potentially vulnerable to targeted recruitment. However, the program still has not developed a formal exit strategy.

Relevant Programs Initiated After the Baker-Cutler Report

Additional programs undertaken by DOE/NNSA consistent with Baker-Cutler objectives include the Elimination of Weapons Grade Plutonium Production (EWGPP) program, which is replacing Russia's last three

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plutonium-producing reactors with fossil fuel plants. Two of these reactors have already been shut down, and the third is scheduled to close no later than December 2010.

The Baker-Cutler report called for the return of HEU from Soviet-built research reactors to Russia for downblending and disposition. This is being accomplished through NNSA's Global Threat Reduction Initiative (GTRI), which is working to convert U.S.- and Russian-built HEU-fueled research reactors around the world to less-proliferation-sensitive LEU and to repatriate the HEU to its country of origin. To date, GTRI has helped return 764 kilograms of Russian-origin HEU from reactors for blending down. This total includes 21 HEU shipments from Soviet-built research reactors in Serbia, Romania, Bulgaria, Libya, Uzbekistan, the Czech Republic, Latvia, Poland, Germany, Hungary, and Vietnam. GTRI reports that it plans to remove or dispose of about 2,245 kilograms of Russian-origin HEU from civilian sites by 2015.

International Nonproliferation/Counterproliferation Treaties, Regimes, and Initiatives

Treaties in Force

Treaty on the Nonproliferation of Nuclear Weapons (NPT)

The NPT is designed to prevent the spread of nuclear weapons and weapons technology, promote cooperation in the peaceful uses of nuclear energy, and further the goal of achieving complete nuclear and general disarmament. It entered into force on March 5, 1970, and has 188 members. Only India, Israel, North Korea, and Pakistan are not members of the NPT.

The NPT establishes a safeguards system, which includes inspections of civilian nuclear facilities, to monitor compliance with the treaty. This safeguards system is administered by the International Atomic Energy Agency (IAEA). In 1997, the IAEA adopted an Additional Protocol that, when ratified by individual NPT members, gives the agency expanded safeguards authority and greater access to verify nuclear declarations.

Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological and Toxin Weapons (BWC)

The Biological and Toxin Weapons Convention (BWC) bans the development, production, acquisition, and retention of biological agents and toxins, weapons, and specialized means of delivery. It entered into force on March 26, 1975. There are currently 162 state parties to the BWC. Notable non-parties include North Korea, Syria, Egypt, and Israel.

Convention on the Physical Protection of Nuclear Material (CPPNM)

The CPPNM entered into force on February 7, 1987. It has 137 state parties. The convention is the only international legally binding agreement on the physical protection of nuclear material. An amendment to the convention negotiated in 2005 will strengthen it by requiring state parties to protect nuclear facilities and material in peaceful domestic use and storage as well as during transport. The amendment will enter into force following its ratification by two-thirds of the state parties to the convention.

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Strategic Arms Reduction Treaty (START)

START was signed by the United States and the Soviet Union in July 1991. It limits long-range nuclear forces—land-based intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and heavy bombers—and contains complex verification provisions. In May 1992, Belarus, Kazakhstan, Russia, Ukraine, and the United States signed a protocol naming all five parties to the treaty. START entered into force in December 31, 1994. It will expire on December 31, 2009, unless the parties agree to extend it.

Strategic Offensive Reductions Treaty (“Moscow Treaty”)

The Moscow Treaty was signed on May 24, 2002, and entered into force on June 1, 2003. The treaty requires the United States and Russia to reduce their strategic nuclear warheads to between 1,700 and 2,200 by December 31, 2012, at which time the treaty expires.

Treaties Negotiated but Not in Force

Comprehensive Nuclear Test Ban Treaty (CTBT)

The CTBT bans any nuclear weapon test explosion or any other nuclear explosion. The CTBT has not entered into force. The provisions of the treaty require the 44 states with nuclear reactors to ratify the treaty before it enters into force. In October 1999, the U.S. Senate failed to give its consent to ratification of the treaty. Nevertheless, the United States is observing a unilateral moratorium on nuclear tests.

