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**NAVAL
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MONTEREY, CALIFORNIA

THESIS

**REDUCING THE THREAT OF NUCLEAR
TERRORISM—A REPORT CARD ON THE OBAMA
ADMINISTRATION'S EFFORTS**

by

Drew P. Hargraves

December 2016

Thesis Advisor:
Second Reader:

James Clay Moltz
Zachary S. Davis

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**REDUCING THE THREAT OF NUCLEAR TERRORISM—A REPORT CARD
ON THE OBAMA ADMINISTRATION'S EFFORTS**

Drew P. Hargraves
Captain, United States Army
B.A., Seton Hall University, 2007

Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(COMBATING TERRORISM: POLICY & STRATEGY)**

from the

**NAVAL POSTGRADUATE SCHOOL
December 2016**

Approved by: James Clay Moltz, Ph.D.
Thesis Advisor

Zachary S. Davis, Ph.D.
Second Reader

Mohammed M. Hafez, Ph.D.
Chair, Department of National Security Affairs

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ABSTRACT

This thesis seeks to explain if President Barack Obama's efforts to reduce nuclear terrorism have had a meaningful impact. Key areas of observation include how well efforts have been implemented and how effectively the president has fostered domestic and international support. Early in his presidency, President Obama declared to the world that the United States would lead a concerted effort to reduce the threat of nuclear terrorism. Combined with the Nuclear Security Summits, the president's efforts quickly established reducing the threat of nuclear terrorism as a top priority for his administration. Over the ensuing eight years, President Obama diligently supported nonproliferation measures by enhancing the domestic and international nonproliferation architecture. The president's integrative approach wove nonproliferation efforts together that had, traditionally, not been used to reduce the threat of nuclear terrorism. The findings of this thesis indicate that most of the programs were successful but problems remain, particularly in areas linked to further arms reductions and international nonproliferation. The next president can further these efforts by continuing the integrative approach, crafting a more cooperative relationship with Congress and expanding threat reduction activities beyond Russia.

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LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|--------|---|
| AEA | Atomic Energy Act |
| CPPNM | Convention on the Physical Protection of Nuclear Material |
| CRS | Congressional Research Service |
| CTBT | Comprehensive Test Ban Treaty |
| CTBTO | Comprehensive Test Ban Treaty Organization |
| CTR | Cooperative Threat Reduction |
| DOD | Department of Defense |
| DOE | Department of Energy |
| DOS | Department of State |
| DPRK | Democratic People's Republic of Korea |
| EPG | Exercise Planning Group |
| FMCT | Fissile Material Cut-Off Treaty |
| GAO | Government Accountability Office |
| GICNT | Global Initiative to Combat Nuclear Terrorism |
| GMS | Global Material Security |
| GPRA | Government Performance and Results Modernization Act |
| GTRI | Global Threat Reduction Initiative |
| HEU | highly enriched uranium |
| IAEA | International Atomic Energy Agency |
| IAG | Implementation and Assessment Group |
| ICSANT | International Convention for the Suppression of Acts of Nuclear Terrorism |
| IMS | international monitoring system |
| INF | Intermediate Range Nuclear Forces |
| JCPOA | Joint Comprehensive Plan of Action |
| LEU | low enriched uranium |
| MENA | Middle East and North Africa |
| MNEPR | Multilateral Nuclear Environmental Program in the Russian Federation |
| MOD | Ministry of Defense |

| | |
|-----------|--|
| MOU | Memorandum of Understanding |
| MOX | mixed oxide fuel |
| NAS | National Academy of Sciences |
| NDAA | National Defense Authorization Act |
| New START | New Strategic Arms Reduction Treaty |
| NLT | no lower than |
| NNSA | National Nuclear Security Agency |
| NPR | Nuclear Posture Review |
| NPT | Nuclear Non-proliferation Treaty |
| NSDD | Nuclear Smuggling Detection and Deterrence |
| NSS | Nuclear Security Summit |
| NTI | Nuclear Threat Initiative |
| NWS | nuclear weapon state |
| NWFZ | nuclear weapon free zone |
| PSI | Proliferation Security Initiative |
| RFSCC | Russian Federation State Customs Committee |
| RMWG | Response and Mitigation Working Group |
| RTG | radioisotope thermoelectric generators |
| SLD | Second Line of Defense |
| SSNF | Solutions for a Secure Nuclear Future |
| UNGA | United Nations General Assembly |
| UNSCR | United Nations Security Council Resolution |
| WMD | weapons of mass destruction |
| WMD-FZ | weapon of mass destruction free zone |

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I. INTRODUCTION

A. MAJOR RESEARCH QUESTION

This thesis seeks to address the question: have the Obama administration's many nonproliferation efforts actually reduced the threat of nuclear terrorism? These efforts include policies and programs geared at securing weapons-usable nuclear material, limiting terrorists' access to existing nuclear weapons, and implementing nonproliferation programs specifically targeting nuclear terrorism.

B. SIGNIFICANCE OF THE RESEARCH QUESTION

The Obama administration's eight-year tenure offers a contemporary opportunity to assess U.S. nonproliferation efforts. Early in the President's first term, he visited the Czech Republic and declared the threat of nuclear terrorism to be "the most immediate and extreme threat to global security."¹ This sentiment guided a series of nonproliferation endeavors to secure nuclear materials and reduce global nuclear weapons stockpiles. More recently the President opted to visit Hiroshima, Japan, in an effort to "offer a forward-looking vision focused on our shared future" and to promote his overall nonproliferation efforts.²

Since 9/11, the threat of terrorism has become an influential consideration in the formation of national security policy; by extension, the threat has influenced ongoing and new nonproliferation measures aimed at reducing the threat of nuclear terrorism.³ Nonproliferation efforts have historically been a matter of concern between states; as such, they have been focused on preventing the spread of nuclear weapons. However, in

¹ Barack Obama, "Remarks By President Barack Obama in Prague as Delivered," White House Office of the Press Secretary, 2009, <https://www.whitehouse.gov/the-press-office/remarks-president-barack-obama-prague-delivered>.

² Gardiner Harris, et al. "Obama to Be First Sitting President to Visit Hiroshima," *New York Times*, May 10, 2016. http://www.nytimes.com/2016/05/11/us/politics/obama-hiroshima-visit.html?_r=0.

³ Mohamed ElBaradei, "Nuclear Proliferation and the Potential Threat of Nuclear Terrorism," International Atomic Energy Agency, November 2014, <https://www.iaea.org/newscenter/statements/nuclear-proliferation-and-potential-threat-nuclear-terrorism>.

spite of having promoted a global reduction in weapons, a significant number remains. Nuclear energy also continues to spread; a 2014 IAEA report identified 438 reactors currently operating and an additional 70 under construction.⁴ Combined with growing concern over the reach of terrorist organizations, the language of nonproliferation policies has once again become increasingly focused on the threat of nuclear terrorism.

The Obama administration has approached this challenge by both adopting the existing suite of nonproliferation efforts left in place from the Bush administration and beginning a broad range of new ones. Understanding the effect of these efforts, as well as the manner in which they were managed, is key to understanding what methods may best address the problem. Identifying the cause and effect behind the administration is necessary to determine not just what has worked, but why. The resource requirements, impact on foreign and domestic politics, and security implications will assist in fine-tuning future policies.

As an aside, an important distinction must be made in order to more accurately explore causes for success or failure—who “owns” a program or policy. This thesis will examine select nonproliferation policies administered during the Obama administration in two broader categories. Those programs owned and administered by the United States and those owned by the United Nations. While programs like the Megaports initiative involve a great deal of international cooperation and diplomacy, they are ultimately a U.S.-owned program and are therefore under the direct control of the U.S. government. U.S. ownership implies a great deal more control over policy happenings, and therefore a greater responsibility for their effectiveness than programs owned by foreign bodies.

C. THE ADMINISTRATION’S NONPROLIFERATION REGIME

Beginning early in his administration, President Obama publically emphasized the threat of nuclear terrorism as a byproduct of existing weapons and poorly secured materials potentially accessible materials.⁵ U.S. efforts to secure nuclear materials would

⁴ International Atomic Energy Agency, *Nuclear Power Reactors in the World*, (Vienna, Austria, IAEA, 2015), 11, <http://www-pub.iaea.org/MTCD/Publications/PDF/rds2-35web-85937611.pdf>.

⁵ Obama, “Remarks by President Barack Obama in Prague as Delivered.”

become a major effort for the administration. Marrying new programs, like the Four-Year Effort and the Nuclear Security Summits, with existing ones the President approached the issue of nuclear terrorism directly and early. This style captured his belief that the U.S. should take a “leading role in supporting a just and sustainable international order.”⁶ It also came to define the administration’s approach to nonproliferation abroad. It also provided an opportunity to refocus attention on the initial goal of zero nuclear weapons. The President’s policies placed great emphasis on diplomatic means that could be pursued with minimal congressional interference.⁷

Inviting the world to the table, President Obama has attempted to enlist support from the full gamut of political ideologies. Fundamentally, nonproliferation goals have found common ground between realists and idealists; however, the perceived nature of nonproliferation measures and their effects differ—realists highlight the practical role of material and technology controls while idealists see nonproliferation measures as a means for establishing international normative values eschewing nuclear weapons.⁸

Viewed through a constructivist lens, however, the global nonproliferation regime is an attempt to codify normative nuclear behavior with a legal framework, *vis-a-vis* the United Nations. This constructivist approach would hold that whatever the origin of their perspectives, actors are significantly influenced by “social relationships” and shared social practices.⁹ Leveraging this theoretical framework, however, has been one of the most significant hurdles for the Obama administration. It has been a constant balance between preserving the U.S. nuclear arsenal’s strategic value and aspirations for a nuclear-weapons-free world.

⁶ 2010 *National Security Strategy*, The White House, May 2010, 17, https://www.whitehouse.gov/sites/default/files/rss_viewer/national_security_strategy.pdf.

⁷ 2015 *National Security Strategy*, The White House, February 2015, 1, https://www.whitehouse.gov/sites/default/files/docs/2015_national_security_strategy.pdf.

⁸ James E. C. Hymans, “Theories of Nuclear Proliferation: The State of the Field,” *The Nonproliferation Review* 13, no. 2 (2006): 457–8, <http://www.tandfonline.com/doi/citedby/10.1080/10736700601071397>.

⁹ Alexander Wendt, “Constructing International Politics,” *International Security* 20, no. 1 (1995): 73, <http://faculty.maxwell.syr.edu/hpschmitz/PSC124/PSC124Readings/WendtConstructivism.pdf>.

D. U.S.-LED NONPROLIFERATION EFFORTS

The U.S. National Nuclear Security Administration, the primary U.S. governmental agent for nuclear security matters, has been one of the key federal entities in the administration's nonproliferation efforts. The Global Material Security (GMS) program—formed in 2016 as part of an organizational restructuring—would capture priorities of work from the Global Threat Reduction Initiative (GTRI), the Nuclear Smuggling Detection and Deterrence (NSDD) program and select priorities from the nonproliferation and international security programs.¹⁰ Formed in 2004, the GTRI has played a significant role supporting the stated objectives of the Four-Year Effort. Its primary focus is to secure or reduce vulnerable nuclear materials globally.¹¹

Coupled with the Four-Year Effort's material security aims the administration would sponsor a biennial Nuclear Security Summit to “set new standards, expand our cooperation with Russia, [and] pursue new partnerships to lock down these sensitive materials.”¹² Primarily a mechanism to promote discourse and raise awareness on nuclear material security among the global audience, the Summits would involve 56 delegations and provide a means for states to elaborate on their own efforts to secure material.¹³

The NSDD program, formerly Second Line of Defense (SLD), is focused on the detection of nuclear material, domestically and abroad. Beginning in 1998 as a mechanism to assist Russia, and by extension the United States, it was aimed at detecting

¹⁰ Greg Terrn and Sarah Tully, “Factsheet: FY2016 Defense Nuclear Non-Proliferation Program Restructuring Explained,” The Center for Arms Control and Non-Proliferation, February 23, 2015, <http://armscontrolcenter.org/factsheet-fy-2016-defense-nuclear-non-proliferation-program-restructuring-explaine/>.

¹¹ U.S. Government Accountability Office, *Nuclear Nonproliferation: DOE Made Progress to Secure Vulnerable Nuclear Materials Worldwide, but Opportunities Exist to Improve Its Efforts*, (GAO-15-799)(Washington, DC: Sep 2015), 8. <http://www.gao.gov/assets/680/672703.pdf>.

¹² Piet de Klerk, “The Success of the 2014 Nuclear Security Summit and its Contribution to the Nonproliferation Regime,” *The Nonproliferation Review* 21, no. 3-4 (2014): 412, <http://www.tandfonline.com/libproxy.nps.edu/doi/pdf/10.1080/10736700.2015.1040232>.

¹³ de Klerk, “The Success of the 2014 Nuclear Security Summit,” 416.

and deterring nuclear smuggling.¹⁴ It has, however, evolved into a far more expansive program that involves domestic border security, such as the Megaports Initiative.¹⁵

Another carry over program established under the Bush administration is the Proliferation Security Initiative (PSI) was established in 2003 in order to counter the trafficking of WMD and related materials.¹⁶ Early in his administration the President endorsed the PSI, suggesting it should become a “durable international institution,” as it is currently more of an “activity” than an organization.¹⁷ Like the PSI, the Global Initiative to Combat Nuclear Terrorism (GICNT) is a voluntary organization composed of 86 states with the goal of, “strengthening global capacity to prevent, detect, and respond to nuclear terrorism.”¹⁸ It has afforded the Obama administration an outlet to address nuclear terrorism at an operational level by supporting events aimed at sharing best practices and increasing awareness on the broader threat of nuclear terrorism.¹⁹

Nuclear cooperation agreements, known as the 123 agreements for their section of origin within the U.S. Atomic Energy Act (AEA) of 1954, codify the nature of U.S. international nuclear technology sales and transfers. Approval of all 123 programs, as outlined in the AEA, requires submittal to the President for review and approval and

¹⁴ L. Cantuti and L. Thomas, “Second Line of Defense Program,” Lawrence Livermore National Laboratory, (Phoenix, AZ: The Institute of Nuclear Materials Management, 1999), <https://e-reports-ext.llnl.gov/pdf/236545.pdf>.

¹⁵ U.S. Government Accountability Office, *Combating Nuclear Smuggling: Megaports Initiative Faces Funding and Sustainability Challenges*, (GAO-13-37) (Washington, DC: U.S. Government Accountability Office, 2012), 4, <http://www.gao.gov/assets/650/649759.pdf>.

¹⁶ U.S. Department of State, *Proliferation Security Initiative*, accessed on April 28, 2016, <http://www.state.gov/t/isn/c10390.htm>.

¹⁷ Jacek Durkalaec, “The Proliferation Security Initiative: Evolution and Future Prospects,” *Non-Proliferation Papers*, no. 16 (June 2012): 1, <http://www.sipri.org/research/disarmament/eu-consortium/publications/nonproliferation-paper-16>.

¹⁸ Global Initiative to Combat Nuclear Terrorism, “Overview,” Accessed 29 April, 2016, <http://www.gicnt.org/>.

¹⁹ Matthew Bunn et al., *Preventing Nuclear Terrorism: Continuous Improvement or Dangerous Decline*, (Cambridge, MA: Project on Managing the Atom, Harvard Kennedy School, 2016), 68, <http://belfercenter.ksg.harvard.edu/files/PreventingNuclearTerrorism-Web.pdf>.

review by Congress.²⁰ The nuances of each agreement offer insight into the administration's efforts at controlling nuclear materials. For example, the new 123 agreement with the UAE included a nonproliferation "gold standard" clause that barred any future enrichment or reprocessing. Vietnam and Jordan, however, rejected such constraints.²¹ Nuclear cooperation agreements offer insight into how far the administration is willing to trust participatory nations with the same nuclear materials it is attempting to secure.

E. INTERNATIONAL NONPROLIFERATION EFFORTS

International nonproliferation efforts administered to by international agencies have been valuable opportunities for the Obama administration's efforts to secure nuclear materials. On the one hand, they offer a multilateral approach that legitimizes U.S. endeavors and helps to avoid, or lessen, accusations of ulterior motivations. On the other hand, they often challenge the administration's ability to pursue diplomatic objectives when confronted with political resistance at home.

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) is the centerpiece of the nonproliferation regime and has near unanimous support from the global community. Emphasizing the NPT's call to disarm in Article VI, President Obama has voiced his support of the treaty as a means of conveying his broader commitment to pursue "a world without nuclear weapons."²² However, tensions exist between U.S. nonproliferation policies and international pressures for the United States to move toward disarmament. Like previous administrations, Obama tried to thread the needle between promoting nonproliferation and maintaining the U.S. nuclear deterrent.

The Administration's inability to gain Senate consent for the Comprehensive Test Ban Treaty (CTBT) is a good example of this tension. Widely viewed internationally as a

²⁰ The Atomic Energy Act of 1954, As Amended, P, P.L. 83-703, 68 Stat. 919, 59, <http://pbadupws.nrc.gov/docs/ML1327/ML13274A489.pdf#page=23>.

²¹ Mary Beth D. Nikitin, Mark Holt, and Mark E. Manyin, *U.S.-Vietnam Nuclear Cooperation Agreement: Issues for Congress* (CRS Report No. R43433) (Washington, DC: Congressional Research Service, 2014), 10, <https://www.fas.org/sgp/crs/nuke/R43433.pdf>.

²² Obama, "Remarks By President Barack Obama in Prague as Delivered."

major symbol of weapon-state progress on disarmament, the CTBT illustrates the administration's inability to sway domestic-U.S. decision makers. As of May 2016 it remains signed but unratified.²³ The CTBT is currently operating 321 monitoring stations globally; consequently, even in the absence of major actors like the United States, it provides the greater international community an awareness of possible nuclear weapons tests.²⁴

Also predating the Obama administration, United Nations Security Council Resolution (UNSCR) 1540 provides a legally binding framework requiring states to “adopt and enforce effective laws prohibiting activities involving the proliferation of WMD and their means of delivery to non-state actors.”²⁵ Like the GICNT, the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT) covers a range of matters regarding nuclear terrorism and legal requirements participatory states must pursue. Opened in 2005 and entering into force in 2007, it provided an opportunity for the UN to address perceived gaps in the international legal framework regarding nuclear terror.²⁶ The Convention on the Physical Protection of Nuclear Material (CPPNM) (with its 2005 amendment) requires states to secure domestic stockpiles of nuclear material in sites or at facilities as well as during transit.²⁷ By championing these treaties, the Obama Administration has hoped to reinforce its broader nonproliferation aims and reinforce its conviction in the eyes of the global audience.

²³ Comprehensive Test Ban Treaty Organization, “Status of Signature and Ratification,” Vienna, Austria, Accessed April 25, 2016, <https://www.ctbto.org/the-treaty/status-of-signature-and-ratification/>.

²⁴ Comprehensive Test Ban Treaty Organization, “Overview of the Verification Regime,” Vienna, Austria, accessed May 17, 2016, <https://www.ctbto.org/verification-regime/background/overview-of-the-verification-regime/>.

²⁵ U.S. Department of State, “UN Security Council Resolution 1540,” Bureau of International Security and Nonproliferation (ISN), accessed April 29, 2016, <http://www.state.gov/t/isn/c18943.htm>.

²⁶ Nuclear Threat Initiative, “International Convention on the Suppression of Acts of Nuclear Terrorism,” (Washington, DC: NTI, 2016), <http://www.nti.org/learn/treaties-and-regimes/international-convention-suppression-acts-nuclear-terrorism/>.

²⁷ Kingston Reif, “Obama Signs Nuclear Security Legislation,” *Arms Control Today* 45, no. 6, (2015): 36, <http://libproxy.nps.edu/login?url=http://search.proquest.com/docview/1697012494?accountid=12702>.

F. LITERATURE REVIEW

In an effort to understand the nonproliferation policies and programs employed during the Obama administration's tenure, this literature review address three broad perspectives on the administration's efforts. Each perspective holds that the President's nonproliferation efforts have had an impact on the threat of nuclear terrorism, but they vary in regard to the degree of success and the reasons for failures or difficulties in implementation. One perspective holds that security conditions have improved as a result of nonproliferation measures but failed appeals to Congress and recent budget cuts may undermine future potential. Another hypothesis is that nonproliferation successes and failures have been tied largely to the administration's ability to leverage international support through effective diplomacy. A third perspective is that some nonproliferation programs have faced challenges during implementation that have undermined their successes: such as, the practicalities of enforcement, unforeseen logistical burdens, or an inability to accurately gauge a program's effectiveness.