Proposed Treaties

Fissile Material Cut-Off Treaty (FMCT)

A proposal that the international community negotiate a ban on the production of fissile material (plutonium and enriched uranium) that could be used in nuclear weapons is on the long-term negotiating agenda at the United Nations Conference on Disarmament in Geneva. Negotiations have been largely stalled since 1993.

Nonproliferation Regimes

Zangger Committee

In 1971, a group of seven NPT nuclear supplier nations formed the Nuclear Exporters Committee, known as the Zangger Committee, to assist in restricting

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nuclear trade as called for in Article III of the NPT. In 1974, the Zangger Committee compiled a list of nuclear export items that could be potentially useful for military applications and agreed that the transfer of items on the list would trigger a requirement for IAEA safeguards to ensure that the items were not used to make nuclear explosives.

Nuclear Suppliers Group (NSG)

In 1975, the major nuclear suppliers formed the London Club, which is now known as the Nuclear Suppliers Group (NSG). The NSG is an informal group of 45 nuclear supplier countries that seeks to halt proliferation of nuclear weapons through the implementation of guidelines for nuclear material and technology exports.

Executive Agreements

HEU Purchase Agreement

Under the United States–Russian Highly Enriched Uranium (HEU) Purchase Agreement, signed in 1993, 500 tons of HEU from dismantled Russian nuclear weapons is to be blended down to proliferation-resistant low-enriched uranium (LEU) by 2013. The United States Enrichment Corporation, a private corporation serving as executive agent for the HEU Purchase Agreement, purchases this LEU and resells it to U.S. companies that use it as commercial nuclear reactor fuel.

Plutonium Management and Disposition Agreement (PMDA)

Under the PMDA, signed in September 2000, the United States and Russia each agreed to dispose of 34 metric tons of weapons-grade plutonium. A series of disagreements were settled in a follow-on agreement in November 2007, with an overall understanding to complete the disposition of 68 metric tons total of plutonium between 2035 and 2040.

Nonproliferation/Counterproliferation Initiatives

Proliferation Security Initiative (PSI)

The PSI was launched in 2003 to increase international cooperation in interdicting shipments of weapons of mass destruction (WMD), their delivery systems, and related materials. As of October 2008, 92 nations have formally committed to PSI participation as partner states.

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Global Initiative to Combat Nuclear Terrorism (GICNT)

The GICNT was launched by the United States and Russia on July 15, 2006, to expand and accelerate the development of their partnership capacity to combat the global threat of nuclear terrorism. The GICNT is open to other partner nations, which currently number 75.

Bratislava Nuclear Security Initiative

President Vladimir Putin and President George W. Bush agreed to this initiative on nuclear security cooperation at a February 2005 summit in Bratislava, the Republic of Slovakia. The Bratislava Nuclear Security Initiative is focused on five key areas: emergency response cooperation, sharing best practices to promote nuclear security, enhancing nuclear security cultures in both countries, research reactor conversion and fuel return, and promoting the implementation of UNSCR 1540. A senior U.S.-Russia group chaired by the U.S. Secretary of Energy and the Director of the Federal Atomic Energy Agency (Rosatom) oversees this work and provides progress reports to the Presidents every six months.

United Nations Security Council Resolution 1540

UNSCR 1540 is a 2004 resolution that establishes binding obligations on all UN member states to take and enforce measures against WMD proliferation, such as developing the laws and regulations they need to criminalize proliferation, improving physical protection and safeguards at nuclear facilities, strengthening export controls, and developing a robust security culture focused on reducing the risk of theft or diversion of nuclear materials or technology.