1. Domestic Politics and Budgets

Since 2009, the President's nonproliferation policy has successfully advanced the cause of nuclear security; however, authors highlight how the difficulties of maintaining domestic political approval and recent changes in funding suggest an unwillingness to sustain the support necessary for continued success. It is important to note, however, that both the budgeting and program approval is greatly influenced by the interplay between the executive branch and Congress. Critical of the administration's efforts, Nickolas Roth echoes this challenge and emphasizes how disputes within Congress—as to whether crimes captured in the CPPNM should merit the death penalty—have delayed passage of the legislation.²⁸ Emphasizing the impact of the intergovernmental delay, Roth suggests

²⁸ Nickolas Roth, "Congress Gives Thumbs Up to International Nuclear Security Conventions," Belfer Center for Science and International Affairs, June 3, 2015, <http://nuclearsecuritymatters.belfercenter.org/blog/congress-gives-thumbs-international-nuclear-terrorism-conventions>.

that in the context of the administration’s broader nonproliferation message the failure to ratify the CPPNM was an “embarrassment” to the United States.²⁹

In a Congressional Research Service (CRS) report, *U.S.–Vietnam Nuclear Cooperation Agreement: Issues for Congress*, Mary Beth Nikitin, Mark Holt, and Mark Manyin’s provide a study on the challenges of implementing a 123 agreement, and how, in spite of addressing practices with foreign partners, it remains powerfully influenced by domestic politics.³⁰ Successful creation and implementation of a 123 agreement offers a valuable waypoint for success as it reflects an ability to balance domestic security concerns with economic interests. In another CRS report, Mary Beth Nikitin and Amy Woolf highlighted this challenge again as the administration attempted to pursue a renewal of the CTR. Differences within the House and Senate over continued CTR funding—albeit reduced and under a more limited agreement—faced stiff resistance in light of Russia’s aggression in the Ukraine.³¹ Rachael Oswald captures this impact in a quote from Senator John McCain; assessing the future of U.S.–Russian cooperation, the Arizona Republican suggests, “When they’re not cooperating, why should we waste the money on something we can’t get done?” This sentiment manifested in a FY16 defense spending bill provision that would ban funds for U.S.-Russian nonproliferation work.³² Although President Obama vetoed the bill its existence captured the discord between legislators’ perceptions of ongoing CTR work and the administration’s greater nonproliferation objectives.³³ Similarly critical, Amanda Moodie and Michael Moodie highlight that—in spite of the Obama administration’s efforts over the last eight years—

²⁹ Roth, “Congress Gives Thumbs Up to International Nuclear Security Conventions.”

³⁰ Nikitin, Holt, and Manyin, *U.S.-Vietnam Nuclear Cooperation Agreement*, 12.

³¹ Mary Beth D. Nikitin and Amy F. Woolf, *The Evolution of Cooperative Threat Reduction: Issues for Congress* (CRS Report No. R43143) (Washington, DC: Congressional Research Service, 2014), 8, <https://www.fas.org/sgp/crs/nuke/R43143.pdf>.

³² Rachel Oswald, “Chill With Russia Brings Nuclear Insecurity,” Pulitzer Center on Crisis Reporting, (November 20, 2015). <http://pulitzercenter.org/reporting/chill-russia-brings-nuclear-insecurity>

³³ *Ibid.*

weapons and technology have continued to proliferate and known instances of noncompliance have been addressed ineffectively, if at all.³⁴

Concerning funding, some authors consider poor fiscal management and the absence of long-term budgeting to have undermined programmatic efficiency. Critical of ongoing spending trends, a GAO report argues that—in the case of the Megaports Initiative—the failure to formulate long-term sustainability plans has undermined the initiative’s long-term viability.³⁵ Amy Woolf and Mary Beth Nikitin, in *The Evolution of Cooperative Threat Reduction*, argue that funding patterns can be related to a program having completed its objectives—and funding is understandably reduced or halted.³⁶ Conversely, some programs may have failed to settle the international agreements necessary for work to move forward, and funding reductions are based off of perceptions of programmatic failure.³⁷ Woolf and Nikitin do, however, note that evolving U.S. perceptions of the nuclear terror threat have also been an important determinant of funding levels and have impacted the willingness to support certain programs.³⁸

Advocates of strengthened nonproliferation measures, Matthew Bunn, Nickolas Roth, and William H. Toby argue that many of the administration’s nonproliferation successes have been tied to funding that appears to be tapering off, and therefore some programs and policies may not enjoy similar gains amidst fiscal limitations.³⁹ Based on annual budgets reflecting a decrease in gross funding for nonproliferation measures, there

³⁴ Amanda Moodie and Michael Moodie, “Alternative Narratives for Arms Control: Bringing Together Old and New,” *The Nonproliferation Review* 17, no. 2 (2010): 302, <http://www.tandfonline.com/doi/full/10.1080/10736700.2010.485430>.

³⁵ U.S. Government Accountability Office, *Combating Nuclear Smuggling: Megaports Initiative*, 28.

³⁶ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 15.

³⁷ *Ibid.*, 15.

³⁸ *Ibid.*, 5.

³⁹ Matthew Bunn, Nickolas Roth, and William H. Tobey, *Cutting Too Deep: The Obama Administration’s Proposal for Nuclear Security Spending Reductions*, (Cambridge, MA: Belfer Center for Science and International Affairs, Harvard Kennedy School, 2014), 5, http://belfercenter.ksg.harvard.edu/publication/24409/cutting_too_deep.html.

is a growing sense that future nonproliferation efforts may be at risk.⁴⁰ Equally concerned with funding decreases, Bunn et al., in *Preventing Nuclear Terrorism: Continuous Improvement or Dangerous Decline*, suggest that the ending of the “era of the nuclear summit” should not result in a decreased willingness to protect the United States against nuclear terrorism.⁴¹ Achieving congressional support has been a challenge for the administration, both as a means of promoting a broader nonproliferation culture and securing the funding necessary to maintain a breadth of programs and policies.

2. International Factors

According to certain authors, the administration’s successes have often been tied to concerted efforts of diplomacy; conversely, they argue, shortfalls and programmatic gaps have been the result of a failure to reach consensus on the purpose and value of CTR type programs. Good diplomacy is necessary to develop and maintain an effective nonproliferation regime with audiences abroad. Achieving both political and economic buy-in requires compromises that some decision makers may be unwilling to make.⁴² The right political influence can help to overcome these reservations, and is frequently the key to incentivize actions—be it negative or positive incentives—that is necessary to facilitate change.

A similar exercise in diplomacy, the CTR program was the product of U.S. concern over nuclear security following the collapse of the Soviet Union and required extensive dialogue with the leadership of the Russian Federation.⁴³ Critical of U.S. nonproliferation efforts, Sharon Weiner argues that the trust necessary to effectively execute the CTR program was undermined from the beginning because “the United States appeared to treat Russia as a defeated adversary of whom advantage could be

⁴⁰ Bunn, Roth, and Tobey, *Cutting Too Deep*, 18.

⁴¹ Matthew Bunn et al., *Preventing Nuclear Terrorism*. 3.

⁴² Matthew Bunn, et al., *Steps to Prevent Nuclear Terrorism: Recommendations Based on the U.S.-Russia Joint Threat Assessment* (Cambridge, MA: Belfer Center for Science and International Affairs, September 2013), 6, <http://belfercenter.ksg.harvard.edu/files/JTA%20eng%20web2.pdf>.

⁴³ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 1.

taken.”⁴⁴ The result was an institutionalized reluctance—on both sides—to develop strong relationships between participants at higher levels of government in order to facilitate program objectives.⁴⁵

Mary Beth D. Nikitin and Amy F. Woolf propose that in spite of years of successful threat reduction activities, Russia’s unwillingness to renew the CTR agreement was primarily the result of its increased ability to handle security matters without U.S. assistance.⁴⁶ With Russia possessing one of the world’s largest stockpiles of weapons-grade fissile material, events like those in the Ukraine undermine trust and hinder CTR efforts. The CTR program has, however, expanded beyond its initial scope and focus on Russia to include the Middle East and North Africa.⁴⁷ A supporter of ongoing CTR efforts, Author Mary Kaszynski advocates this expanding mission-set by demonstrating the program’s historic value; she also addresses problems that result from the program’s aging legal framework but suggests that with proper leadership the program can continue to be effective.⁴⁸

As with the CTR experience, Nikitin illustrates in a CRS report how the PSI’s successes have been tied to an ability to facilitate the exchange of information among states by securing “formal or informal cooperation by Western Hemisphere countries.”⁴⁹ Also like CTR, the program faces challenges, such as how to integrate nonparticipating nations, like China, and how cooling U.S.–Russian relations may influence program

⁴⁴ Sharon K. Weiner, *Our Own Worst Enemy? Institutional Interests and the Proliferation of Nuclear Weapons Expertise* (Cambridge, MA: MIT Press, 2011), 300.

⁴⁵ *Ibid.*, 301.

⁴⁶ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 7.

⁴⁷ *Ibid.*, 16.

⁴⁸ Mary Kaszynski, “The Nunn-Lugar Cooperative Threat Reduction Program: Securing and Safeguarding Weapons of Mass Destruction,” American Security Project, (Washington, DC: 2012), <http://www.americansecurityproject.org/ASP%20Reports/Ref%200068%20-%20The%20Nunn-Lugar%20Cooperative%20Threat%20Reduction%20Program.pdf>.

⁴⁹ Mary Beth Nikitin, *Proliferation Security Initiative (PSI)* (CRS Report No. RL34227)(Washington, DC: Congressional Research Service, 2012), 10, <https://www.fas.org/sgp/crs/nuke/RL34327.pdf>.

effectiveness.⁵⁰ Although a proponent of the administration’s overall efforts—particularly the use of the PSI as a dynamic mechanism to address the proliferation problem—William Wohlforth critiques the administration’s ability to meet his broader zero-nuke agenda suggesting any impact to “hegemonic prerogatives” would be unacceptable to the U.S. government as a whole.⁵¹

Proponents of threat reduction programs Matthew Bunn, Valentin Kuznetsov, Martin B. Malin, Yuri Morozov, Simon Saradzhyan, William H. Tobey, Viktor I. Yesin, and Pavel S. Zolotarev emphasize Russia’s willingness—as captured in its National Security Strategy—to cooperate in some nonproliferation matters.⁵² This assessment was, however, conducted prior to Russian military intervention in Ukraine and may therefore be a less relevant indicator for diplomatic opportunities today. Amy Woolf expands on the diplomatic challenges U.S. and Russia face by highlighting a Department of State report confirming Russian violations of the Intermediate Range Nuclear Forces (INF) Treaty.⁵³

Opponents of the administration’s methods, Kim R. Holmes and James Jay Carafano, raise concerns over the administration’s exchanges with the UN and how ultimately they often lack substantive results or “hard policy.”⁵⁴ Their critique proposes a valuable question—one that will be an important metric in Chapter IV of this work—have the administration’s diplomatic efforts yielded any practical changes?

⁵⁰ Nikitin, *Proliferation Security Initiative*, 8.

⁵¹ William C. Wohlforth, “US Leadership and the Limits of International Institutional Change,” *International Journal* 67, no. 2 (April 2012): 421, <http://libproxy.nps.edu/login?url=http://search.proquest.com.libproxy.nps.edu/docview/1267028996?accountid=12702>.

⁵² Bunn, et al., *Steps to Prevent Nuclear Terrorism*, 15.

⁵³ Amy F. Woolf, *The New START Treaty: Central Limits and Key Provisions* (CRS Report No. R41219) (Washington, DC: Congressional Research Service, 2016), 6, <https://www.fas.org/sgp/crs/nuke/R41219.pdf>. Woolf.

⁵⁴ Kim R. Holmes and James Jay Carafano, “Defining the Obama Doctrine, Its Pitfalls, and How to Avoid Them,” The Heritage Foundation, September 1, 2010, <http://www.heritage.org/research/reports/2010/08/defining-the-obama-doctrine-its-pitfalls-and-how-to-avoid-them>.

3. Implementation

A third perspective within the literature argues that during the implementation of some nonproliferation efforts there have been unforeseen difficulties that undermine overall success. Difficulties may include the unanticipated logistical burdens, an inability to accurately gauge a program's effectiveness, or the unwillingness of a state to enforce nonproliferation measures domestically—i.e., a state's failure to act on UNSCR 1540 provisions. For example, Bunn, Roth, and Tobey highlight how U.S. efforts to secure hundreds of kilograms of Japanese nuclear material may incur an escalating cost-burden not fully accounted for in the program's initial funding allotment.⁵⁵ While challenges like this may not undermine the fundamental security gains achieved by consolidating materials, they suggest the role played by anticipated unexpected crises and problems.

A Government Accountability Office (GAO) report, *Nuclear Nonproliferation: DOE Made Progress to Secure Vulnerable Nuclear Materials Worldwide, but Opportunities Exist to Improve Its Efforts*, critical of the Department of Energy's methods, argues that the agency has failed to collect accurate data on the quantity and disposition of certain nuclear material stockpiles, thus undermining material security efforts.⁵⁶ In another GAO report, David Trimble suggests the lack of follow-up inspections for sensitive material sites abroad—in order to determine if materials are being stored according to international guidelines—has resulted in a failure to capture potential security threats.⁵⁷ Following through after a program has begun has been a frequent challenge to the effectiveness of U.S. efforts; it has presented a significant and reoccurring challenge to meeting the administration's objectives. Faced with securing materials globally, U.S. federal agencies have had to contend with the difficulties of moving or securing materials while adhering to regional political, economic, and security related challenges.

⁵⁵ Bunn, Roth, and Tobey, *Cutting Too Deep*, 18.

⁵⁶ U.S. Government Accountability Office, *Nuclear Nonproliferation: DOE Made Progress to Secure Vulnerable Nuclear Materials Worldwide*, 20.

⁵⁷ David C. Trimble, *National Nuclear Security Administration: Observations on Management Challenges and Steps Taken to Address Them*, (GAO-15-532T)(Washington, DC: U.S. Government Accountability Office, 2015), 12, <http://www.gao.gov/assets/670/669668.pdf>.

In *Peddling Peril*, David Albright examines Abdul Qadeer (A.Q.) Khan's efforts to proliferate nuclear technology and how, due to poorly conceived or enforced export controls, he was often able to do so legally.⁵⁸ Albright argues that implementation gaps in existing nonproliferation measures remain, most critically in enforcement, and as a result nuclear terrorism remains a serious threat.⁵⁹ He extends this concern to UNSCR 1540 and how the United States has approached the lack of strong enforcement provisions; however, he is more critical of some foreign states and their unwillingness to follow through with agreed upon nonproliferation measures.⁶⁰

Kaegan McGrath and Vasileios Savvidis offer a similar critique of UNSCR 1887 in "UNSC Resolution 1887: Packaging Nonproliferation and Disarmament at the United Nations." They argue that UNSCR 1887 provides a mechanism to reaffirm commitments, but lacks any legal framework that could promote states to take more substantive measures.⁶¹

Assessing success may, itself, become a problem during the implementation process of any nonproliferation program. Sharon Wiener argues that some programs have used metrics—developed at their inception or identified as the program evolved—that may not have necessarily displayed a strong causal relationship.⁶² Her critique covers the implementation of programs beginning around 1991; however, with some critiques still an issue as of 2008 they have been subsequently inherited by the Obama administration.⁶³ A GAO report, *Combating Nuclear Smuggling*, has a similar critique of the Megaport Initiative's ongoing efforts and how, in spite of the program being well underway, current measures of success are based on the amount of work being

⁵⁸ David Albright, *Peddling Peril: How the Secret Nuclear Trade Arms America's Enemies*, (New York: Free Press, 2010), 248.

⁵⁹ *Ibid.*, 245.

⁶⁰ *Ibid.*, 248.

⁶¹ Kaegan McGrath and Vasileios Savvidis, "UNSC Resolution 1887: Packaging Nonproliferation and Disarmament at the United Nations," Nuclear Threat Initiative, February 1, 2009, <http://www.nti.org/analysis/articles/unsc-resolution-1887/>.

⁶² Wiener, *Our Own Worst Enemy*, 214.

⁶³ *Ibid.*, 302.

conducted—dollars spent, laborers employed, and technology sold—rather than the work’s actual impact on reducing nuclear smuggling.⁶⁴ The administration’s ability to manage these programs, or more accurately how they direct the managers, offers insight into their broader nonproliferation aims.

G. POTENTIAL EXPLANATIONS AND HYPOTHESES

The initial hypothesis of this work is that the administration began and sustained a strong nonproliferation effort; however, emerging problems—challenges cooperating with actors abroad and the difficulties of effective implementation—have negatively affected some current and future nonproliferation efforts.

The administration’s Nuclear Security Summit Series provided an opportunity for the President to promote multilateral action and reinforce his own nonproliferation objectives. Through the effective use of diplomacy, the President brought about a renewed focus on nonproliferation; subsequently, there has been an increased willingness by international players to entertain compromise—be it the release of materials, increased funding, or the ratification of existing nonproliferation measures—in the realm of nuclear security.⁶⁵ Increased funding to threat reduction programs from the start of the administration until very recently, have provided a tangible backdrop to the administration’s overarching nonproliferation focus. Reducing the threat of nuclear terrorism through enhanced nuclear security—by consolidating materials domestically or securing them abroad—was embraced by many as a reasonable means of approaching the threat.

Shortfalls have, however, presented challenges to the President’s overall efforts. The administration’s effort to achieve compromise has been challenging; moreover, as international actors pursue their own interests the administration must attempt to balance relations—with allies and adversaries—with its broader nonproliferation agenda. For example, India and Pakistan continue to pursue security by way of nuclear deterrence and

⁶⁴ U.S. Government Accountability Office, *Combating Nuclear Smuggling: Megaports Initiative*, 30.

⁶⁵ Nuclear Security Summit, “2016 Progress Reports,” accessed October 17, 2016, <http://www.nss2016.org/2016-progress-reports/>.

are unlikely to cease their efforts in spite of the President's broader call for arms reductions.⁶⁶ The administration has called for restraint but—in light of their reluctance to compromise—must weigh national security interests in light of their growing stockpiles of weapons usable materials. Similarly, U.S. tension with China and Russia has undermined cooperative efforts on nuclear safety and security matters.

H. RESEARCH DESIGN

The central design of this thesis will be a review of select nonproliferation policies during the Obama administration's tenure. Similar to the Arms Control Association's 2013 *Assessing Progress on Nuclear Nonproliferation and Disarmament*, this thesis looks to use a report-card format in an effort to assess the administration's nonproliferation efforts.⁶⁷ The report card will cover efforts and results from January 2009 through April 2016 and will provide an assessment on their effectiveness in reducing the threat of nuclear terrorism. The rationale behind the report-card format is to provide a consolidated view of the administration's nonproliferation programs and highlight the net effect of these efforts. The report card will offer an A-through-F grading scheme providing a narrative explanation of the grades supported by in-chapter evidence.

Key areas for consideration that will be applied broadly to each program and policy are: has the administration adequately fostered support within the United States to promote the President's greater nonproliferation agenda; has the administration achieved a shift in behavior and practice by foreign states as a result of effective international diplomacy; have programs and policies been implemented and managed effectively—promoting and achieving goal oriented strategies while emphasizing efficient spending.

⁶⁶ Theodore Kalionzes and Kaegan McGrath, "Obama's Nuclear Nonproliferation and Disarmament Agenda: Building Steam or Losing Traction," Nuclear Threat Initiative, January 2010, <http://www.nti.org/analysis/articles/obamas-nuclear-agenda/>.

⁶⁷ Kelsey Davenport and Marcus Taylor, *Assessing Progress on Nuclear Nonproliferation and Disarmament* (Washington, DC: Arms Control Association, April 2013) https://www.armscontrol.org/files/ACA_2013_Nuclear_Report_Card.pdf.

I. THESIS OVERVIEW AND CHAPTER OUTLINE

The thesis is arranged into five chapters. Following this introduction, the second chapter addresses U.S. nonproliferation programs and policies. The third chapter addresses U.S.-backed international nonproliferation programs. The fourth chapter presents an analysis and a consolidated score card on the Obama administration's efforts. The fifth and final chapter offers a conclusion and path forward based on the data presented.

II. U.S.-LED NONPROLIFERATION EFFORTS UNDER THE OBAMA ADMINISTRATION

In an effort to combat nuclear terrorism the Obama administration has leveraged a number of programs and policies. This chapter explores how the Obama administration leveraged U.S.-led nonproliferation efforts and what was their impact on nuclear terrorism. Select programs and policies will be observed with specific consideration given to the following themes: how effectively the programs and policies were implemented; if the administration was capable of rallying domestic support for nonproliferation measures; if the administration achieved consensus from the international community.

In pursuit of the more focused aim of combating nuclear terrorism the administration sought to tie together existing material control, arms control, and disarmament efforts. Some programs had a long history of controlling materials and weapons in an effort to deny them to rouge states or nuclear-terrorists. Other programs, however, include arms control or commercial nuclear activities, but offered the administration an opportunity to incorporate its broader message of the threat of nuclear terrorism into the wider nonproliferation regime. Of those efforts this chapter will examine the following: the Global Threat Reduction Initiative, Second Line of Defense, Global Initiative to Combat Nuclear Terrorism, Cooperative Threat Reduction Program, and the Nuclear Security Summits. President Obama's pursuit of a strengthened nonproliferation regime began early in his presidency. During his speech in the Czech Republic he would establish ambitious goals aimed at enhancing global nuclear security.

A. THE FOUR-YEAR EFFORT

On April 5, 2009, President Obama spoke to the Czech people in Prague about nuclear security. Alongside his aspirations of a nuclear-weapon free world, he highlighted the threat of nuclear terrorism and how he intended to mitigate that threat by securing "all vulnerable nuclear material around the world within four years."⁶⁸ The

⁶⁸ Obama, "Remarks by President Barack Obama in Prague as Delivered."

“Four-Year Effort” would evolve from the President’s speech. The effort itself would never coalesce into a formal department or office of any shape, but would become a rallying call to enhance existing measures aimed at combating nuclear terrorism. The Global Threat Reduction Initiative and the Nunn-Lugar Cooperative Threat Reduction were reinvigorated by the resulting publicity and increased funding. Efforts like the Second line of Defense and the Global Initiative to Combat Nuclear Terrorism also received increased support.

From the beginning, the administration avoided a detailed list of exactly what was expected to occur within the four years. The administration did not establish any specific objectives and generally allowed federal agencies to establish their own subordinate objectives.⁶⁹ The programs discussed include: the Global Threat Reduction Initiative (GTRI); the Second Line of Defense (SLD) Program; the Global Initiative to Combat Nuclear Terrorism (GICNT); the Nunn-Lugar Cooperative Threat Reduction Program (CTR); the Nuclear Security Summits (NSS). As the Four-Year Effort came to a close, however, it would become apparent that the President’s goal would need more time.⁷⁰

Critics have argued that the plan was not ambitious enough, did not firmly establish goals, or failed to look inward. A break-in at the Y-12 Nuclear Security Complex in 2012 by three nuclear protestors undermined U.S. progress at a time when the administration was promoting global nuclear security.⁷¹ Nuclear material security was the cornerstone of the Four-Year Effort. Key in meeting the President’s goals and securing nuclear material, the Global Threat Reduction Initiative, would be a critical component of the Four-Year Effort.

⁶⁹ Department of Energy, *Department of Energy FY2012 Congressional Budget Request: National Nuclear Security Administration, Vol 1* (Washington, DC: National Nuclear Security Administration, 2012), 360, <http://energy.gov/sites/prod/files/FY12Volume1.pdf>.

⁷⁰ Aiden Warren, *The Obama Administration’s Nuclear Weapon Strategy: The Promises of Prague* (New York: Routledge, 2014), 106.

⁷¹ Lisbeth Gronlund & Eryn MacDonald, “America, Awash in Nuclear Weapons Materials,” *Bulletin of the Atomic Scientists* 70, no. 2 (2015): 54, <http://dx.doi.org/10.1177/0096340214523250>.

B. GLOBAL THREAT REDUCTION INITIATIVE (GTRI)

The Global Threat Reduction Initiative has played an important supporting role in securing vulnerable nuclear material around the world. Created in 2004 by the NNSA, the GTRI's mission has focused on “converting research reactors and isotope production facilities from using highly enriched uranium (HEU) to the use of low enriched uranium (LEU); removing or confirming the disposition of excess nuclear and radiological materials; and protecting high priority nuclear and radiological materials from theft.”⁷² Each of GTRI's three pillars (remove, protect, convert) has supported the President's broader efforts to reduce the threat of nuclear terrorism.⁷³

Since 2004, GTRI has taken important steps toward securing materials and preventing access by would-be nuclear terrorists. The initiative has offered both the Bush and Obama administrations an “action agent” that can enhance nuclear security domestically and abroad. The 2005 Bratislava Agreement, between U.S. President Bush and Russian President Putin, launched a working group aimed at developing and eventually providing security assistance to Russian nuclear energy facilities and storage sites.⁷⁴ The agreement offered a political framework in which members of the senior leadership—the U.S. Secretary of Energy and the Director of Russia's federal energy apparatus, Rosatom, respectively—could direct GTRI activities.⁷⁵ In time, GTRI would expand beyond its initial focus on securing Russian materials. During the second Bush administration, GTRI would remove at-risk materials from five countries.⁷⁶ Other activities would include promoting the production of medical isotopes using methods that did not require HEU and the recovery of roughly 750 radioisotope thermoelectric

⁷² National Nuclear Security Administration, “GTRI: Reducing Nuclear Threats,” accessed April 29, 2016, <https://nnsa.energy.gov/mediaroom/factsheets/reducingthreats>.

⁷³ *Ibid.*

⁷⁴ Richard Weitz, *Russian-American Security Cooperation after St. Petersburg: Challenges and Opportunities* (Carlisle, PA: Strategic Studies Institute, April 2007), 20, <http://www.strategicstudiesinstitute.army.mil/pdffiles/pub775.pdf>.

⁷⁵ *Ibid.*, 27.

⁷⁶ National Nuclear Security Administration, “GTRI: Reducing Nuclear Threats.”

generators (RTGs) globally.⁷⁷ As an established federal nuclear material security program, GTRI would play an important role in the Obama administration’s material security goals.

1. Implementation

Removing or securing nuclear materials abroad has been the cornerstone of the administration’s nonproliferation efforts since taking office in 2009. The GTRI became a critical action agent of the President’s stated goals. In support of the Four-Year Effort, the program has done the following: secured or removed almost 3,000 kg of HEU and plutonium globally; secured 10,000 kg of HEU and 3,000 kg of plutonium from Kazakhstan’s BN-350 reactor—a project that had begun prior to GTRI’s inception but was completed by GTRI in 2010; and completely removed the HEU and/or plutonium stockpiles from 11 countries.⁷⁸ Manufacturing a weapon takes only a few kilograms of plutonium or roughly 30 kg of HEU.⁷⁹ The roughly 16,000 kg of material—the bulk of which was secured within the U.S. or repatriated to Russia—equates to hundreds of potential nuclear explosive devices. Efforts have continued since 2013, the DOE has removed an additional 134 kg of HEU and plutonium in 2014 and have scheduled the removal of an additional 1,029 kg from sites by 2019.⁸⁰ In addition to securing material and transporting it to domestic storage sites, if there is significant confidence in an origin state’s capabilities, GTRI may opt to secure the material abroad. Where possible, GTRI representatives pursue security by identifying sites in the material’s country of origin or reprocessing the material into “a form that is not susceptible to use in a WMD.”⁸¹ Converting power facilities and moving industry away from weapons grade materials is

⁷⁷ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 32.

⁷⁸ National Nuclear Security Administration, “The Four-Year Effort,” December 2013, <http://nnsa.energy.gov/sites/default/files/nnsa/12-13-inlinefiles/2013-12-12%204%20Year%20Effort.pdf>.

⁷⁹ Albright, *Peddling Peril*, 124.

⁸⁰ U.S. Government Accountability Office, *Nuclear Nonproliferation: DOE Made Progress to Secure Vulnerable Nuclear Materials Worldwide*, 18.

⁸¹ Department of Energy, *Environmental Assessment for Gap Material Plutonium –Transport, Receipt, and Processing*, DOE/EA-2024, (Washington, DC: National Nuclear Security Administration, 2015), 2, <http://www.srs.gov/general/pubs/envbul/documents/EA-2024-FEA-2015.pdf>.

also a function of GTRI. Converting reactors from HEU to low-enriched uranium (LEU) has been a viable and generally accepted alternative to decommissioning power facilities. During the Four-Year Effort, GTRI converted 23 foreign reactors from HEU to LEU.⁸² In many cases, the nuclear material of concern is of Russian or U.S. origin—the product of earlier commercial sales. In the case of U.S. material, the repatriation process is facilitated by preexisting agreements, often the same agreement that guided the initial transaction—called “123” agreements, they will be addressed later in this work. GTRI has also provided the administration a means of removing materials from countries not included in existing threat reduction programs— often referred to as “gap material.”⁸³ Identifying and securing gap material has been an important component of the administration’s Four-Year Effort. Generally found in smaller amounts, the parent nation may not possess the monetary or technical resources to adequately secure the material.

The Obama administration’s strong position on nuclear security—coupled with a steady climb in funding early on (see Figure 1)—empowered the GTRI to be an effective instrument of change. However, two concerns over the program’s future potential have arisen. First, since the end of the Four-Year Effort, a steady decrease in funding suggested an unwillingness to sustain material security efforts. Second, managerial shortfalls may have detracted from the initiative’s full potential and left materials unsecured.

In order to continue securing materials as effectively as the Four-Year Effort, the administration must ensure adequate funds are available. Within the administration, some counter-argue that declining nonproliferation budgets are a reflection of programmatic successes and initiatives winding down.⁸⁴ Critics, however, highlight a pattern of dwindling nonproliferation funding as inconsistent with the administration’s outward concern over nuclear terrorism and contradictory in the face of an increasing nuclear weapons budget—Figure 1 illustrates GTRI funding trends up to the FY2017 proposed

⁸² U.S. Government Accountability Office, *Nuclear Nonproliferation: DOE Made Progress to Secure Vulnerable Nuclear Materials Worldwide*, 44.

⁸³ David Cortright and Raimo Vayrynen, *Towards Nuclear Zero* (New York: Routledge, 2010), 138.

⁸⁴ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 15.

budget.⁸⁵ Budget reductions become especially worrisome when considering the increasing expense of recovering and securing nuclear materials. From its inception to 2013, GTRI efforts have removed roughly 5,060 kg of weapons grade material from foreign sites—excluding the BN-350 reactor in Kazakhstan which, although finishing in 2010, began before GTRI itself existed.⁸⁶ For comparison, the Four-Year Effort removed or secured roughly 3,000 kg of nuclear materials—leaving 2,060 kg removed or secured in preceding four years. Based off DOE budgeting allotment, the resulting cost was approximately \$0.25 million USD per kilogram of material secured in the four years preceding the Obama administration, and roughly \$0.56 million USD per kilogram of material secured during the administration’s first four years—during the Four-Year Effort. Earlier efforts may have capitalized on the low-hanging fruit (i.e., efforts like the 2005 Czech material recovery or the broader Reduce Enrichment for Research and Test Reactor (RERTR) program that worked closely with Russian-origin materials).⁸⁷ Many of the Four-Year Effort’s recovery missions include relatively small amounts of nuclear material—often not enough to make a single weapon. Therefore, a realistic planning consideration should be the increasing cost of recovery, and if similar recovery efforts are to be continued, a corresponding increase in funding. Although the program’s successes have eliminated the amount of unsecured material, the expansion of nuclear energy around the world will undoubtedly be accompanied by an increasing demand for nuclear materials. The need to promote effective global nuclear security practices is important to avoid continued material security initiatives and the further allocation of U.S. resources.

⁸⁵ Bunn, Roth, and Tobey, *Cutting Too Deep*, ix.

⁸⁶ National Nuclear Security Administration, “The Four-Year Effort,” 4.

⁸⁷ Nuclear Threat Initiative, “Past and Current Civilian HEU Reduction Efforts,” April 26, 2016, <http://www.nti.org/analysis/articles/past-and-current-civilian-heu-reduction-efforts/>.

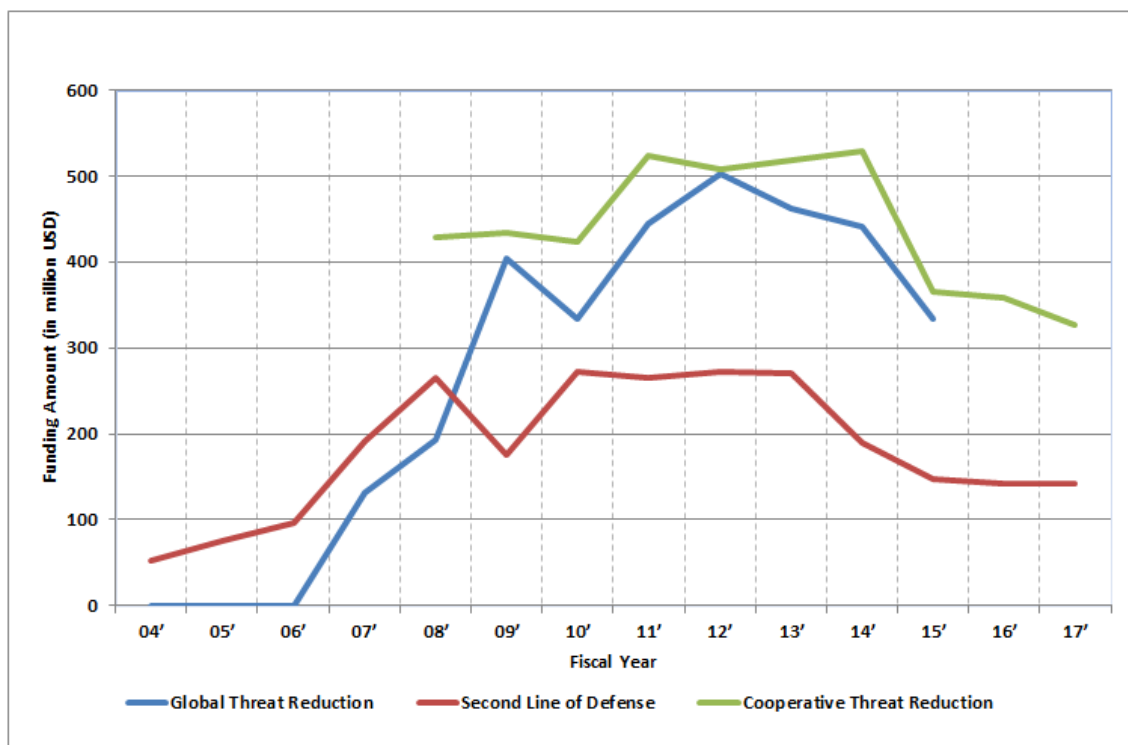


Figure 1. Nonproliferation Program Funding Trends⁸⁸

GTRI efforts have recovered a substantial amount of material without incident; however, the program’s overall success has been hindered by managerial shortfalls. There remains an estimated one million kilograms of HEU and plutonium existing outside the United States. Much of this material, roughly 737,000 kg,⁸⁹ resides in Russia and is considered secure, but nuclear security experts warn that Russia’s economic downturn and an increasingly destabilized region are likely to have a negative impact on Russian nuclear security.⁹⁰ Securing materials is an important measure aimed at reducing terrorist access; however, it is as important that the “right” materials are secured. Critics of ongoing GTRI efforts argue that the DOE has not completed an inventory of U.S.-origin material in overseas sites nor have they visited some sites in over 20 years to

⁸⁸ Adapted from Department of Energy *Congressional Budget Request: National Nuclear Security Administration, Vol 1. Fiscal Year 2004–17*, <http://energy.gov/budget-performance>.

⁸⁹ U.S. Government Accountability Office, *Nuclear Nonproliferation: DOE Made Progress to Secure Vulnerable Nuclear Materials Worldwide*, 1.

⁹⁰ Matthew Bunn et al., *Preventing Nuclear Terrorism*, iv.

confirm U.S. origin material is being secured appropriately—ultimately less than one-tenth of all the U.S. origin material could be located.⁹¹ When asked by the GAO, an employee within the Office of Nonproliferation was unable to determine who was eligible for GTRI fuel-return assistance because no list of U.S. overseas inventory existed.⁹² A failure to fully account for U.S.-origin material bodes poorly for GTRI’s ability to account for Russian-origin material—or any other provider. Even material that is accounted for remains a concern, as the process of securing nuclear materials may take considerable time.

2. Domestic Support

The administration has achieved domestic support for its nonproliferation goals, but maintaining domestic support has been challenging. In an effort to acquire the funds needed to support his nonproliferation efforts, President Obama has had to appeal to congressional leaders for funding and in some cases argue in favor of planned defunding. Some figures in congress have objected to cuts; Senator Dianne Feinstein (D-CA) argued that cuts have impaired programs that have “made this country safer from nuclear terrorism.”⁹³ Much of this stems from a 2013 Bipartisan Budget Act which limited the NNSA’s ability to draw additional funding—the end result would establish a necessity to shuffle funds among the NNSA’s three primary departments: nuclear weapons, naval reactors, and nonproliferation.⁹⁴ Faced with a demand by Congress to decrease the NNSA budget, the DOE has opted to make the most significant cuts in nonproliferation programs, thereby impacting future nuclear security efforts directly.

Decisions to defund some programs have regularly raised the ire of congressional leadership—particularly when their constituents are involved. The administration has proposed significant cuts to the Savannah River plutonium mixed oxide (MOX) recycling

⁹¹ U.S. Government Accountability Office, *Nuclear Nonproliferation: U.S. Agencies Have Limited Ability to Account for, Monitor and Evaluate the Security of U.S. Nuclear Material Overseas* (GAO-11-920) (Washington, DC: 2011), 40, <http://www.gao.gov/assets/330/323043.pdf>.

⁹² *Ibid.*, 11.

⁹³ Bunn, Roth, and Tobey, *Cutting Too Deep*, 10.

⁹⁴ *Ibid.*

plant in the FY2017 federal budget.⁹⁵ Ongoing delays and the potential halting of funding would leave the future conversion efforts of 34 tons of plutonium in question—efforts based on the Plutonium Management and Disposition Agreement and its 2006 and 2010 protocols.⁹⁶ A 2016 delay in converting plutonium into nuclear fuel at the Savannah River Site in South Carolina has resulted in a \$100 million fine brought about by the state. Complicated by the arrival of 331 kg of plutonium from Japan, some within the U.S. nuclear enterprise feel efforts to secure materials from abroad is turning sites like Savannah River into an international “dumping ground.”⁹⁷ In the absence of viable disposition plans the material may very well sit in storage until alternatives can be funded. Therefore, converting or diluting stockpiles of nuclear material is an important step and a necessary mechanism to deny weapons grade material to terrorists.

3. International Support

President Obama has skillfully promoted GTRI’s efforts to secure and recover nuclear materials within the international community. GTRI has extended its activities—removal, protection, and conversion—into dozens of countries. GTRI practitioners have, to their credit, frequently overcome security concerns intrinsic to nuclear technology alongside other cultural and political hurdles to achieve their objectives. GTRI has assisted in the repatriation of Russian-origin nuclear material, often in tandem with efforts to convert HEU reactors to LEU.⁹⁸ The program’s efforts have also greatly supported the Nuclear Security Summits’ calls for global action. President Obama’s vocal concern over nuclear terrorism—specifically the dangers of vulnerable nuclear

⁹⁵ Steven Mufson, “Obama Plan to De-Fund Savannah River Plutonium Conversion Plant Draws Fire,” *The Washington Post*, February 25, 2016, https://www.washingtonpost.com/business/economy/obama-plan-to-de-fund-savannah-river-plutonium-conversion-plant-draws-fire/2016/02/25/71428a72-db6e-11e5-925f-1d10062cc82d_story.html.

⁹⁶ *Ibid.*

⁹⁷ Paul Brown, “Armed Ships Embark on Secretive Plutonium Mission,” *Climate Home*, January 22, 2016, <http://www.climatechangenews.com/2016/01/22/armed-ships-embark-on-secretive-plutonium-mission/>.

⁹⁸ National Nuclear Security Administration, “United States: NNSA Helps Poland Convert Reactor, Remove Highly Enriched Uranium.” *MENA Report*, Sep 26, 2012, <https://nnsa.energy.gov/mediaroom/pressreleases/mariareactor092512>.

materials—found an established-face in the GTRI known to many actors in the international community. Having completely rid 11 countries of fissile material, and partially removed materials from 30 more, the President has resolved to continue his efforts abroad as long as he is in office.⁹⁹ Overall, the President’s focus on material security has been a boon to GTRI and found support with a growing number of countries who seek to rid themselves of nuclear material, or at least capitalize on the opportunity for foreign support. However, growing friction abroad has already begun to undermine the program’s efforts.

Russia’s increasing unwillingness to cooperate with the United States may be the single biggest hurdle to ongoing threat reduction efforts. Significant cuts in Russia’s nuclear security budget—two consecutive 10 percent cuts as of March 2016—threaten to undermine progress made by the GTRI and other threat reduction programs.¹⁰⁰ Russia’s activities in Ukraine have greatly undermined the U.S.–Russian dialogue. Critics have highlighted the administration’s failure to detect and stop Russia’s activities in the Crimea, although it seems unlikely halting Russian aggression in the region would have done any more for U.S.-Russian relations than attempting to resolve the situation diplomatically.¹⁰¹ Until more substantial relations can be reestablished, however, some hope still remains for U.S.–Russian nuclear security efforts. Although Russia has halted U.S. nonproliferation activities within Russia, there are still opportunities within the region—Russia remains open to GTRI activities in Belarus, Kazakhstan, Poland, and Uzbekistan.¹⁰² Overall, the administration has promoted and empowered GTRI efforts by establishing a broader nonproliferation message that has generally been reciprocated by the international community; however, as the President nears the end of his second term,

⁹⁹ National Nuclear Security Administration, “The Four-Year Effort,” 5.