Acronyms and Abbreviations

AMI	American Media International
BSL	Biosafety Level
BW	Biological Weapons
BWC	Biological Weapons Convention
CDC	Centers for Disease Control and Prevention
CIA	Central Intelligence Agency
CP	counterproliferation
CPPNM	Convention for the Physical Protection of Nuclear Material
CSI	Container Security Initiative
CT	counterterrorism
CTBT	Comprehensive Test Ban Treaty
CTR	cooperative threat reduction
DHS	Department of Homeland Security
DNI	Director of National Intelligence
DOE	Department of Energy
EU	European Union
EWGPP	Elimination of Weapons Grade Plutonium Production
FATA	Federally Administered Tribal Areas
FBI	Federal Bureau of Investigation
FMCT	Fissile Material Cut-Off Treaty
FSU	former Soviet Union
G-8	Group of Eight
GAO	Government Accountability Office
GICNT	Global Initiative to Combat Nuclear Terrorism
GIPP	Global Initiatives for Proliferation Prevention
GSPC	Salafist Group for Preaching and Combat (Groupe Salafiste pour la Prédication et le Combat)
GTRI	Global Threat Reduction Initiative
HEU	highly enriched uranium
HHS	Department of Health and Human Services
HSC	Homeland Security Council
IAEA	International Atomic Energy Agency
ICBM	Intercontinental Ballistic Missile

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IHR	International Health Regulations
INFCIRC	Information Circular
IPP	Initiatives for Proliferation Prevention
LEU	low-enriched uranium
MOX	mixed oxide
MPC&A	Material Protection, Control and Accounting
NCI	Nuclear Cities Initiative
NCPC	National Counterproliferation Center
NCTC	National Counterterrorism Center
NNSA	National Nuclear Security Administration
NPT	Nonproliferation Treaty
NSC	National Security Council
NWFP	North-West Frontier Province
ODNI	Office of the Director of National Intelligence
OIE	World Organization for Animal Health (formerly known as the Office international des épizooties)
PCC	Policy Coordinating Committee
PMDA	Plutonium Management and Disposition Agreement
PSI	Proliferation Security Initiative
Rosatom	[Russian] Federal Atomic Energy Agency
SARS	severe acute respiratory syndrome
SLBM	submarine-launched ballistic missile
SLD	Second Line of Defense
SNM	special nuclear material
START	Strategic Arms Reduction Treaty
UNSCR	United Nations Security Council Resolution
USAID	U.S. Agency for International Development
USDA	United States Department of Agriculture
WHO	World Health Organization
WMD	Weapons of Mass Destruction

Commissioner Biographies

Senator Bob Graham, Commission Chairman, is a former two-term governor of Florida and served for 18 years in the United States Senate. This is combined with 12 years in the Florida legislature for a total of 38 years of public service. In the Senate, he served on the Select Committee on Intelligence—including eighteen months as chairman in 2001–2002. During this time, he served as co-chairman of the joint House-Senate inquiry of the events surrounding the September 11th attacks. Following the release of the Joint Inquiry's final report in July 2003, Senator Graham steadfastly advocated reform of the intelligence community and sponsored legislation to bring about needed changes. Based on these experiences, he authored *Intelligence Matters*.

After retiring from the Senate in 2004, Senator Graham served for a year as a senior fellow at the Harvard Kennedy School of Government. His primary focus was on civic education and intelligence. While there, he commenced research and writing a book, to be published early 2009, entitled *America, The Owner's Manual*. He has established a Center for Public Service at the University of Florida and the University of Miami, which primarily focuses on participatory citizenship, homeland security and the Americas. He received his bachelors degree from the University of Florida and his law degree from Harvard Law School.

Senator Jim Talent, Commission Vice-Chairman, was elected at the age of 28 to the Missouri House of Representatives, where he served for eight years, beginning in 1984. At the age of 32, Senator Talent was unanimously chosen by his colleagues to be the Minority Leader, the highest-ranking Republican leadership position in the Missouri House. He served in that capacity until 1992, when he was elected to Congress to represent Missouri's Second District; he served in the House until 2001.

While in the House, Senator Talent served for eight years on the House Armed Services Committee. In 2002, Missourians elected Talent to the United States Senate, where he served until 2007. During that time, he served as the Chairman of the Armed Services Seapower Subcommittee.