¹⁰⁰ Matthew Bunn et al., *Preventing Nuclear Terrorism*, 108.

¹⁰¹ Michael R. Gordon, “Russia to Curtail Nuclear Security Efforts With U.S.,” *New York Times*, November 13, 2014, http://www.nytimes.com/2014/11/14/world/europe/russia-to-curtail-nuclear-security-efforts-with-us-officials-say.html?_r=1.

¹⁰² *Ibid.*

international friction may undermine future efforts to prevent terrorists from acquiring nuclear materials.

C. SECOND LINE OF DEFENSE

In 1998, the DOE and Russian Federation State Customs Committee (RFSCC) launched the Second Line of Defense (SLD) Program in an effort to detect illicit nuclear material trafficking.¹⁰³ Originally focused on augmenting Russian detection capabilities, the program's primary activity (SLD-Core) has expanded beyond its initial focus on the Russian boarder to include other countries.¹⁰⁴ Planners were initially concerned with theft from Russia's sizeable stockpiles of nuclear material. The events on 9/11, however, renewed fears of nuclear terrorism. In 2003, DOE expanded the SLD-Core activities by adding the Megaports Initiative—still managed under the broader SLD program—that provided equipment and training to personnel at select foreign seaports in support of the SLD's "deter, detect, and interdict" mission.¹⁰⁵ Gaining momentum from 2003, the SLD-Core and Megaport programs grew the number of international monitoring sites over the next decade. Since 2008, the administration's support for the SLD steadily declined as resources were refocused on material security under the Four-Year Effort. In FY2016 the SLD program was renamed as the Nuclear Smuggling Detection and Deterrence program (NSDD). The program was SLD for the majority of the Obama administration, and most of the associated literature refers to the program under the SLD moniker; consequently, this paper will continue to refer to the program as SLD for purposes of clarity.

1. Implementation

Concerns over the management and functionality of the SLD program, over time, resulted in a decreased willingness by the administration to support future efforts. SLD efforts remained largely on course for the first few years of the Obama administration's initial term; however, preexisting concern over the utility of SLD combined with

¹⁰³ Cantuti and Thomas, "Second Line of Defense Program," 3.

¹⁰⁴ Linden, Edward V., *Focus On Terrorism*, Vol 8, 153 (New York: Nova Science Publishers, 2002).

¹⁰⁵ U.S. Government Accountability Office, *Combating Nuclear Smuggling: Megaports Initiative*, 2.

sequestration pressures led a strategic review of the program in 2012. The review prompted the administration to propose a 65 percent cut in the overall SLD budget—with an 85 percent cut specifically targeting Megaports—in the FY13 budget proposal.¹⁰⁶ However, Congressional resistance to the administration’s proposed reductions would succeed, and the FY13 SLD budget would remain largely unchanged. The 2012 review was not, however, the first high-level inspection of the program. In 2006, a highly critical GAO report highlighted systematic failures within the program that greatly undermined its utility. Major concerns include the absence of a master list of U.S.-provided equipment; equipment that has been irregularly maintained and calibrated; pervasive corruption at some monitoring sites abroad; and unreported equipment failures.¹⁰⁷ Challenges implementing nuclear security measures domestically have only exacerbated the problem. The 2006 Safe Ports Act required 100 percent of all cargo entering the U.S. to be screened. As of 2016, the U.S. screens less than 5 percent of incoming cargo.¹⁰⁸ The shortfall has prompted the administration to seek aid from private sector entities. The all-cargo screening capability was intended to go into force in 2012, but has since been delayed twice and further delays are expected.¹⁰⁹ However, the SLD program’s most frequent critiques are not based on what has been done, but how the program’s progress is being measured.

Gauging the SLD program’s success remains difficult because current metrics are poor indicators to federal decision makers of the program’s benefits. Defined in the Government Performance and Results Modernization Act (GPRA) of 2010—an update of a 1993 document of the same name—federal agencies are required to integrate quantifiable goals into budgeting documents to illustrate cost-benefits to decision makers,

¹⁰⁶ Douglas P. Guarino, “Nuclear Security Program Review Complete, But Questions Remain,” Nuclear Threat Initiative, March, 7, 2013, <http://www.nti.org/gsn/article/nonproliferation-program-review-complete-questions-remain/>.

¹⁰⁷ U.S. Government Accountability Office, *Combating Nuclear Smuggling: Megaports Initiative*, 21.

¹⁰⁸ John Gallagher, “US Looks to Private Sector for 100 percent Scanning Help,” *Journal of Commerce*, May 13, 2016, http://www.joc.com/regulation-policy/customs-regulations/us-customs-regulations/obama-administration-looks-private-sector-100-percent-scanning-help_20160513.html.

¹⁰⁹ *Ibid.*

who then prioritize spending.¹¹⁰ This became problematic for the SLD program, since its inception the commonly used metric was the number of detection sites established.¹¹¹ While there have been documented success stories at sites, many of the specific countries of incident remain unidentified.¹¹² Government reports indicated dozens of cases of nuclear material interdiction, one of which included the seizure of an unspecified volume of HEU.¹¹³

Efforts to position appropriate equipment have been complicated by an unclear picture of nuclear material stockpiles. Cargo screening specialists have expressed concern over the former Soviet Union's failure to "keep careful records of its inventory of special nuclear material at several dozen locations, so it is unknown whether material was already stolen from the stockpiles."¹¹⁴ The frequent inability to demonstrate an empirical impact on nuclear smuggling has undermined the apparent value of the SLD program and the subsequent willingness of the administration to prioritize funding.¹¹⁵ It has not, however, undermined congressional support. Opinion with the legislature has frequently opposed the President's desire to decrease SLD funding.

¹¹⁰ Senate Committee on Homeland Security and Governmental Affairs, *GPRM Modernization Act of 2010*, Rep 111–372, H.R. 2142, 2010, <https://www.congress.gov/111/crpt/srpt372/CRPT-111srpt372.pdf>

¹¹¹ Department of Energy, *Department of Energy FY2014 Congressional Budget Request: National Nuclear Security Administration, Vol 1* (Washington, DC: National Nuclear Security Administration, 2014), 518, <http://energy.gov/sites/prod/files/2014/04/f14/Volume%201%20NNSA.pdf>.

¹¹² Although the report (GAO-16-460) deliberately avoids attribution, the document indicates the report's authors inquired at sites in Azerbaijan, Bulgaria, and Georgia.

¹¹³ U.S. Government Accountability Office, *Combating Nuclear Smuggling: NNSA's Detection and Deterrence Program is Addressing Challenges but Should Improve Its Program Plan* (GAO-16-460)(Washington, DC: U.S. Government Accountability Office, 2012), 22, <http://www.gao.gov/assets/680/677895.pdf>.

¹¹⁴ National Research Council U.S., Committee on Advanced Spectroscopic Portals. *Evaluating Testing, Costs, and Benefits of Advanced Spectroscopic Portals for Screening Cargo At Ports of Entry: Interim Report (abbreviated Version)* (Washington, DC: National Academies Press, 2009), 9.

¹¹⁵ Lee, Rensselaer W. *Smuggling Armageddon: The Nuclear Black Market in the Former Soviet Union and Europe* (New York: St. Martin's Press, 1998), 146.

2. Domestic Support

The administration has met with significant resistance from both Congress and SLD program managers in its efforts to reduce SLD funding. The House and Senate both opted to securing funding for SLD and Megaports efforts well above the President's proposal—notable proponents included Senator Dianne Feinstein (D-CA), Senator Lamar Alexander (R-TN), Congressmen Rodney Frelinghuysen (R-NJ), and Congressmen Pete Visclosky (D-IN).¹¹⁶ Moreover, Congress denied the administration's request to increase funding for domestic material-conversion efforts by \$150 million—a program tied closely to the final disposition of secured nuclear material. Had these efforts originated from the House alone, it could have been argued that the Republican dominated body was engaged in partisan maneuvering; however, resistance came from both the House and Senate, and included direct opposition from some Democrats.¹¹⁷ Similar to GTRI, the administration's pursuit of funding for MOX plutonium conversion called for targeted reductions in nonproliferation programs: a swap in funding priorities many in Congress saw as directly opposed to one another.¹¹⁸ In the end, the administration failed to sway congress in support of its stated priorities and would only see funding reductions in SLD efforts, which it had hoped to achieve in a year, occur more gradually.

3. International Support

Efforts to promote SLD activities through international diplomacy have greatly contributed to the program's global presence, but cooling relations between the U.S. and Russia have had a detrimental impact on the program's future potential. With Russia announcing in 2014 that it will discontinue cooperation with the U.S. on a number of nonproliferation programs, the status and future of SLD sites within Russia are “unknown”—about 45 percent of the SLD's total monitoring stations are in Russian

¹¹⁶ “Senate and House Appropriators Increase Funding for Nuclear Terrorism Prevention Programs,” Center for Arms Control and Non-Proliferation, May 3, 2012, <http://armscontrolcenter.org/senate-and-house-appropriators-increase-funding-for-nuclear-terrorism-prevention-programs-2/>.

¹¹⁷ Ibid.

¹¹⁸ Ibid.

territory.¹¹⁹ Destabilization of the region, specifically throughout the Ukraine and Crimea, has also resulted in the deactivation or destruction of 84 monitoring systems.¹²⁰ The impact to materials detection has undoubtedly reduced the SLD program's effectiveness and its potential to detect would-be nuclear terrorists during transit. Russia's large stockpiles of fissile material and that fact that a significant portion of the world's documented smuggling attempts have occurred within that region,¹²¹ only stand to magnify the impact failing relations may have.

In spite of Russia's unwillingness to continue U.S.-led nonproliferation efforts, the SLD program has witnessed significant diplomatic successes. The administration's efforts have gained inroads with other states in two important ways: the continued expansion of the SLD sites and the growing number of states willing to share some of the cost burden. In 2008, there were approximately 150 SLD sites installed and over a dozen maritime installations supported through the Megaports initiative; by 2015, the program had established over 600 static and mobile detection sites—490 sites have transitioned to partner country responsibility with "limited technical support."¹²² Goals between FY15–17 include the transitioning of an additional 62 sites to partner country responsibility.¹²³ Other states have opted to contribute financially, even in cases where the program has not established monitoring sites within their borders.¹²⁴ Ultimately, the push to transition ownership of SLD sites to the country where they are located supports the program's continued efforts monetarily—arguing for the program in Washington will undoubtedly

¹¹⁹ U.S. Government Accountability Office, *Combating Nuclear Smuggling: NNSA's Detection and Deterrence Program is Addressing Challenges but Should Improve Its Program Plan*, 25.

¹²⁰ *Ibid.*, 25–26.

¹²¹ Lee, *Smuggling Armageddon*, 35.

¹²² Department of Energy, *Department of Energy FY2017 Congressional Budget Request: National Nuclear Security Administration, Vol 1* (Washington, DC: National Nuclear Security Administration, 2016), 496, <http://energy.gov/sites/prod/files/2016/02/f29/FY2017BudgetVolume1.pdf>.

¹²³ *Ibid.*, 493.

¹²⁴ Department of Energy, *Department of Energy FY2012 Congressional Budget Request: National Nuclear Security Administration, Vol 1*, 325. The U.K and Finland (where there are currently no SLD sites) contributed \$140,000 USD and \$308,775 USD respectively; South Korea contributed \$140,000 USD where there are between 1–5 sites operating.

be easier if someone else is helping foot the bill. However, it does mean that equipment maintenance, calibration, and site operability will be entrusted to foreign actors who may not be as concerned about nuclear terrorism as the United States.

D. GLOBAL INITIATIVE TO COMBAT NUCLEAR TERRORISM (GICNT)

In 2006, President George W. Bush and President Vladimir Putin began the Global Initiative to Combat Nuclear Terrorism (GICNT) in an effort to promote the prevention of nuclear terrorism with partners in the global community.¹²⁵ The initiative consists of scheduled meetings and exercises focused on the integration of member-country's capabilities to enhance global nuclear security efforts, the sharing of experience and expertise, and the promotion of opportunities that allow nations to share information.¹²⁶ Further divided into nine specific principles, the GINCT is a completely voluntary activity. Every training and integration event occurs without establishing binding requirements. As of 2016, the initiative included 86 countries—of which 11 have joined since the Obama administration has been in office.¹²⁷

1. Implementation

The GICNT provides a useful mechanism to promote and enhance nuclear security practices among international participants. A stated objective of the administration was to make the GICNT into a more “durable international institution.”¹²⁸ In a 2009 letter to the GICNT, President Obama outlined a series of improvements that would, if implemented, move the organization toward his goal. Objectives included the formalization of the Implementation and Assessment Group (IAG), incentivizing cooperation by supporting partnered events, and redeveloping the Exercise Planning

¹²⁵ Gavin Cameron, “Formal and Informal Mechanisms for Countering Nuclear Terrorism: The ICSANT and the GICNT,” in *International Cooperation on WMD Nonproliferation*, ed. Jeffrey Knopf (Athens, Georgia, University of Georgia Press, 2016), 169.

¹²⁶ Global Initiative to Combat Nuclear Terrorism, “Overview.”

¹²⁷ *Ibid.*

¹²⁸ Obama, “Remarks by President Barack Obama in Prague as Delivered.”

Group (EPG).¹²⁹ Of these goals the IAG was perhaps the most important as it created a governing body within the GICNT to coordinate the initiative's efforts. The IAG formed a nexus where members could propose events (as hosts or participants) and, if necessary, coordinate for funding—most often coming from the two co-chairs.¹³⁰ The GICNT has also adopted training priorities aimed at enhancing member nations' crisis management capabilities following a nuclear attack—a unique focus given many programs and policies are solely concerned with the prevention of an attack.¹³¹ Adopted in the 2011 Plenary Meeting, the GICNT established the Response and Mitigation Working Group (RMWG), which would host a series of events aimed at exploring best options in the aftermath of a nuclear event.¹³² The voluntary nature of the program likely attracts more participants by allowing members to share information at their own pace rather than attempt to mandate minimum levels of participation. The GICNT is, however, ultimately constrained by a lack of tasking authority.

2. International Support

In spite of supporting an increase in overall participants, the international community's readiness to participate in GICNT activities appears to be waning. From 2006–2008 an average of twelve events occurred annually, from 2009–2016 an average of roughly seven programs took place annually.¹³³ In context of the administration's greater nonproliferation efforts, however, this may not necessarily reflect an unwillingness to participate. The Nuclear Security Summits have provided a number of additional avenues where states can support nuclear security that were not available prior

¹²⁹ C.S. Eliot Kang, "Enhancing International Partnerships," U.S. Department of State, June 16, 2009, <http://www.state.gov/t/isn/rls/rm/125349.htm>.

¹³⁰ Gavin Cameron, "Formal and Informal Mechanisms for Countering Nuclear Terrorism," 170.

¹³¹ Jasper Pandza, "Managing the Consequences of Nuclear Terrorism," *Survival* 53, no. 5 (2011): 130, <http://dx.doi.org/10.1080/00396338.2011.621637>.

¹³² Global Initiative to Combat Nuclear Terrorism, "2011 Global Initiative to Combat Nuclear Terrorism Plenary Meeting Joint Co-Chair Statement," Accessed June 26, 2016, 2, <http://gicnt.org/content/downloads/meetings/7th%202011%20Joint%20Co-Chair%20Statement%20-%20FINAL.pdf>.

¹³³ Global Initiative to Combat Nuclear Terrorism, "Key Multilateral Events and Exercises," Accessed June 24, 2016, http://gicnt.org/content/downloads/iag/GICNT_Past_Multilateral_Events_June2015.pdf

to the Obama administration. Furthermore, many of the seminars and training events hosted by the GINCT provide opportunities for states to build relationships that continue outside of the hosted events—non-governmental agencies are regular attendees at these events and often maintain relationships with their counterparts abroad.¹³⁴ It is, perhaps, because of the increased frequency of alternatives that countries feel they are doing enough, or are otherwise overburdened, by nuclear security measures. In spite of the administration’s call to make the GICNT a more durable institution, there does not appear to be a similar sentiment from the international community. Although current members continue to participate in annual meetings and exercises, there has been no consolidated push to formalize GICNT beyond its current mandate.¹³⁵ Furthermore, participation in GICNT appears to be declining. It may be that with the increase in attention to nuclear security—the Nuclear Security Summits, GTRI and CTR programs—they must spread out their resources, or it may be the perception that enough has been done. Whatever the rationale, the GICNT remains a useful avenue for the administration to address nuclear terrorism but one that may be losing its appeal within the global community.

As a co-chair of the organization, Russia’s continued influence on the GINCT is unclear in light of its withdrawal from many nonproliferation programs. As of the 10th anniversary meeting in 2016, Russia continued to send high level diplomats to participate and recommit to the GINCT principles.¹³⁶ The joint U.S.–Russian origins of the GICNT may be the most important influence on Russia’s calculus. Russia’s halt on nonproliferation measures appears to be more frequently tied to bilateral Russian-U.S. programs rather than multilateral initiatives like the GINCT; moreover, the voluntary nature of GINCT facilitates an exit should Russia decide it has had enough. For now, it

¹³⁴ National Nuclear Security Administration, “NNSA Scientists Engagement Addresses Nuclear Security Challenges,” July 26, 2012, <https://nnsa.energy.gov/mediaroom/pressreleases/scientistengagement072612>.

¹³⁵ U.S. Department of State, “Chairman’s Summary: Global Initiative to Combat Nuclear Terrorism (GICNT) 10th Anniversary Meeting,” Bureau of International Security and Nonproliferation, June 15, 2016, <http://www.state.gov/t/isn/rls/other/258581.htm>.

¹³⁶ *Ibid.*

would appear that Russia will maintain its position as co-chair until the next selection process in 2020.

E. NUNN-LUGAR COOPERATIVE THREAT REDUCTION (CTR) PROGRAM

One of the most well-established programs in the U.S. nonproliferation regime, the Cooperative Threat Reduction (CTR) Program has worked to improve nuclear security since its inception. Founded in an amendment by Senator Sam Nunn and Senator Richard Lugar, the “Soviet Nuclear Threat Reduction Act of 1991,” the program was intended to be a temporary measure to secure stockpiles of nuclear material and weapons in the Soviet Union.¹³⁷ It would, however, expand to become a decades-long initiative to promote nuclear security and cooperation between the U.S. and Russia. Early CTR efforts were often plagued with contractual obligations to “buy American” that undermined domestic sustainability, or complaints from Russian partners that support and supplies were exceedingly slow to arrive.¹³⁸ The following years would see both the building of relationships and policy adjustments that would expand the program’s global influence. The CTR program’s potential impact on nuclear terrorism was recognized early on. A Congressional hearing in 1996 identified Russia’s inability to secure its inherited nuclear-burden as a potential opportunity for would-be nuclear terrorists.¹³⁹ September 11, 2001, renewed the fear that Russian weapons or nuclear material could fall into the hands of terrorists, and the Bush administration increased funding to CTR activities “to support the war on terrorism.”¹⁴⁰ The 2005 Bratislava summit reinforced the Bush administration’s push for strengthening Russian nuclear security by establishing reporting requirements and reoccurring security exercises—the reports would be delivered on a biannual schedule to the Russian and U.S. presidents. Since 1991, CTR

¹³⁷ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 2.

¹³⁸ John M. Shields, “Conference Findings on the Nunn-Lugar Cooperative Threat Reduction Program: Donor and Recipient Country Perspectives,” *The Nonproliferation Review* 3, no. 1 (Fall 1995): 69, <https://www.nonproliferation.org/wp-content/uploads/npr/shield31.pdf>.

¹³⁹ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 3.

¹⁴⁰ *Ibid.*, 4.

efforts are estimated to have deactivated over 7,600 nuclear warheads and 2,300 missiles, destroyed 33 ballistic missile submarines, enhanced security at nuclear storage sites throughout Russia,¹⁴¹ and denuclearized three former Soviet states—Belarus, Kazakhstan, and Ukraine.¹⁴² The Bush administration would expand the CTR’s mandate, and in 2008 the program language would grow to include areas “outside of the former Soviet Union.”¹⁴³ The expansion would, however, gain traction slowly—relatively small funding increments were allowed for projects outside the region and only with approval from Washington.¹⁴⁴

1. Implementation

Once in office, the Obama administration would begin developing the CTR’s expanding mission and integrate the program into its broader nuclear security objectives. Although beginning before his administration, the President would encourage an expansion of the CTR’s activities beyond Russia’s borders. The planned growth would provide an opportunity for CTR efforts to include Asia and the Middle East in its ongoing activities; even including language for the denuclearization of the Democratic People’s Republic of Korea.¹⁴⁵ The nature of the change would eliminate the program’s original region-based approach—although activities in Russia would remain a priority by virtue of the sheer volume of material until Moscow refused to renew the program. The fundamental changes in the CTR program’s operational area would provide the administration an opportunity to promote its narrative of global nuclear security frequently exposed in the Nuclear Security summits. Arguing that “these programs are

¹⁴¹ Mary Kaszynski, “The Nunn-Lugar Cooperative Threat Reduction Program,” 2.

¹⁴² Togzhan Kassenova, “Implementing Nonproliferation Programs: The Cooperative Threat Reduction Process in the Former Soviet Union,” Carnegie Endowment for International Peace, November 8, 2015. <http://carnegieendowment.org/2015/11/08/implementing-nonproliferation-programs-cooperative-threat-reduction-process-in-former-soviet-union/isav>.

¹⁴³ National Defense Authorization Act for Fiscal Year 2008, H.R.Rep. No. 4986, P.L. 110–181, (2008), <https://www.congress.gov/bill/110th-congress/house-bill/4986/text>.

¹⁴⁴ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 5.

¹⁴⁵ Chen Kane, “From Donor to Partner: The Evolution of U.S. Cooperative Threat Reduction into Global Security Engagement,” Nuclear Threat Initiative, May 12, 2011, <http://www.nti.org/analysis/articles/donor-partner-evolution-us-cooperative-threat-reduction-global-security-engagement/>.

designed to keep these weapons out of the hands of terrorists and states of concern,” the administration would release a strategy report to Congress outlining WMD prevention activities in the Middle East and Northern Africa (MENA).¹⁴⁶ As of 2012, the administration’s efforts would establish procedures that allowed a greater share of current CTR funding to be spent within the MENA. Critics argued that the MENA was an area of growing concern and only two-percent of the roughly \$1 billion in CTR activities being spent in the region was inadequate.¹⁴⁷ As CTR activities expanded, however, the program faced increasing scrutiny from Washington regarding program objectives and budgetary practices.

The administration promoted CTR efforts as a means of achieving broader nonproliferation goals, but congressional concern over programmatic inefficiencies drove increased legislative involvement. In 2010, Congress directed the Department of Defense to coordinate with the National Academy of Sciences “under which the Academy shall carry out an assessment to review the metrics developed and implemented under subsection (a) and identify possible additional or alternative metrics.”¹⁴⁸ The report was critical of ongoing assessment practices, although, the report also identified possible shortfalls by participants outside of the DOD. Critiques included the following; failure to develop joint metrics; little cross-talk with Russia on realistic practices or objectives; a failure to prioritize objectives; a lack of consideration for “planned or unplanned change over time,” leaving some metrics less relevant due to circumstance.¹⁴⁹ The report also highlighted a lack of information exchange between the other agencies—the DOE and DOS specifically.¹⁵⁰ A second review in the FY2015 NDAA (S.2410) called for the

¹⁴⁶ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 9.

¹⁴⁷ David Albright et al., *U.S. Nonproliferation Strategy for the Changing Middle East: the Project on U.S. Middle East Nonproliferation Strategy* (Washington, DC: The Project on U.S. Middle East Nonproliferation Strategy January 2013), 14, <http://isis-online.org/uploads/isis-reports/documents/FinalReport.pdf>.

¹⁴⁸ National Defense Authorization Act for Fiscal Year 2010, H.R. Rep. No. 2647, P.L.111-84, (2009), <https://www.congress.gov/bill/111th-congress/house-bill/2647/text>.

¹⁴⁹ National Academy of Sciences, *Improving Metrics for the Department of Defense Cooperative Threat Reduction Program* (Washington, DC: National Academies Press, 2012), 5.

¹⁵⁰ National Academy of Sciences, *Improving Metrics*, 6.

Secretary of Defense to strengthen measurement practices meant to enhance CTR effectiveness.¹⁵¹ In spite of these reviews, the administration steadily increased funding to the program—capping out at \$530 million in 2014, an increase of almost \$100 million since inheriting the program in 2009. Funding priorities have not, however, always been a measure of program support.

2. Domestic Support

Program funding would, at times, be in question due to unrelated disputes between the administration and Congress. The President vetoed the FY2016 National Defense Authorization Act (NDAA) over concerns that it failed to address poor spending habits—the use of wartime funds for day-to-day maintenance and possible continuation of sequestration. The NDAA also directly impeded his aims of closing down Guantanamo Bay—an unrealized goal since taking office.¹⁵² The President signed a revised version of the act a few months after; however, he would threaten a veto again in May of 2016 for the FY2017 NDAA for similar reasons.¹⁵³ This unpredictability comes at an inopportune time for the CTR program. Already facing a declining budget, ensuring funding is available for commitment is an integral part of making any long-term program effective—both in fostering confidence among participants and establishing reliable multi-year resource allocation. Cited as problems during the program’s efforts in the former Soviet Union, erratic funding can greatly undermine programmatic efficiency.¹⁵⁴

Ultimately, however, congressional involvement in the CTR has been predominantly positive and has generally paralleled the President’s nonproliferation goals. In 2011, Congress directed the Secretary of Energy and Secretary of Defense to

¹⁵¹ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 17.

¹⁵² Carol E. Lee, “Obama Vetoes Defense Policy Bill,” *Wall Street Journal*, October 22, 2015, <http://www.wsj.com/articles/obama-vetoes-defense-policy-bill-1445547155>.

¹⁵³ Joe Gould, “White House Makes NDAA Veto Threat,” *Defense News*, May 17, 2016, <http://www.defensenews.com/story/defense/2016/05/16/white-house-makes-ndaa-veto-threat/84468038/>.

¹⁵⁴ National Academy of Sciences, *Improving Metrics*, 95.

submit a plan to conduct CTR activities with the Peoples Republic of China.¹⁵⁵ Other important initiatives have emerged from Congress to include the “Next Generation Cooperative Threat Reduction Act of 2013—S.1021” and the “Cooperative Threat Reduction Modernization Act—H.R.2314.”¹⁵⁶ In 2015 congress halted the use of any funds for CTR activities as a result of Russia’s activities in Ukraine and its violation of the Intermediate-Range Nuclear Forces (INF) treaty; however, Congress provided allowances should the Secretary of Defense and the Secretary of State certify the activity.¹⁵⁷ Overall, congressional activities supported of the administration’s aims and provided another mechanism to prevent nuclear terrorism.

3. International Support

The falling out with Russia as consequence of the Ukraine crisis has greatly impacted the administration’s CTR-related efforts. Funding in 2016 was the lowest in the administration’s history at \$356 million, with further cuts proposed in FY2017. The full halt to U.S.-Russian CTR activities has arguably been the most powerful driver of this shift—the Memorandum of Understanding (MOU) guiding CTR activities since 1992 expired in 2013, and the two countries failed to negotiate conditions for its renewal. Representatives within the administration have suggested program completion as the main reason for funding reductions.¹⁵⁸ However, Russia’s has stated that the CTR, as it stood, was “not consistent with our ideas about what forms and on what basis further cooperation should be built.”¹⁵⁹ Meanwhile, the global denouncement of Russian activities in Ukraine complicated the President’s ability to reach an agreement—although

¹⁵⁵ Ike Skelton National Defense Authorization Act for Fiscal Year 2011, H.R. Rep. No. 6523, P.L. 111–383, (2011), <https://www.congress.gov/bill/111th-congress/house-bill/6523/text>.

¹⁵⁶ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 6.

¹⁵⁷ Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015, H.R. Rep. No. 4435, P.L. 113–291, (2014), <https://www.congress.gov/bill/113th-congress/house-bill/4435/text#toc-HB50CD5ED60CA4B59AB39C7C0C35C5ABB>.

¹⁵⁸ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 15.

¹⁵⁹ Weitz, “Russian-U.S. Cooperative Threat Reduction beyond Nunn-Lugar and Ukraine,” Arms Control Association, August 2014, http://legacy.armscontrol.org/act/2014_0708/Features/Russian-US-Cooperative-Threat-Reduction-Beyond-Nunn-Lugar-and-Ukraine.

U.S.–Russian concerns over transparency and disagreements over arms reduction predated the Ukraine crisis.¹⁶⁰ The result was the Multilateral Nuclear Environmental Program in the Russian Federation (MNEPR) agreement. The program focuses on nuclear security but excludes cooperation with the Russian Ministry of Defense (MOD). While this affords inroads for continued cooperation with the Russian nuclear energy community and a more general approach to nuclear security, the agreement essentially halts activities related to weapons reduction—historically a cornerstone of the CTR program.¹⁶¹ As it relates to nuclear security and combating nuclear terrorism, the MNEPR still facilitates meaningful cooperation. Although the MOD has been excluded from future CTR activities, the MNEPR offers an opportunity to combat the threat of nuclear terrorism. The MNEPR agreement has not halted continued efforts to secure materials and repatriate HEU or plutonium to its country of origin—be it U.S. or Russia.¹⁶² The new program has also provided a means to allow European states to fund clean-up projects throughout Russia; convert HEU stocks to LEU; enhance customs control targeting nuclear materials; improve security at nuclear storage sites; and continue nuclear submarine dismantlement.¹⁶³

Critics have highlighted the impact on transparency and how much of Russia’s nuclear security is now out of sight to the global community. Combined with Russia’s struggling economy, critics warn that nuclear weapon and material security in the country will suffer.¹⁶⁴ The ending of the CTR program coupled with ongoing sanctions in Russia are unlikely to facilitate a short-term solution to this black-out for the administration. Supporters of the program have highlighted the agreement as a means to transition away from the “donor-recipient” relationship that traditionally characterized the CTR and

¹⁶⁰ Weitz, “Russian-U.S. Cooperative Threat Reduction beyond Nunn-Lugar and Ukraine.”

¹⁶¹ Bunn, Roth, and Tobey, *Cutting Too Deep*, 8.

¹⁶² Weitz, “Russian-U.S. Cooperative Threat Reduction beyond Nunn-Lugar and Ukraine.”

¹⁶³ Nikitin and Woolf, *The Evolution of Cooperative Threat Reduction*, 6.

¹⁶⁴ Weitz, “Russian-U.S. Cooperative Threat Reduction beyond Nunn-Lugar and Ukraine.”

develop a more balanced partnership.¹⁶⁵ While lacking the scope of its predecessor, the MNEPR offers the current and future administrations a mechanism to enhance nuclear security procedures and reduce the overall threat of nuclear terrorism.

F. NUCLEAR SECURITY SUMMITS (NSS)

Shortly after his speech in Prague, President Obama announced the need for a Global Summit concerning Nuclear Security. The first summit, hosted in Washington, DC, with leaders from 47 countries, assisted the administration's nuclear security goals in two important ways. First, it provided a forum to coordinate directly with the highest levels of foreign leadership—many countries were represented by their respective head of state. Second, the summit emphasized “concrete national and international actions.” The summits used unique language to capture these activities—House Gifts were national commitments or accomplishments while Gift Baskets were joint statements of commitment. The desired objectives were outlined in the 2010 Washington Work Plan, a detailed seven-page document identifying methods to improve nuclear security.¹⁶⁶ The plan provided a framework for President Obama to communicate and prioritize nuclear security objectives for the summit participants and would remain an important document for the following three summits. The proceeding summits would take place in 2012 (Seoul, South Korea), a third in 2014 (Hague, Netherlands), and the final summit in 2016 (Washington, DC). Like the first summit, each gathering would provide an opportunity for countries to make statements highlighting steps toward enhancing nuclear security.

1. Implementation

The implementation of the nuclear security summits characterized the administration's direct approach to nuclear security issues. Although objectives identified during the series were generally non-binding, the Washington Work Plan eschewed

¹⁶⁵ Matthew Bunn, “Rebuilding U.S.-Russian Nuclear Security Cooperation,” *Nuclear Security Matters*, January 22, 2015, <http://nuclearsecuritymatters.belfercenter.org/blog/rebuilding-us-russian-nuclear-security-cooperation>.

¹⁶⁶ Nuclear Security Summit, “2010-Washington, DC,” accessed June 30, 2016, <http://www.nss2016.org/past-summits/2010/>.

vague language and provided a list of specific recommendations to enhance global nuclear security. Special emphasis was placed on the enforcement of activities identified in UNSCR 1540 and improving the level of cooperation with the IAEA.¹⁶⁷ The Work Plan's recommendation had a clear impact on future summits as states submitted their National Progress Reports. Verbiage in each country's reports frequently reflected the Work Plan's initial recommendations, identifying steps taken to forward domestic and, at times, global nuclear security.¹⁶⁸ Collectively, the summits offered a number of mechanisms for countries to officially note their completed or intended goals. Since the end of the final summit in 2016, roughly 95 percent of the commitments made have been honored.¹⁶⁹

Critics have, however, pointed out a procedural shortfall of the summits. The Nuclear Security Summits' exclusivity reduced their ability to influence a global audience. Participants of the summits were invited by the U.S. based on their stockpiles of nuclear materials—generally by volume—and whether they might be open to dialogue “without protracted negotiations and compromises.”¹⁷⁰ Screening summit participants runs counter to the administration's global nuclear security narrative. Hand picking countries that are more likely to cooperate has short-term benefits—particularly useful due to each summit's short duration. In the long run, however, many of the measures addressed at the summits require participation from the global community. Therefore, countries excluded from the events—who subsequently have no say in what is decided upon—may be less willing to cooperate.¹⁷¹ Russia's absence from the final summit, however, eclipsed the summit's deliberate exclusion of other, smaller countries. The sentiment among Russian decision makers was the summits were a U.S.-led mechanism

¹⁶⁷ Warren, *The Obama Administration's Nuclear Weapon Strategy*, 101.

¹⁶⁸ Nuclear Security Summit, “Progress Reports,” Accessed June 30, 2016, <http://www.nss2016.org/2012/progressreports>.

¹⁶⁹ Nuclear Security Summit, “History,” accessed July 5, 2016, <http://www.nss2016.org/about-nss/history/>.

¹⁷⁰ Jonathan Stevenson, “The Last Nuclear Security Summit,” *Strategic Comments* 22, no. 3, (2016): viii, doi: 10.1080/13567888.2016.1198148.

¹⁷¹ Stevenson, “The Last Nuclear Security Summit,” vii.

to pressure Russia into unfavorable strategic-nuclear concessions—specifically by leveraging the threat of nuclear terrorism.¹⁷²

2. Domestic Support

Domestic support for the program has been mixed. Former Senator Sam Nunn lauded the 2010 summit as a “watershed moment for nuclear security,” citing the significant international support as evidence of the program’s potential.¹⁷³ Critics have argued that participation in the summits is voluntary—as is any agreement reached during the summit—and are therefore not tangible steps forward. Former Republican Senator Jon Kyl argued the “the summit’s purported accomplishment is a non-binding Communique that largely restates current policy and makes no meaningful progress in dealing with nuclear terrorism threat.”¹⁷⁴ Difficulties securing domestic support for nuclear security matters also complicated the President’s efforts to lead by example. Only after declaring the U.S. support for the Convention on Physical Protection of Nuclear Materials (CPPNM) at three different summits did the President secure a ratification.¹⁷⁵ The broader range of programs mobilized to support the Presidents efforts would, however, provide a more robust means of establishing credibility within the international community and would help facilitate broader objectives of the Washington Working Papers.

3. International Support

For the duration of the summits, the administration has greatly enhanced the frequency and impact of international dialogue on nuclear security and nuclear terrorism. From the beginning the summits were geared toward high-level decision makers—

¹⁷² Stevenson, “The Last Nuclear Security Summit,” viii.

¹⁷³ Nuclear Threat Initiative, *Building a Framework for Assurance, Accountability, and Action* (Washington, DC: Nuclear Threat Initiative, 2016), 3, http://www.ntiindex.org/wp-content/uploads/2013/12/NTI_2016-Index_FINAL.pdf.

¹⁷⁴ Warren, *The Obama Administration’s Nuclear Weapon Strategy*, 102.

¹⁷⁵ Kelsey Davenport, “Obama Hails Nuclear Security Milestone,” *Arms Control Today* 46, no. 4 (2016): 26, <http://libproxy.nps.edu/login?url=http://search.proquest.com/docview/1786538682?accountid=12702>.

frequently the heads of states or prime ministers themselves. In order to credibly, and repeatedly, attain this level of involvement the President knew that he too must become an important part of the summit process.¹⁷⁶ A great deal of diplomatic preparation established priorities and speaking points before each summit—often conducted by “sherpas” designated to speak on behalf of a country.¹⁷⁷ The resulting dialogue also promoted the President’s material security goals—many of the 11 countries made nuclear-material-free during the Four-Year Effort first declared their willingness to participate at the summits. What was missing from the summits, however, was a willingness to discuss complex and challenging issues. Deliberately structured for short and direct dialogue, the summits were not necessarily set up to tackle issues that may require protracted negotiations and this lack of depth may have undermined their full potential. But they arguably achieved one of their primary goals—raising global awareness on nuclear security.

The emphasis on streamlined diplomacy and rapid negotiations may have resulted in missed opportunities at the NSS series. Documents from the summits openly indicate the series purposefully avoided “sensitive issues” that may have impeded the event’s progress—in this case nuclear weapon materials.¹⁷⁸ Kenneth N. Luongo critiqued this approach, suggesting a need to more deeply address the framework of international rules that govern nuclear security and that because the summits failed to do so “gaps and weak links in the nuclear security system have been allowed to persist.”¹⁷⁹ The failure to address these topics may in fact have been a missed opportunity, but discussion of weapons and weapon material was not necessarily the objective of the summits. Furthermore there were official side-conferences that occurred simultaneously to the NSS

¹⁷⁶ Warren, *The Obama Administration’s Nuclear Weapon Strategy*, 103.

¹⁷⁷ Stevenson, “The Last Nuclear Security Summit,” vi.

¹⁷⁸ Nuclear Security Summits, “The Nuclear Security Summit 2014 in More Than 100 Questions,” Accessed on July 8, 2014, 20, <http://www.nss2016.org/document-center-docs/nss-in-more-than-100-questions>.

¹⁷⁹ Kenneth N. Luongo, “Endgame for the Nuclear Security Summits.” *Arms Control Today* 44, no. 1 (2014): 10, <http://libproxy.nps.edu/login?url=http://search.proquest.com/docview/1492845830?accountid=12702>.

series addressing broader issues not directly addressed at the conference. Solutions for a Secure Nuclear Future (SSNF) included over 200 nuclear security experts and the Nuclear Industry Summit involved hundreds of company presidents and industry leaders addressing how NSS decisions might be implemented.¹⁸⁰ The summits may have failed to grapple with the idea of a more holistic global nuclear security architecture; however, they raised the issue of nuclear security to the head-of-state level and prompted countries to formally commit resources or endorse efforts, like the CPPNM. As the summits came to a close, the President emphasized the need to maintain dialogue on nuclear security and how organizations like Interpol, the UN, and IAEA can continue efforts begun at the summits.¹⁸¹ Whether a similar emphasis on nuclear security will continue in the absence of direct U.S. involvement is unclear.

G. CONCLUSION

The Obama administration has committed itself to reducing the threat of nuclear terrorism, but it has encountered significant difficulties in its pursuit of this goal. Programs like the GTRI and CTR have enhanced global nuclear material security and have promoted the use of peaceful nuclear energy. Large quantities of weapons grade material have been consolidated or secured reducing the number of vulnerable locations in dozens of countries. The President has gained support from the international community as well. The Nuclear Security Summits and GICNT provided valuable opportunities to revive support for nuclear security and for the duration of the Obama administration has made the U.S. the global leader in nuclear security. SLD efforts have also expanded well beyond their initial scope by establishing a mechanism for material smuggling detection that continues to grow.

Alongside the administration's successes, however, there exist important problems. The President has consistently struggled to reach an accord with Congress, and

¹⁸⁰ Fissile Material Working Group, "About the Nuclear Security Summits," Accessed July 8th, 2016, <http://www.fmwg.org/nss2016.cfm>.

¹⁸¹ The White House Office of the Press Secretary, "Remarks by President Obama at the Closing Session of the Nuclear Security Summit," press release, April 1, 2016, <https://www.whitehouse.gov/the-press-office/2016/04/01/remarks-president-obama-closing-session-nuclear-security-summit>.

an inability to convince legislators has stunted some of his funding-related goals. Congressional disagreements with the President have also put material downblending options in jeopardy—a capability necessary to meet international agreements and to finally convert of a growing plutonium stockpile into peaceful nuclear-fuel. Friction with Russia has also put the President’s aspirations at risk. Rapidly cooling relations with Moscow has greatly reduced the willingness of Russia to participate in U.S.-sponsored nonproliferation programs.