Currently, Senator Talent serves as a Distinguished Fellow at the Washington, D.C.-based Heritage Foundation, where he specializes in military readiness issues and welfare reform. Senator Talent received his bachelor's degree from Washington University in St. Louis, where he received the Arnold J. Lien Prize as the most outstanding undergraduate in political science. He graduated Order of the Coif from the University of Chicago Law School in 1981 and clerked for Judge Richard Posner of the United States Court of Appeals from 1982 through 1983.

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Graham Allison is Douglas Dillon Professor of Government and Director of the Belfer Center for Science and International Affairs at Harvard's John F. Kennedy School of Government. Dr. Allison's most recent book, *Nuclear Terrorism: The Ultimate Preventable Catastrophe*, is now in its third printing and was selected by the *New York Times* as one of the "100 most notable books of 2004."

From 1977 to 1989, Dr. Allison served as Dean of the Kennedy School. Under his leadership, a small, undefined program grew twentyfold to become a major professional school of public policy and government.

From 1985 to 1987, Dr. Allison served as Special Advisor to the Secretary of Defense; from 1993 to 1994, as Assistant Secretary of Defense for Policy and Plans. He has the sole distinction of having twice been awarded the Defense Department's highest civilian award, the Distinguished Public Service Medal, first by Secretary Casper Weinberger and then by Secretary William Perry.

Dr. Allison has authored or co-authored 20 books and hundreds of articles. He has been a member of the Secretary of Defense's Defense Policy Board for Secretaries Weinberger, Carlucci, Cheney, Aspin, Perry, and Cohen. He was a founding member of the Trilateral Commission, was a Director of the Council on Foreign Relations, and has been a member of many public committees and commissions. He was educated at Davidson College, and he earned a B.A. in history at Harvard College; B.A. and M.A. degrees in philosophy, politics, and economics at Oxford University; and his Ph.D. at Harvard University.

Robin Cleveland currently serves as a Principal with Olivet Consulting LLC. Previously, she has served as the Counselor to the President of the World Bank, Associate Director at the White House Office of Management and Budget, and in a variety of key positions with Senator Mitch McConnell on the Senate Intelligence Committee, Senate Foreign Relations Committee, and Senate Appropriations Committee.

Ms. Cleveland co-led efforts to develop two presidential initiatives, the Millennium Challenge Corporation and the President's Emergency Plan for AIDS Relief, undertakings that reflect her experience linking policy, performance, and resource management. Ms. Cleveland graduated from Wesleyan University with honors.

Stephen G. Rademaker became Senior Counsel to BGR Holding LLC in January 2007. He continues to serve as the U.S. representative on the UN Secretary General's Advisory Board on Disarmament Matters, a position he has held since 2003.

Mr. Rademaker came to BGR Holding from the staff of Senate Majority Leader Bill Frist, where he served as Policy Director for National Security Affairs and Senior Counsel.

In 2002, Mr. Rademaker was confirmed by the Senate as an Assistant Secretary of State, and from then until 2006 he headed at various times three

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bureaus of the Department of State, including the Bureau of Arms Control and the Bureau of International Security and Nonproliferation. He directed nonproliferation policy toward Iran and North Korea, as well as the Proliferation Security Initiative.

Immediately prior to joining the Department of State, Rademaker was Chief Counsel to the Select Committee on Homeland Security of the U.S. House of Representatives, where he was responsible for drafting the legislation that created the Department of Homeland Security.

Mr. Rademaker has also held positions on the staff of the Committee on International Relations of the House of Representatives, including Deputy Staff Director and Chief Counsel.

From 1992 to 1993, Mr. Rademaker served as General Counsel of the Peace Corps. He returned briefly to the agency in 2000–2001 as the Bush-Cheney transition's Director of Transition for the Peace Corps.