Reaching a consensus with the international community will play an important role in the following chapter. Chapter III will focus on how the Obama administration has managed select internationally-led nonproliferation efforts, and whether there been an impact on the threat of nuclear terrorism. The implementation and strength of support from the domestic audience will remain important considerations. However, the international nature of the efforts detailed in Chapter III requires special attention to how effective the administration has been at reaching diplomatic consensus.

III. INTERNATIONALLY LED NONPROLIFERATION EFFORTS UNDER THE OBAMA ADMINISTRATION

This Chapter III examines how the Obama administration participated in international nonproliferation efforts. In observing select programs and policies, the chapter gives specific consideration given to the following themes: the effectiveness of programs and policy implementation; the administration's capacity for rallying domestic support for the nonproliferation measures; and the level to which the administration achieved consensus with the international community.

President Obama's approach to international nonproliferation programs was, in many regards, similar to his broad methodology when dealing with domestic efforts. The administration argued arms control, material security, and disarmament efforts all provided a means to reduce the threat of nuclear terrorism. This approach facilitated the President's range of nuclear objectives—disarmament and nuclear security being at the forefront. Nuclear terrorism was just as often the focus of an effort as it was a loosely related benefactor.

The President frequently cited the Nuclear Nonproliferation Treaty (NPT) as capturing both the ultimate goal of disarmament and as the guarantor of peaceful nuclear energy.¹⁸² Although not directly addressing nuclear terrorism, the President promoted the NPT like he did other closely-related programs—less weapons meant fewer opportunities for theft by terrorists. Another program, United Nations Security Council Resolution 1887 (UNSCR 1887), was directly championed by President Obama in an effort to reinvigorate the NPT. Like the NPT, the Comprehensive Test Ban Treaty (CTBT) was approached as a means of indirectly influencing weapons development and production. The Fissile Material Cut-Off Treaty (FMCT) was, like the CTBT, a means of influencing

¹⁸² Obama, "Remarks By President Barack Obama in Prague as Delivered;" Department of Defense, *Nuclear Posture Review Report*, April, 2010, v, http://www.defense.gov/Portals/1/features/defenseReviews/NPR/2010_Nuclear_Posture_Review_Report.pdf; The White House Office of the Press Secretary, "Press Conference by the President at the Nuclear Security Summit," press release, April 13, 2010, <https://www.whitehouse.gov/the-press-office/press-conference-president-nuclear-security-summit>.

the availability of nuclear weapons and material and by extension access to the same by nuclear terrorists.

Other international efforts were more directly geared toward the threat of nuclear terrorism. The Convention on the Physical Protection of Nuclear Materials (CPPNM) nested comfortably within the President's own material security efforts and was considered to be an important facet of the global community's nonproliferation legal-framework. Similarly, the International Convention on the Suppression of Acts of Nuclear Terrorism (ICSANT) established codified legal requirements aimed at combating nuclear terror that states party to the convention must adhere to. United Nations Security Council Resolution 1540 (UNSCR) performed a similar role—requiring states to enhance their domestic nuclear security measures. Ultimately, President Obama used each effort as a means to mitigate the threat of nuclear terror.

A. NUCLEAR NONPROLIFERATION TREATY (NPT)

The NPT is the centerpiece of the global nuclear nonproliferation regime. Since its inception, the treaty has played a critical role in establishing normative nuclear-policy. Taking shape in 1968, the treaty was established to support three pillars of nonproliferation: States with nuclear weapons are prohibited from sharing the weapons or technology with non-nuclear states; all parties are entitled to pursue peaceful nuclear energy programs; and all parties should take meaningful steps toward disarmament.¹⁸³ At its inception, the NPT was primarily concerned with preventing proliferation between states; however, the growing sentiment that nuclear-terrorism is a preeminent threat has refocused the NPT's role in the global nonproliferation regime.

1. Implementation

In an effort to reduce the threat of nuclear terrorism, the NPT has been an important part of the Obama administration's overall narrative. The 2010 Nuclear Posture Review (NPR) argued that U.S. pursuit of NPT goals would “reinvigorate the

¹⁸³ United States Department of State, “Treaty on the Non-Proliferation of Nuclear Weapons,” 2010, 3–4, <http://www.state.gov/documents/organization/141503.pdf>.

nonproliferation regime and secure nuclear materials worldwide.”¹⁸⁴ To this end, the President called for tighter controls over the spread of weapons and technology; specifically, he called for enhanced international inspections, consequences for NPT rule breakers and a new approach to the spread of global nuclear power.¹⁸⁵

The Obama administration has struggled to promote safeguards against would-be nuclear terrorists while simultaneously supporting the spread of peaceful nuclear energy. Speaking in Prague, the President reaffirmed the three pillars as a “basic bargain” of the treaty.¹⁸⁶ The NPT has provided the President a widely accepted means to promote this goal; however, critics have argued that the administration’s approach to the NPT has been insufficient. Unlike his calls to strengthen the PSI and GICNT, the President chose not to encourage any enhancement of the NPT as it currently stands—the NPT lacks both a governing council and dedicated secretariat that might assist with both implementation and administration.¹⁸⁷ Nonproliferation experts have pointed out that the language of the NPT still provides ample room for countries to produce weapons-grade material under the guise of a peaceful energy program.¹⁸⁸ The administration frequently emphasized its efforts to reduce the threat of nuclear terrorism were not intended to curb the right of peaceful nuclear power.¹⁸⁹

The administration has allocated significant resources in support of NPT and the use of peaceful nuclear energy while simultaneously seeking to secure materials from potential terrorists. Programs like the GTRI and CTR have often been the action agents to address proliferation concerns. These efforts have afforded President Obama opportunities to support his broader global nonproliferation objectives while addressing

¹⁸⁴ Department of Defense, *Nuclear Posture Review Report*, v.

¹⁸⁵ Obama, “Remarks by President Barack Obama in Prague as Delivered.”

¹⁸⁶ Warren, *The Obama Administration’s Nuclear Weapon Strategy*, 20.

¹⁸⁷ *Ibid.*, 21.

¹⁸⁸ Henry Sokolski, *Reviewing the Nuclear Nonproliferation Treaty*, ed. Henry Sokolski (Carlisle, PA: Strategic Studies Institute, 2010), 4.

¹⁸⁹ U.S. Department of State, “Office of Cooperative Threat reduction (ISN/CTR): Mission Statement,” accessed August 8, 2016, <http://m.state.gov/md58381.htm>.

concerns over terrorists stealing weapons or materials. An increasing number of states are exercising their right to peaceful nuclear power—a 2014 IAEA report identified 438 reactors currently operating and an additional 70 under construction.¹⁹⁰ Consequently, U.S. efforts to protect states’ rights to nuclear power and maintain global security has often centered around an emphasis on conversion from HEU to LEU reactors. Spearheaded by GTRI and CTR agents, the administration has sought to reduce the global “availability” of fissile material by reducing its associated demand.

The technical capability intrinsic to nuclear energy production is closely related too, often a requirement of, the production of nuclear weapons. Conducted every five years, nations’ party to the NPT conduct a review conference aimed at promoting the treaty’s three pillars and addressing emerging concerns. Some considered the President’s first review conference in 2010 a great success—perhaps more as a product of comparative evaluation since the 2005 conference was characterized as “the worst failure ever since these gatherings started.”¹⁹¹ The President’s early entrance into the realm of nuclear matters brought with it a degree of optimism that helped to buoy the 2010 conference—twenty of the participating nations cited President Obama’s activities positively on 66 distinct occasions.¹⁹² His speech in Prague and the first Nuclear Security Summit both publically reinforced the administration’s broader agenda. The conclusion of the President’s efforts, however, was considered acceptable but not substantive.¹⁹³

2. Domestic Support

The administration’s call for a strengthened and reinvigorated NPT was generally met with mixed feelings from Congress. The senate voiced its support of the NPT by passing Resolution 466 “Commemorating the 40th anniversary of the Treaty” and urging

¹⁹⁰ International Atomic Energy Agency, *Nuclear Power Reactors in the World*, 11.

¹⁹¹ Harald Müller, “A Nuclear Nonproliferation Test: Obama’s Nuclear Policy and the 2010 NPT Review Conference,” *The Nonproliferation Review* 18, no. 1 (2011): 219, doi:10.1080/10736700.2011.549182.

¹⁹² Müller, “A Nuclear Nonproliferation Test,” 231.

¹⁹³ *Ibid.*, 232.

the President to promote universality of the treaty.¹⁹⁴ As a resolution, S.Res.466 offered a means of showing solidarity with the spirit of the NPT but was drafted without any functional measures. The President did submit some actionable measures, the Treaty of Pelindaba and the Treaty of Raotonga—protocols calling for an Africa Nuclear Weapon Free Zone (NWFZ) and a South Pacific NWFZ respectively—were sent to the Senate by President Obama following the 2010 NPT Review Conference.¹⁹⁵ Each would, in practice, provide a regional reinforcement of the NPT. The treaty language emphasizes a more expansive list of “should nots” that include proliferation activities that would potentially put weapons or materials in the hands of non-state actors.¹⁹⁶ However, as of 2016, both treaties remain unratified by the U.S. Senate.¹⁹⁷

3. International Support

Efforts to stop would-be weapon programs have been assisted by the NPT. The JCPOA was an attempt to stop just such activity. Prior to the JCPOA, the President argued that “the greatest threat to proliferation in the Middle East and to the NPT is Iran’s failure to live up to its NPT obligations.”¹⁹⁸ Early in the administration’s tenure, the President’s message attracted the international community, facilitating efforts to reinvigorate the NPT. The Nuclear Security Summits, signing of the New START, and the Prague speech provided President Obama a great deal of credibility going into the

¹⁹⁴ Paul K. Kerr, Mary Beth Nikitin, Amy E. Woolf, and Jonathan Medalia, *Non-Proliferation Treaty (NPT) Review Conference: Key Issues and Implications* (CRS Report No. R41216) (Washington, DC: Congressional Research Service, 2010), 21. <http://www.fas.org/sgp/crs/nuke/R41216.pdf>.

¹⁹⁵ Amy F. Woolf, Paul K. Kerr and, Mary Beth D. Nikitin, *Arms Control and Nonproliferation, A Catalog of Treaties and Agreements* (CRS Report No. RL33865) (Washington, DC: Congressional Research Service, 2016), 30, <https://www.fas.org/sgp/crs/nuke/RL33865.pdf>.

¹⁹⁶ Nuclear Threat Initiative, “South Pacific Nuclear-Free Zone (SPNFZ) Treaty of Rarotonga,” July 12, 2016, <http://www.nti.org/learn/treaties-and-regimes/south-pacific-nuclear-free-zone-spnfz-treaty-rarotonga/>.

¹⁹⁷ Woolf, Kerr and, Nikitin, *Arms Control and Nonproliferation*, 30.

¹⁹⁸ E. B. Solomont, “US Retreat Can’t Soften Blow of Obama-Backed NPT Resolution,” *Jerusalem Post*, May 31, 2010, 1, <http://search.proquest.com.libproxy.nps.edu/docview/356975457/64D6D60059F740ABPQ/1?accountid=12702>.

2010 NPT Review Conference.¹⁹⁹ Eventually, the agreed upon results included: nuclear weapon states would not be obligated to disarm within a fixed timeline and non-weapon states would not face any new obligations; a minor but arguably forward moving consensus—especially given the 2005 conference had been stymied in its initial stages and was unable to pass an agenda.²⁰⁰

There would, however, be resistance. President Mahmoud Ahmadinejad of Iran argued that President Obama’s focus on nuclear terrorism was, in reality, a diversion for the purpose of concealing U.S. nuclear weapon activities.²⁰¹ Russia was also resistant, refusing to concede to any restrictions on nuclear weapons use—it was mistakenly assumed that the recently signed New START would have fostered a more cooperative tone between the U.S. and Russia during the conference.²⁰² In spite of resistance, the generally positive momentum of the conference facilitated a revisiting of the Middle Eastern WMD-FZ—the first since 1995.²⁰³ The WMD-FZ would reinforce the NPT’s broader call for a weapon-free world with more actionable regulatory measures. Attempts to settle the issue at the 2010 conference fell short, but plans were made to hold a regional conference in 2012 in an effort to capitalize on progress made. Ultimately, the 2012 conference would not occur, and the following 2015 NPT Review Conference would not enjoy the same progress as 2010.

The administration’s ability to reach consensus at the 2015 NPT Review Conference declined considerably compared to the 2010 conference. Relations between the U.S. and Russia had further deteriorated to an extent that cooperation was unrealistic. In addition, the failure to realize a Middle East WMD-FZ was the product of U.S. and its allies rejecting the plan as written—the U.S. resisted based on shared interests with

¹⁹⁹ Müller, “A Nuclear Nonproliferation Test,” 220.

²⁰⁰ *Ibid.*, 232.

²⁰¹ “2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons,” United Nations, accessed July 11, 2016, 15, http://www.un.org/en/ga/search/view_doc.asp?symbol=NPT/CONF.2010/50 (VOL. III).

²⁰² Müller, “A Nuclear Nonproliferation Test,” 221.

²⁰³ Kelsey Davenport, “WMD-Free Middle East Proposal at a Glance,” Arms Control Association, 2015, <https://www.armscontrol.org/factsheets/mewmdfz>.

Israel.²⁰⁴ Throughout the second review conference, nuclear terrorism remained a frequently cited threat, but the conference's stagnation prevented any further exploration of the idea and its relationship to the NPT.²⁰⁵

The administration has also faced criticism for proposing a costly nuclear weapon modernization program. Critics have argued that the modernization program poses a threat to the NPT and is a missed opportunity to work toward meeting the NPT call to disarm.²⁰⁶ Furthermore, it contradicts the President's message that the continued presence of nuclear weapons carries with it the threat of theft by terrorists, and states must therefore seek disarmament at the earliest possible date. Meanwhile, proponents like Defense Secretary Chuck Hagel argued that a combination of cultural shortfalls within the U.S. nuclear force and aging nuclear technical capabilities required a well-funded refurbishment.²⁰⁷ The difficulties of balancing calls for continued reliance on nuclear weapon systems while promoting his warnings of nuclear terrorism have challenged the President's aspirations for disarmament.

B. COMPREHENSIVE TEST BAN TREATY (CTBT)

The CTBT began at the Conference on Disarmament and was adopted by the UN in 1996 as a measure to eliminate explosive nuclear testing around the world.²⁰⁸ The treaty focuses on halting weapon's "horizontal and vertical proliferation by permanently freezing the state of global nuclear weapon development" by denying countries the ability

²⁰⁴ Andrey Baklitskiy, "The 2015 NPT Review Conference and the Future of the Nonproliferation Regime," Arms Control Association, August 2015, 15, https://armscontrol.org/ACT/2015_0708/Features/The-2015-NPT-Review-Conference-and-the-Future-of-The-Nonproliferation-Regime.

²⁰⁵ "2015 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons," United Nations, accessed July 15, 2016, 5, [http://www.un.org/en/ga/search/view_doc.asp?symbol=NPT/CONF.2015/50\(PartIII\)](http://www.un.org/en/ga/search/view_doc.asp?symbol=NPT/CONF.2015/50(PartIII)).

²⁰⁶ Hans M. Kristensen, "Nuclear Weapons Modernization: A Threat to the NPT?" Arms Control Association, May 1, 2014, https://www.armscontrol.org/act/2014_05/Nuclear-Weapons-Modernization-A-Threat-to-the-NPT.

²⁰⁷ Kingston Reif, "Nuclear Modernization Programs," Arms Control Association, October 2016, <https://www.armscontrol.org/factsheets/USNuclearModernization>.

²⁰⁸ Mary Beth D. Nikitin, *Comprehensive Nuclear-Test-Ban Treaty: Background and Current Developments*, (CRS Report No. RL33548) (Washington, DC: Congressional Research Service, 2016), i, <https://www.fas.org/sgp/crs/nuke/RL33548.pdf>.

to conduct nuclear testing.²⁰⁹ Forty-four states are identified in Annex-2 of the treaty whose ratification is required for the document to enter into force. As of July 19, 2016, the United States,²¹⁰ China, India, Pakistan, North Korea, Israel, Iran, and Egypt have all failed to ratify the treaty.²¹¹ U.S. efforts to ratify the treaty began with the Clinton administration. Shortly after the treaty was drafted, President Bill Clinton signed the document and submitted it to the Senate for ratification approval. The Senate, however, rejected the treaty in 1999—failing to acquire the two-third vote by a significant margin.²¹² The Bush administration halted efforts to reconsider the treaty.

Although failing to have entered into force as of yet, a verification regime (Article IV) exists. The International Monitoring System (IMS) consists of 321 scientific monitoring stations and 16 laboratories spread throughout the globe funded by dues paid by member states—detection methods include a suite of hydro-acoustic, infrasound, radionuclide, and seismic systems.²¹³ Although limited by the status of the treaty, and the willingness of non-signatories to participate, the CTBT verification regime remains a useful tool to the global community—it has detected all of the DPRK’s nuclear tests.²¹⁴

²⁰⁹ Christopher M. Jones and Kevin P. Marsh, “The Odyssey of the Comprehensive Nuclear-Test-Ban Treaty,” *The Nonproliferation Review* 21, no. 2 (2014): 208, <http://dx.doi.org/10.1080/10736700.2014.963295>.

²¹⁰ *Vienna Convention on the Law of Treaties (with Annex), Concluded at Vienna on 23 May 1969*, United Nations, <https://treaties.un.org/doc/publication/unts/volume%201155/volume-1155-i-18232-english.pdf>. Importantly, however, those states that have signed by not ratified (namely the U.S. in this case) are still bound to uphold the tenets of a treaty according to some interpretations of the Vienna Convention on the Law of Treaties. Specifically, Article 18 states “a State is obliged to refrain from acts which would defeat the object and purpose of a treaty when: (a) It has signed the treaty or has exchanged instruments constituting the treaty subject to ratification, acceptance or approval, until it shall have made its intention clear not to become a party to the treaty.”

²¹¹ Comprehensive Test Ban Treaty Organization, “Signatures and Ratifications World Wide,” Accessed July 19th, 2016, <https://www.ctbto.org/files/pdf/CTBTO-Map-2016-07-19-World.pdf>.

²¹² Nikitin, *Comprehensive Nuclear-Test-Ban-Treaty*, 3.

²¹³ Comprehensive Test Ban Treaty Organization, “Overview of the Verification Regime.”

²¹⁴ Comprehensive Test Ban Treaty Organization, “DPRK Nuclear Tests,” accessed September 14, 2016, <https://www.ctbto.org/the-treaty/developments-after-1996/2016-sept-dprk-announced-nuclear-test/>.

1. Implementation

During his 2009 speech in Prague, President Obama declared his intent to see the CTBT ratified.²¹⁵ Like other arms control programs, the CTBT offered the President a useful and widely supported treaty with which he could promote its his nuclear security goals. Concerns over the theft of nuclear weapons or materials by terrorists have often been at the nexus of the administration's arms control vision and efforts to combat nuclear terrorism.²¹⁶ In this case, the CTBT's influence on nuclear terrorism lay in its potential to influence the production of weapons and materials—the logic being a more universal test ban would be a disincentive for the production of both.

Quick to reengage the CTBT efforts and to synchronize its overall nonproliferation message, the administration participated in the Conference on Facilitating the Entry into Force of the CTBT in September of 2009.²¹⁷ However, the treaty remains unratified by the United States, a fact that has undermined the administration's ability to persuade similar countries like China, India, and Pakistan.²¹⁸ In spite of repeated calls for ratification—most recently during his visit to Hiroshima—the President has, as of the final months of his presidency, not achieved his goal of the treat's entry into force.²¹⁹

2. Domestic Support

Domestic politics have played the most important role in preventing the United States from ratifying the CTBT. When President Obama took office, he had the benefit of

²¹⁵ Obama, "Remarks by President Barack Obama in Prague as Delivered."

²¹⁶ Barack Obama, "Obama: How We Can Make Our Vision of a World without Nuclear Weapons a Reality," *Washington Post*, March 30, 2016, https://www.washingtonpost.com/opinions/obama-how-we-can-make-our-vision-of-a-world-without-nuclear-weapons-a-reality/2016/03/30/3e156e2c-f693-11e5-9804-537defcc3cf6_story.html.

²¹⁷ Nobuyasu Abe, "The Current Problems of the NPT: How to Strengthen the Non-Proliferation Regime," *Strategic Analysis* 32, no. 2, (2010): 214, doi:10.1080/09700160903554265.

²¹⁸ Nikitin, *Comprehensive Nuclear-Test-Ban-Treaty*, 5.

²¹⁹ Daryl G. Kimball, "In Hiroshima, Chart the Path Forward," *Arms Control Today* 64, no. 4 (May 2016): 3, <http://libproxy.nps.edu/login?url=http://search.proquest.com/docview/1786538653?accountid=12702>.

having just left the Senate—as had his vice president—and all the procedural familiarity that accompanies it; moreover, both the Senate and House held a Democratic majority.²²⁰ In spite of these advantages, the administration relied heavily on executive agreements to coordinate international exchanges. Increasing resistance from Congress lead Secretary of State John Kerry to suggest that Senate approval for treaties had become “physically impossible.”²²¹ Executive agreements offered the President an opportunity to circumvent Senate resistance and pursue his own objectives; particularly as congressional influence shifted in favor of the republicans. It is important to note that the presidential swing toward non-treaty agreements has been a growing phenomenon since WWII and is not exclusive to the Obama administration.²²² Opponents in Congress argued that the inability to verify CTBT violations and the potential impact on U.S. nuclear readiness made the treaty unappealing to U.S. interests.²²³ However, as Republican representation in congress grew until attaining a majority in 2010 experts suggested some resistance based primarily on partisan-lines.²²⁴

Ultimately, however, the President’s unwillingness to submit the treaty for approval to the Senate stymied any real effort to see the CTBT realized. Early in his administration the President suggested resubmittal at a “practical date.”²²⁵ Nearing the end of his second term, however, there does not appear to be a renewed push to see the treaty through.

²²⁰ Jeffrey S. Peake et al., “President Obama, the Senate, and the Polarized Politics of Treaty Making,” *Social Science Quarterly* 93, no. 5 (December 2012): 1295, doi: 10.1111/j.1540-6237.2012.00913.x.

²²¹ “Read Out from the House Foreign Affairs Committee Hearing, ‘Iran Nuclear Agreement: The Administration’s Case,” House Committee on Foreign Affairs, accessed July 20, 2016, 1, <https://www.google.com/search?q=is+the+JCPOA+a+treaty&sourceid=ie7&rls=com.microsoft:en-US:IE-Address&ie=&oe=>.

²²² Peake et al., “President Obama, the Senate, and the Polarized Politics of Treaty Making,” 1299.

²²³ David Hafemeister, “The Comprehensive Test Ban Treaty: Effectively Verifiable,” *Arms Control Today* 38, no. 8 (2008): 6, <http://search.proquest.com.libproxy.nps.edu/docview/211283889/A8A9B9A866E1455DPQ/2?accountid=12702>.

²²⁴ Peake et al., “President Obama, the Senate, and the Polarized Politics of Treaty Making,” 1304–5.

²²⁵ Sean Dunlop and Jean du Preez, “The United States and the CTBT: Renewed Hope or Politics as Usual?” Nuclear Threat Initiative, 2009, <http://www.nti.org/analysis/articles/united-states-and-ctbt/>.

3. International Support

The international community frequently pressured the United States to ratify the CTBT citing the potential impact. International proponents of the treaty argued that if the United States ratified the CTBT, it might influence other hold-out countries to do the same.²²⁶ China has suggested it will follow if the United States ratifies, and Ambassador Nobuyasu Abe, the former Under Secretary General of the United Nations for Disarmament Affairs, has argued that the pressures on the remaining hold-out countries will eventually lead them to capitulate.²²⁷ Technical reservations about the IMS's capabilities also exist among the international community. However, the CTBTO is vocal about IMS capabilities. A 2002 study by the National Academy of Sciences (NAS) concluded that nuclear explosions with a yield as low as 0.1 kilotons could be detected.²²⁸ Furthermore, the report argued the only plausible methods to circumvent the IMS are cavity decoupling and mine masking—methods attempted unsuccessfully by both the U.S. and Soviet Union during their nuclear tests—and that are still unable to reduce detectable yield below the IMS capabilities.²²⁹

Stalled U.S. progress on the CTBT has left the international community reluctant to invest more time convincing the Obama administration to promote the treaty at home. Russian Deputy Foreign Minister Sergei Ryabkov acknowledged it would be unrealistic to expect CTBT ratification this late in the Obama administration; however, Ryabkov argues that the United States' "stagnant position" is the primary obstacle preventing the CTBT from entering into force.²³⁰ Japan and Kazakhstan made more measured statements by calling for the remaining Annex-2 countries to ratify without delay—they

²²⁶ Abe, "The Current Problems of the NPT," 214.

²²⁷ *Ibid.*, 214.

²²⁸ Hafemeister, "The Comprehensive Test Ban Treaty: Effectively Verifiable," 8.

²²⁹ *Ibid.*, 8.

²³⁰ "Moscow not Counting on U.S. Ratifying CTBT During Obama Presidency," *Interfax: Russian & CIS Diplomatic Panorama*, April 2016, <http://search.proquest.com.libproxy.nps.edu/docview/1782222000/abstract/54D6CC319C8415BPQ/3?accountid=12702>.

did not refer to the U.S. directly.²³¹ As President Obama completes his term's remaining months, it appears unlikely the "practical date" he cited will arrive. Consequently, the CTBT will remain shelved from U.S. consideration until at least 2017–18 when the new President is sworn in and Senate elections may create a more receptive audience.

C. CONVENTION ON THE PHYSICAL PROTECTION OF NUCLEAR MATERIALS (CPPNM)

The CPPNM offered a legally binding mechanism to enhance nuclear material security. Adopted in 1979, the convention's language specifically addressed the security of nuclear material intended for peaceful purposes while in transit between countries, although, absent from the convention is language specifically regarding weapon-material security.²³² Concerned that the convention was too narrowly scoped, a diplomatic conference in 2005 drafted an amendment expanding the CPPNM's initial mandate to include the security of nuclear facilities, nuclear storage, and transport. The amendment also enhanced the capacity of countries to coordinate recovery efforts of lost nuclear material and to mitigate the impact of nuclear sabotage or damage due to conflict.²³³ In 2007, President George Bush submitted the CPPNM to the Senate for approval. The Senate approved the convention, but legislation adjusting the U.S. criminal code did not follow.²³⁴ President Obama approached the CPPNM as an important component of the global nonproliferation regime targeting nuclear terrorism. However, capitalizing on this opportunity required support from domestic leadership and a willingness to adapt U.S. law to fit the CPPNM's requirements.

²³¹ "Kazakhstan and Japan urge all Countries to Ratify CTBT as soon as Possible," *Interfax: Kazakhstan General Newswire*, April 2016, <http://search.proquest.com.libproxy.nps.edu/docview/1778286880/DF90DF83176E4EC7PQ/11?accountid=12702>.

²³² Nuclear Threat Initiative, *Building a Framework for Assurance, Accountability, and Action*, 39–40.

²³³ International Atomic Energy Agency, "Convention on the Physical Protection of Nuclear Material," accessed July 29, 2016, <https://www.iaea.org/publications/documents/conventions/convention-physical-protection-nuclear-material>.

²³⁴ Kingston Reif, "Obama Signs Nuclear Security Legislation," 36.

1. Implementation

Support for the CPPNM paralleled the administration's broader material security efforts by providing a legal backdrop for its ongoing practical measures, e.g., GTRI and SLD. President Obama first submitted CPPNM legislation in 2010, but did not receive approval due to conflicts within the Senate over specific language for the proposed changes—although there was overwhelming support for the effort from the House.²³⁵ Following the 2010, the White House hoped to capture congressional support by framing the convention as updates to “the U.S. Criminal Code to strengthen our ability to fully investigate and prosecute acts of nuclear terrorism.”²³⁶ However, a failure to achieve consensus within the Senate stalled the CPPNM once again.

The President resubmitted the proposed legislative changes again in 2015.²³⁷ On this occasion, however, the implementing legislation was attached to the USA Freedom Act—a bill primarily concerned with establishing limitations on intelligence-collection practices targeting U.S. citizens.²³⁸ The public unrest over government practices was, perhaps, advantageous to the administration. Attaching the CPPNM and ICSANT language to a document restricting domestic collection undoubtedly capitalized on the act's popularity.

The President's official press statement about the USA Freedom Act lacked any mention of the CPPNM, ICSANT, or the threat of nuclear terrorism. Inserting the

²³⁵ Kingston Reif, “Congress Finally, Passes Legislation to Prevent and Counter Nuclear Terrorism,” Arms Control Association, June 2, 2015, <https://www.armscontrol.org/blog/ArmsControlNow/2015-06-02/Congress-Finally-Passes-Legislation-to-Prevent-and-Counter-Nuclear-Terrorism>.

²³⁶ Mary Beth Nikitin, *Securing Nuclear Materials: The 2012 Summit and Issues for Congress*, (CRS Report No. R41169) (Washington, DC: Congressional Research Service, 2012), 13, http://www.nti.org/media/pdfs/72.pdf?_=1316466790.

²³⁷ Sam Nunn, “Statement of Former Senator Sam Nunn, NTI Co-Chairman, on the USA Freedom Act's Language Enabling U.S. Ratification of Crucial Anti-Nuclear Terrorism Treaties,” Nuclear Threat Initiative, June 3, 2015, <http://www.nti.org/newsroom/news/statement-former-senator-sam-nunn-co-chairman-nuclear-threat-initiative-usa-freedom-acts-language-enabling-us-ratification-crucial-anti-nuclear-terrorism-treaties/>.

²³⁸ “Use of Force and Arms Control,” *The American Journal of International Law* 109, no. 4 (October 2015): 884, <http://libproxy.nps.edu/login?url=http://search.proquest.com/docview/1778675407?accountid=12702>.

changes needed for CPPNM ratification was, perhaps, more opportunistic than planned. The President did, however, highlight that the Freedom Act's delay was all on the shoulders of congressional leadership—evidence of the administration's struggle to reach an accord with the legislature.²³⁹ The June 1, 2015 ratification of the CPPNM was a victory for President Obama's material security goals, however, the long delay has reduced the chance of implementation during his presidency.

2. International Support

The President's early efforts to ratify the CPPNM had a mixed impact within the international community. On one hand, the inability to ratify the CPPNM undermined the President's declarations in Prague that the U.S. should lead. Nickolas Roth, a research associate at the Project on Managing the Atom at the Harvard Kennedy School's Belfer Center for Science and International Affairs, highlighted the United States' ability to promote international action by setting the example and how, in spite of declaring ratification to be a priority at three of the four NSS, the U.S. failed to do so.²⁴⁰ Conversely, Roth credits the administration with convincing 61 countries that have acceded to the 2005 amendment since entering into office in 2009—prior to the Obama administration only 23 countries had acceded.²⁴¹

Early in the administration, the initial NSS work plan declared both the CPPNM and ICSANT in need of “resuscitation.”²⁴² It would appear, therefore, that in spite of a protracted fight to see success domestically, the administration's other nuclear security efforts have paid dividends. More than half of the states that signed during the Obama

²³⁹ The White House Office of the Press Secretary, “Statement by the President on the USA Freedom Act,” press release, June 02, 2015, <https://www.whitehouse.gov/the-press-office/2015/06/02/statement-president-usa-freedom-act>.

²⁴⁰ Roth, “Congress Gives Thumbs Up to International Nuclear Security Conventions.”

²⁴¹ Ibid.

²⁴² Warren, *The Obama Administration's Nuclear Weapon Strategy*, 102.

administration did so during one of the four NSS.²⁴³ As of May 8, 2016, enough countries have ratified the 2005 amendment for it to enter into force.²⁴⁴ The relative newness of the CPPNM within the U.S. legal framework has left little precedent for its impact on nuclear terrorism and, more broadly, nuclear security. The administration's ratification has, however, overcome a long-standing shortfall and begun the integration of an internationally accepted nuclear security measure.

D. INTERNATIONAL CONVENTION ON THE SUPPRESSION OF ACTS OF NUCLEAR TERRORISM (ICSANT)

The ICSANT offered the administration opportunity to specifically target nuclear terror. The convention requires that states develop legislation to penalize activities linked to nuclear terrorism and to establish regions of jurisdiction in order to clarify enforcement obligations. The ICSANT was developed by a UN ad-hoc committee, and, based on a draft document presented by Russia (A/AC.252/L.3), was eventually adopted as a formal Convention by the General Assembly on April 13, 2005.²⁴⁵

The convention was unique in that it laid out a number of specific requirements mandating countries to adopt legal principles criminalizing acts identified in the treaty, to actively attempt to combat nuclear terrorism within their borders, and to prosecute violators of these laws or extradite the offender to countries that will (the article specifically requires the offenses not be considered political in nature in order to avoid a "political offenses exception").²⁴⁶ Like the CPPNM, an attempt to seek ratification approval of the ICSANT during the Bush administration was approved by Congress but

²⁴³ Nuclear Threat Initiative, "Convention on the Physical Protection of Nuclear Material (CPPNM)," Nuclear Threat Initiative, May 8, 2016, <http://www.nti.org/learn/treaties-and-regimes/convention-physical-protection-nuclear-material-cppnm/>.

²⁴⁴ International Atomic Energy Agency, "Convention on the Physical Protection of Nuclear Material."

²⁴⁵ Rohan Perera, "International Convention for the Suppression of Acts of Nuclear Terrorism," United Nations Audiovisual Library of International Law, accessed July 25, 2016, 1, http://legal.un.org/avl/pdf/ha/icsant/icsant_e.pdf.

²⁴⁶ *Ibid.*, 2.

ultimately held back due to disagreements over how the U.S. legal code should be adjusted to meet the convention's intent.²⁴⁷

1. Implementation

Achieving Senate approval to ratify the ICSANT was a struggle, taking almost the entirety of both presidential terms, but it remained a victory for the administration's nonproliferation strategy. Like the CPPNM, the required legislative changes were bundled into the USA Freedom Act. Upon passage of the USA Freedom Act in June 2015, the administration met the ICSANT legislative requirements and received Senate approval for ratification. Ratified in September of 2015 the treaty, like the CPPNM, came late enough that implementation has begun near the end of the Obama administration and its impact has yet to be fully realized.²⁴⁸

2. International Support

Although achieving ICSANT ratification of the near the end of his administration, the President missed an opportunity to use U.S. participation as method of influence. Early in the administration, the ICSANT was highlighted as a crucial piece of the international legal framework combating nuclear terrorism—pursuit of ratification was considered a major step forward when presented as a “gift basket” during the NSS series.²⁴⁹ The U.S., however, failed to match this progress. This undermined the United States' credibility and ability to argue for tighter security in powers like Russia and

²⁴⁷ Kingston Reif, “Congress Finally, Passes Legislation to Prevent and Counter Nuclear Terrorism.”

²⁴⁸ The White House Office of the Press Secretary, “Fact Sheet: U.S. Ratification of Nuclear Security Treaties,” press release, April 1, 2016, <https://www.whitehouse.gov/the-press-office/2016/04/01/fact-sheet-us-ratification-nuclear-security-treaties>.

²⁴⁹ Nuclear Security Summit 2010, “Highlights of National Commitments,” April 12–13, 2010, <http://www.state.gov/documents/organization/237042.pdf>.

China²⁵⁰ or to influence non-participatory nations like Pakistan, Israel, and North Korea.²⁵¹ However, the struggle to ratify the ICSANT was not unique to Washington.

The difficulties in achieving state-level consensus, and ultimately approval, on the ICSANT were wide spread. Countries like Canada and Australia—that have a long history of shared security goals with the U.S.—ratified only after years of consideration, and Ireland has yet to sign.²⁵² Jeffery Knopf suggests that the challenge may lie not in any reluctance to criminalize nuclear terrorism, but because the convention is “more of a counterterrorism measure than a nonproliferation measure, and therefore it became entangled in the larger problem that the UN has not been able to reach an agreed upon definition of terrorism.”²⁵³ The administration’s attempt to overcome this discrepancy took the majority of its eight years. Ratification of the ICSANT is a useful step forward in enhancing the legal framework targeting nuclear terrorism. However, the president’s long delay has greatly undermined efforts to implement and exploit the convention during his remaining months.

E. FISSILE MATERIAL CUT-OFF TREATY (FMCT)

In September 1993, former President Bill Clinton called on the United Nations General Assembly (UNGA) to work toward an international ban on fissile material production—arguing that increasing global stockpiles “were raising the danger of nuclear terrorism in all nations.”²⁵⁴ In December of that same year the UNGA passed resolution 48/75L that sought to examine the feasibility of a global fissile material production halt,

²⁵⁰ Matthew Bunn, “US Failure to Ratify Key Nuclear Security Conventions,” *Nuclear Security Matters*, March 12, 2014, <http://nuclearsecuritymatters.belfercenter.org/blog/us-failure-ratify-key-conventions>.

²⁵¹ Nuclear Threat Initiative, “International Convention on the Suppression of Acts of Nuclear Terrorism.”

²⁵² *Ibid.*

²⁵³ Jeffery W. Knopf, “Multilateral Cooperation on Nonproliferation,” *Monterey Institute of International Studies*, October 2012, 16, <http://www.dtic.mil/dtic/tr/fulltext/u2/a569925.pdf>.

²⁵⁴ United Nations, *A Fissile Material Cut-off Treaty: Understanding the Critical Issues, Institute for Disarmament Research* (New York: United Nations Institute for Disarmament Research, 2010), 1, <http://www.unidir.org/files/publications/pdfs/a-fissile-material-cut-off-treaty-understanding-the-critical-issues-139.pdf>.

the Conference on Disarmament (CD) further scrutinized the resolution in order to determine how such a treaty might be implemented.²⁵⁵ The Canadian ambassador General E. Shannon was charged with this task, and in 1995 Shannon established the framework for a committee whose role was to negotiate the treaty among UN members.²⁵⁶ Efforts to see the treaty to fruition since 1995 have, however, been problematic. Resistance to the proposed treaty language most frequently originates from nuclear weapon states. Concerns over the applicability to existing stockpiles and treaty verification are the most frequently cited objections—a 2006 U.S. white paper to Geneva argues that adequate verification is unrealistic and therefore verification provisions should be removed from the proposed treaty entirely.²⁵⁷ Following his speech in Prague, President Obama approved a renewed effort to see the FMCT treaty realized, arguing, “If we are serious about stopping the spread of these weapons, then we should put an end to the dedicated production of weapons-grade materials that created them.” Since his declaration to end fissile material production, the President has met only minor success.

1. Implementation

An inability to begin negotiations has stalled the FMCT and prevented major progress. Since 1993, the FMCT has failed to coalesce into anything beyond a proposal to negotiate. The failure to overcome the issues of verification and existing stockpiles has halted forward progress. The President’s attempt to reinvigorate FMCT talks prompted the CD to do the same—resulting in a new working group in 2009.²⁵⁸ In spite of differences over what provisions should remain within the treaty, its fundamental aim has

²⁵⁵ United Nations, *A Fissile Material Cut-off Treaty*, 1.

²⁵⁶ Gerald E. Shannon, “Report of Ambassador Gerald E. Shannon of Canada on Consultations on the most Appropriate Arrangement to negotiate a Treaty Banning the Production of Fissile Material for Nuclear Weapons or Other Nuclear Explosive Devices,” United Nations Conference on Disarmament, CD/1299, (1995), 1, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G95/610/27/PDF/G9561027.pdf?OpenElement>.

²⁵⁷ United States Department of State, “White Paper on Fissile Material Cutoff Treaty,” May 18, 2006, <http://2001-2009.state.gov/t/isn/rls/other/66901.htm>.

²⁵⁸ United Nations, “Decision for the Establishment of a Programme of Work for the 2009 Session: Adopted at the 1139th plenary meeting on 29 May 2009,” Conference on Disarmament, CD/1864, (2009), 2, [http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/E8846993B5213D59C12575DF0029EE11/\\$file/CD%2B1864%2BEnglish.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/E8846993B5213D59C12575DF0029EE11/$file/CD%2B1864%2BEnglish.pdf).

the potential to reinforce President Obama’s vision. By capping the production of fissile material it would essentially establish an upper limit on the amount of material that needed defending from terrorists. However, the working group failed to gain any traction among the international community and key disagreements over the proposed terms has kept the treaty in a deadlock.

2. International Support

The Obama administration has actively attempted to overcome longstanding hurdles that have prevented the FMCT from moving forward. There have been cases where countries opt to tie FMCT to efforts in loosely related areas—China argued FMCT negotiations could not move forward unless they were tied into implications of U.S. missile defense initiatives and space activities,²⁵⁹ and other states have argued similarly about related disarmament negotiations.²⁶⁰ Pakistan’s resistance to the treaty has been especially resolute. Since the mid-1990s, Pakistani representatives to the CD have argued against discussion on the treaty or redirected the debate toward less relevant administrative criteria. Pakistan argued that its lack of parity with India’s fissile material stockpiles was unacceptable and that they could not “agree to freeze inequality.”²⁶¹

The net result has been a stagnation of FMCT efforts since its proposal—the stutter of meetings and conference held since its inception have done little to forward the treaty’s development. While briefing the CD, the State Department’s Rose Gottenmoeller argued that holding FMCT discussions among a smaller group—in this case the P5 (United States, Russia, China, France, United Kingdom—might alleviate the back-and-forth delays that have impeded action.²⁶² Failing to reach a consensus among all the

²⁵⁹ Cortright and Vayrynen, *Towards Nuclear Zero*, 99.