Mr. Rademaker received three degrees from the University of Virginia: a B.A. with Highest Distinction in 1981, a J.D. in 1984, and an M.A. in foreign affairs in 1985. While at the University of Virginia he was made a member of Phi Beta Kappa and the Order of the Coif.

Congressman Timothy J. Roemer served in the U.S. House from 1991 to 2003. After the attacks of September 11, Mr. Roemer used his position on the House Permanent Select Committee on Intelligence to support the work of a joint congressional inquiry into the attacks. Mr. Roemer also was the key sponsor of legislation to establish the National Commission on Terrorist Attacks Upon the United States, better known as the 9/11 Commission. He went on to serve as a member of the 9/11 Commission.

Since leaving Congress in 2003, Mr. Roemer has continued to work on developing ways to strengthen national security as President of the Center for National Policy and as a Distinguished Scholar at the Mercatus Center at George Mason University.

Prior to his elected service, Mr. Roemer served on the staffs of Representative John Brademas of Indiana (1978–1979) and Senator Dennis DeConcini of Arizona (1985–1989).

He holds a Ph.D. in American government from the University of Notre Dame. Mr. Roemer also earned his M.A. from Notre Dame and received his B.A. from the University of California, San Diego.

Wendy R. Sherman is a Principal of The Albright Group LLC, a global strategy firm, and of Albright Capital Management LLC, an investment advisory firm focused on emerging markets.

During the Clinton administration, Ambassador Sherman served as Counselor and chief troubleshooter for the State Department, as well as Special Advisor to President Clinton and Policy Coordinator on North Korea.

Appendices

She serves on the Board of Directors of Oxfam America and the Board of Advisors for the Center for a New American Security, and is a member of the Council on Foreign Relations and the Aspen Strategy Group. She is also a member of the U.S.-India Strategic Dialogue and a regular participant in the Australian American Leadership Dialogue. Ambassador Sherman attended Smith College, and she earned a B.A. *cum laude* from Boston University and a master's in social work, Phi Kappa Phi, from the University of Maryland.

Henry D. Sokolski is the Executive Director of the Nonproliferation Policy Education Center. From 1989 to 1993, Sokolski served as Deputy for Nonproliferation Policy in the Office of the Secretary of Defense and received the Secretary of Defense's Medal for Outstanding Public Service. Prior to that appointment, Mr. Sokolski worked in the Secretary's Office of Net Assessment on proliferation issues.

From 1984 to 1988, Mr. Sokolski served as Senior Military Legislative Aide to Senator Dan Quayle; from 1982 through 1983, he served as Special Assistant on Nuclear Energy Matters to Senator Gordon Humphrey.

Mr. Sokolski also served as a consultant on proliferation issues to the intelligence community's National Intelligence Council. After his work in the Pentagon, Mr. Sokolski received a congressional appointment to the Deutch Proliferation Commission, which completed its work in 1999. He also served as a member of the Central Intelligence Agency's Senior Advisory Panel from 1995 to 1996.

Mr. Sokolski has authored and edited numerous works on proliferation-related issues, including *Best of Intentions: America's Campaign Against Strategic Weapons Proliferation*. He attended the University of Southern California and Pomona College, received his graduate education at the University of Chicago, and currently teaches nuclear proliferation issues at the Institute of World Politics in Washington, D.C.

Rich Verma is a partner at the law firm of Steptoe & Johnson LLP, where he practices international law and is also a member of the firm's government affairs practice. Most recently, Mr. Verma served as Senior National Security Advisor to the Senate Majority Leader, a position he held for several years. Mr. Verma also worked as Senior Counsel and Policy Director for the Senate Whip and served on the staff of Congressman John P. Murtha.

Mr. Verma is a veteran of the U.S. Air Force and a former country director for the National Democratic Institute for International Affairs. He holds degrees from the Georgetown University Law Center, American University's Washington College of Law, and Lehigh University. He is a member of the Council on Foreign Relations, was formerly an International Affairs Fellow of the Council, and has served on the National Academy of Sciences Panel on Critical Infrastructure Protection and the Law.

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