²⁶⁰ Sharon Squassoni, Andrew Demkee and Kill Marie Parillo, *Banning Fissile Material Production for Nuclear Weapons: Prospects for a Treaty (FMCT)* (CRS Report No. RS22474) (Washington, DC: Congressional Research Service, 2006), <https://www.fas.org/sgp/crs/nuke/RS22474.pdf>.

²⁶¹ Zia Mian and A.H. Nayyar, “Playing the Nuclear Game: Pakistan and the Fissile Material Cutoff Treaty,” Arms Control Association, April 1, 2010, https://www.armscontrol.org/act/2010_04/Mian.

²⁶² Warren, *The Obama Administration’s Nuclear Weapon Strategy*, 110.

NWS, meaningful dialogue among the P5 would still be a significant step forward, she argued.

Like many of the previously mentioned programs, consensus and action among the world's preeminent powers can have a catalytic effect within the broader international community. In the case of the administration's proposed P5 FMCT talks, however, failing to incorporate non-NPT nuclear powers failed to address the primary issue. In practice, NPT participants are only authorized to produce peaceful nuclear material, and the P5 NWS that are NPT participants have already ceased production of fissile material—China's production halt is unofficial.²⁶³ Therefore, talks held absent Pakistan, India, Israel, the DPRK failed to address their own fissile material production and, as a consequence, the potential risk of material theft or misuse. Although seeking P5 talks in an effort to achieve at least some forward movement, the potential impact on non-NPT NWS has been a significant motivation for the administration's interest in the treaty. In spite of this interest and its potential to further the President's nuclear security aims, there appears to be an equal amount of resignation to the current state of affairs. At a 2015 Conference on Disarmament, 19 countries, including the U.S., "reiterated previously held positions"²⁶⁴ With the Obama administration's time running short, the statement suggests a willingness to stay involved in the FMCT development process while accepting gridlock for the foreseeable future.

F. UNITED NATIONS SECURITY COUNCIL RESOLUTION (UNSCR) 1540

Treaties, charters, and UN resolutions have offered the Obama administration opportunities to further its nonproliferation objectives and mitigate perceptions of unilateral strong-arming. UNSCR 1540 was passed in 2004 and mandated three primary obligations of UN states: states cannot support the procurement of WMD by non-state actors; and states must establish and enforce legislation barring transfer of WMD to non-state actors; states must control WMD, delivery systems, and WMD-materials within

²⁶³ Zia Mian and Alexander Glaser, "Nuclear Weapon and Fissile Material Stockpile Production," United Nations NPT Review Conference, May 8, 2015, 19, <http://fissilematerials.org/library/ipfm15.pdf>.

²⁶⁴ Nuclear Threat Initiative, "Proposed Fissile Material (Cut-Off) Treaty (FMCT)," July 14, 2015, <http://www.nti.org/learn/treaties-and-regimes/proposed-fissile-material-cut-off-treaty/>.

their territory.²⁶⁵ The resolution's mandate has prompted the global community to address commercial proliferation by requiring the development of legal statutes targeting nuclear technologies.²⁶⁶ There has been little overt opposition to the resolution; however, concerns exist over how diligently countries are pursuing the resolution's mandate. North Korea is the exception on having submitted no reports on UNSCR 1540 activities and refusing to detail internal nuclear security measures.²⁶⁷ In spite of the resolution's approval among the global community, there is concern that the lack of enforcement has undermined UNSCR 1540's effectiveness.

1. Implementation

Since taking office, the Obama administration has used UNSCR 1540 to promote its own efforts to combat nuclear terrorism. The administration approached support to UNSCR 1540 in two ways: by synchronizing domestic security and through bilateral support meant to facilitate implementation.²⁶⁸ The latter approach was captured in the UNSCR 1540 "assistance clause," which states "in a position to do so to offer assistance as appropriate in response to specific requests."²⁶⁹ Since 2009, the U.S. has submitted three National Progress Reports (NPR) to the UNSCR 1540 committee. Each report, the most recent in 2016, outlined newly developed policies aimed at supporting the resolution and how ongoing domestic nonproliferation measures have adopted 1540 principles. Much of the domestic enhancement detailed to in the NPR has included the development of agency level-policies—i.e., DOD or DoE regulatory or security

²⁶⁵ "Security Council Resolution 1540 (2004)," United Nations, April 2004, 2, [http://www.un.org/en/ga/search/view_doc.asp?symbol=S/RES/1540%20\(2004\)](http://www.un.org/en/ga/search/view_doc.asp?symbol=S/RES/1540%20(2004)).

²⁶⁶ Javier Serrat, "Money Talks," *The RUSI Journal* 156, no. 6 (2011): 43, doi:10.1080/03071847.2011.642686.

²⁶⁷ Nuclear Threat Initiative, "NTI Nuclear Security Index, Theft|Sabotage: North Korea," accessed on August 3, 2016, ntiindex.org/countries/north-korea/?pdf=282&index=.

²⁶⁸ U.S. Department of State, "UN Security Council Resolution 1540."

²⁶⁹ "Security Council Resolution 1540 (2004)," 3.

improvements.²⁷⁰ A fair amount of these UNSCR 1540 supporting bullets are also updates or declarations of existing policies, and that the U.S. will afford UNSCR 1540 requirements particular attention. In spite of the attention 1540 has received, however, there are significant implementation shortfalls within the United States.

Although increasing 1540 support by promoting international commitments, the administration has struggled to fully implement the resolution at home. A 2016 assessment conducted by the Nuclear Threat Initiative (NTI) captured U.S areas of risk and improvement since 2010. The report highlighted the large quantity of material in U.S. possession and the extensive number of nuclear material sites as vulnerabilities, while the lauding the administration's improvement of international legal commitments—the CPPNM and ICSANT ratifications were seen as major steps forward.²⁷¹ The report did not cite specific facilities or quantities as items of concern. However, a 2014 report on U.S. fissile material stockpiles noted the elimination and down-blending of approximately 23 metric tons of HEU and 4.4 tons of plutonium.²⁷² Another 34 tons of plutonium had been earmarked for MOX conversion, but since the President's decision to defund production at Savannah River, planners are seeking an alternative disposition. It is unclear what impact this delay might have as GTRI efforts continue to collect and repatriate materials to the United States. While domestic stockpiles may be declining, the administration's full backing of GTRI's repatriation efforts, most recently the sizable quantity of plutonium received from Japan, may become problematic if effective conversion or down-blending methods are not implemented.

²⁷⁰ United Nations, "National Progress Report: United States Mission to the United Nations, S/AC.44/2016/2," accessed August 3, 2016, 4, http://www.un.org/en/ga/search/view_doc.asp?symbol=S/AC.44/2016/2.

²⁷¹ Nuclear Threat Initiative, "NTI Nuclear Security Index, Theft: United States," accessed August 3, 2016, <http://ntiindex.org/countries/united-states/?index=theft>.

²⁷² *Global Fissile Material Report: Nuclear Weapon and Fissile Material Stockpiles and Production*, International Panel on Fissile Materials (Princeton, NJ: The International Panel on Fissile Materials (IPFM), 2015), 16, <http://fissilematerials.org/library/gfmr15.pdf>.

2. Domestic Support

Difficulties implementing the resolution were, however, mitigated by relatively widespread approval of the resolution among domestic leadership. In 2011 the administration invited the UNSCR 1540 Committee—the UN body charged with overseeing the resolutions execution—to conduct an implementation review. The resolution stipulates country visits with the approval of the state in question, and the 2011 visit was the first for the United States and for the committee itself. Over 30 federal agencies and laboratories participated; activities included visits to sensitive nuclear facility storage and power sites.²⁷³ While there has not be a return visit—unsurprising given that the committee has only conducted 14 visits globally since the resolution’s inception—the meetings provided the administration an opportunity to establish the U.S. as a willing participant in the 1540 process.

Congressional support to UNSCR 1540 has been largely positive, however, programs operating in coordination with Russia have been largely halted. Instead, the MENA region’s “relatively weak record of implementation” of UNSCR 1540, the Senate supported the (S.1021) Next Generation Cooperative Threat Reduction Act of 2013 which called for CTR expansion into the region.²⁷⁴ The willingness to support expansion of UNSCR 1540-related activities offered opportunities to play a greater role in the MENA region and redirect funds away from programs operating in Russia.

3. International Support

The Obama administration provided significant support for foreign states in keeping with the assistance clause of UNSCR 1540. Existing nonproliferation programs like the CTR and GTRI have been cited as well suited for the task and are already

²⁷³ “Visit to the United States of America,” United Nations, Accessed on August 3, 2016, 2, <http://www.un.org/en/sc/1540/national-implementation/pdf/information-note-washington-dc-september-2011-32.pdf>.

²⁷⁴ Next Generation Cooperative Threat Reduction Act of 2013, S. Rep. No. 1021, P.L. 113–291, (2013), <https://www.congress.gov/bill/113th-congress/senate-bill/1021/text>.

reinforcing the UNSCR 1540 mandate.²⁷⁵ Moreover, the CTR program expanded into the MENA region in an effort to target perceived implementation shortfalls. The administration has also invested heavily in enhancing foreign security. A.Q. Khan's expansive proliferation activities and subsequent exposure in 2004 emphasized the need to address nuclear proliferation's commercial component.²⁷⁶

However, in spite of the administration's support of UNSCR 1540, some consider it to be insufficient. Implementation of UNSCR 1540 is largely up to the state in question and there exists very little means of enforcement. David Albright is especially critical of the administration's unwillingness to leverage the United States' economic influence in support of UNSCR 1540 compliance.²⁷⁷ Albright also characterizes the lack of UNSCR 1540 support by some countries as "outrageous." He names Malaysia, the UAE, Iran, and Israel as permitting the smuggling or procurement of shipments in violation of the tenets of 1540.²⁷⁸ What "compliance" entails is not entirely clear. In 2014, the UNSC president called for "full implementation" of UNSCR 1540 by 2021; however, the methods and details of implementation appear to be largely up to the state in question.²⁷⁹

G. UNITED NATIONS SECURITY COUNCIL RESOLUTION (UNSCR) 1887

Like UNSCR 1540, UNSCR 1887 offered President Obama an internationally inclusive means of forwarding his nuclear security objectives. The resolution was personally presented to the United Nations Security Council on September 24, 2009, by

²⁷⁵ Rose Gottemoeller and Ashot A. Sarkisov, "Building Partnership on the Strength of Experience: Trends, Priorities, Tools for Continued Russian—U.S. Cooperation," in *Future of the Nuclear Security Environment: Proceedings of a Russian—U.S. Workshop*, ed. Ashot A. Sarkisov and Rose Gottemoeller (Washington, DC: National Academy of Sciences, 2009), 251.

²⁷⁶ Brian Finlay and Johan Bergeans, "A Sustainable WMD Nonproliferation Strategy for East Africa," Naval Postgraduate School, 2014, 8. <http://calhoun.nps.edu/bitstream/handle/10945/42561/A%20SUSTAINABLE%20WMD%20NONPROLIFERATION%20STRATEGY%20FOR%20EAST%20AFRICA.FINAL.pdf?sequence=1>.

²⁷⁷ Albright, *Peddling Peril*, 248.

²⁷⁸ *Ibid.*, 249.

²⁷⁹ "Statement by the President of the Security Council, S/PRST/2014/7," United Nations, May 4, 2016, 1, http://www.un.org/en/ga/search/view_doc.asp?symbol=S/PRST/2014/7.

President Obama—it was adopted with unanimous support on the same day.²⁸⁰ Unlike UNSCR 1540, however, UNSCR 1887 was not primarily a means of thwarting would-be nuclear terrorists. Although frequently mentioning nuclear terrorism, the resolution focuses primarily on disarmament and continued pursuit of the measures outlined in the NPT.²⁸¹ The resolution called for a renewal of existing efforts and an “endorsement of commitments under the NPT, the additional protocol, and UNSCR 1540.”²⁸² Although UNSCR 1887 provided a means to reinforce the President’s broader nuclear security narrative, the absence of any enforcement mechanisms within the resolution shaped the resolution into more of a statement than a binding document.

1. Implementation

Early in his administration, President Obama committed the United States to a series of highly public events in an effort to promote his nonproliferation objectives. The Prague Speech, Nuclear Security Summits, and UNSCR 1887 provided the President avenues to showcase his conviction and willingness to grapple with nuclear security. In September of 2009, the President requested a UNSCR meeting, opting to chair the meeting himself—the first U.S. president to do so.²⁸³ At the meeting, the President requested that the resolution, which had originated as a U.S. concept paper and had been developed into a draft UNSCR prior to the meeting, be considered and adopted.²⁸⁴ Passing unanimously, UNSCR 1887 was similar to other efforts by the administration in that it approached arms control, nonproliferation, and nuclear terrorism collectively. The resolution was, however, somewhat vague in its interpretation of how these objectives

²⁸⁰ Council on Foreign Relations, “UN Security Council Resolution 1887: Non-proliferation,” September 24, 2009, <http://www.cfr.org/international-organizations-and-alliances/un-security-council-resolution-1887-non-proliferation/p20316>.

²⁸¹ *Ibid.*

²⁸² Melvin R. Buckner et al., “Nuclear Nonproliferation Policy in a Sustainable Energy future,” *Nuclear News* (June 2010), 29, http://www.ans.org/pubs/magazines/download/a_698.

²⁸³ Warren, *The Obama Administration’s Nuclear Weapon Strategy*, 93.

²⁸⁴ The White House Office of the Press Secretary, “Remarks by the President at the UN Security Council Summit on Nuclear Non Proliferation and Nuclear Disarmament,” press release, September, 4, 2009, <https://www.whitehouse.gov/the-press-office/remarks-president-un-security-council-summit-nuclear-non-proliferation-and-nuclear->.

could be achieved. Much of the resolution's language called for states to continue pursuit of objectives in the NPT or UNSCR 1540 without providing a new methods or mechanisms to do so.

2. International Support

The resolution itself was well received by the global community, but the UNSC meeting provided a forum for states to air ongoing grievances related to the NPT. Former U.K. Prime Minister Gordon Brown, President Obama, and former French President Nicholas Sarkozy all highlighted Iran's NPT non-compliance; meanwhile, the former President of China Hu Jintao argued that countries with the "largest arsenals should take lead" in disarmament.²⁸⁵ It seems apparent that given the opportunity to discuss the NPT participants would take jabs at NWS expressing their dissatisfaction with a lack of forward progress. However, the absence of any major enforcement mechanisms geared toward overcoming these grievances suggests a somewhat ineffective resolution. Aiden Warren highlights this shortfall, suggesting that UNSCR 1887 lacks substantive measures in support or enhancing nuclear security and arms reductions.²⁸⁶ Specifically, the resolution calls on non-NPT weapon states to "accede to the treaty as non-nuclear-weapon states"—a tall order as it would require those non-members with weapons to completely divest themselves of said capability before joining.²⁸⁷ The net result is a resolution that serves to reinforce the administration's apparent commitment to the NPT and nuclear security.

H. CONCLUSION

In his pursuit of a world protected from nuclear terrorism, President Obama often struggled to realize change. Citing the NPT in his historic Prague Speech and personally championing a security resolution, he took great effort to publically endorse his message.

²⁸⁵ McGrath and Savvidis, "UNSC Resolution 1887: Packaging Nonproliferation and Disarmament at the United Nations."

²⁸⁶ Warren, *The Obama Administration's Nuclear Weapon Strategy*, 20.

²⁸⁷ Council on Foreign Relations, "UN Security Council Resolution 1887."

Many in the global community responded positively and echoed his call to enhance global awareness of an array of nuclear matters.

In many of his efforts, the President met with success and forwarded his vision of a more secure world. The 2010 NPT Review Conference was given renewed vigor and the President was lauded by numerous world leaders for his efforts. Ratification of the CPPNM and ICSANT bolstered the United States' image as a world leader. Support for UNSCR 1540 has been enhanced, domestically and abroad. Since 2009, the U.S. has enhanced its own body of legislation and criminal law regarding nuclear security and nuclear terrorism. The net result has been a demonstrable willingness of the U.S. to become more deeply committed to measures combating nuclear terrorism.

The administration has also failed to achieve objectives it laid out early on. As of the final months of the Obama administration, the President failed to realize a ratified CTBT or FMCT. President Obama was challenged to overcome desires within congress to preserve certain nuclear capabilities and his own pursuit of arms reductions. Although relating to his warnings over nuclear terrorism, the President was unable to persuade his detractors and largely ceased efforts to see either treaty to fruition. Having realized the CPPNM and ICSANT at the end of his administration, it remains to be seen how profoundly they may impact nuclear terrorism. Equally worrisome, deteriorating relations with Russia have had a significant negative impact on the administration's international efforts. Overall, implementation of UNSCR 1540 and integration with foreign powers have largely expanded, but the U.S. and Russia activities are at a standstill. Furthermore, steps toward a more fully realized NPT appeared hopeful at the 2010 Review Conference. Since then, however, it appears that much momentum has been lost; the 2015 Review Conference was significantly less productive than the prior one.

President Obama's international efforts have been one facet of his broader approach to nuclear terrorism. Alongside domestically driven measures, the administration has promoted an array of nuclear security measures. Chapter IV assess the programs examined in Chapter II and III based on three areas of consideration. These are: have programs and polices been implemented and managed effectively—promoting and achieving goal oriented strategies while emphasizing efficient use of resources; has the

administration adequately fostered support within the United States to promote the President's greater nonproliferation agenda; and has the administration achieved a shift in behavior and practice by foreign states as a result of effective international diplomacy?

IV. ASSESSMENT

Because of the progress we made this week, and over recent years, more of the world's nuclear material is secure. It's harder for terrorists to get it. And as Commander in Chief, I want you to know that we're going to keep doing everything in our power to keep our nation safe and strong and free.

—President Barack Obama²⁸⁸

A. INTRODUCTION

This chapter seeks assesses the efforts outlined in Chapters II and III and answers the broader question of this thesis: have the Obama administration's nonproliferation efforts reduced the threat of nuclear terrorism? This chapter consists of three sections. The first section is a brief discussion on major strategies and considerations that have characterized the administration's approach. The second section is an effort-by-effort assessment of each program or policy discussed in Chapters II and III. The third section is a summation of the administration's efforts and an evaluation what direction efforts to combat nuclear-terrorism are taking as a result.

B. REPORT CARD

The use of grades akin to a traditional academic-style report card is intended to provide a familiar and succinct assessment of the President's efforts to reduce the threat of nuclear terrorism—taking significant inspiration from the Arms Control Association's Nuclear Nonproliferation and Disarmament report.²⁸⁹ Each of the four categories, or grades, draws from the data presented in Chapters II and III. The alphabetical grade represents a quick-look answer to whether the administration's efforts had any effect on the threat of nuclear terrorism. Meanwhile, the qualitative analysis of each program looks

²⁸⁸ Barack Obama, "Weekly Address: Securing the World from Nuclear Terrorism" (Washington, DC: Office of the Press Secretary, April 02, 2016), <https://www.whitehouse.gov/the-press-office/2016/04/02/weekly-address-securing-world-nuclear-terrorism>.

²⁸⁹ Elizabeth Philipp and Kelsey Davenport, *Assessing Progress on Nuclear Nonproliferation and Disarmament* (Washington, DC: Arms Control Association, July 2016), 4, <https://www.armscontrol.org/reports/2016-Report-Card-Nuclear-Disarmament-Nonproliferation-Efforts>.

deeper than “was there an impact” and is meant to be indicative of how the administration sought to mitigate nuclear-terrorism within a rapidly changing geopolitical environment. The qualitative analysis in this chapter, combined with the supporting data in Chapters II and III, is not necessarily meant to be an exhaustive accounting akin to the multiple GAO reports cited in this work. Rather, as an assessment, this chapter seeks to evaluate the administration’s overall efforts, and whether or not the President was able to enhance the nuclear security architecture aimed at reducing the threat of nuclear terrorism.

The President’s ability to: implement programs effectively; garner domestic support; and motivate international actors will remain critical considerations. The absence of an actual nuclear attack by terrorists poses a significant hurdle when determining the efficacy of the administration’s related counter-terrorism efforts. There have been cases of nuclear theft—an event which could precipitate a nuclear attack. However, the preponderance of examples involve non-weapons-grade material or insufficient amounts of weapons-grade material.²⁹⁰ Therefore, based on unclassified information, it remains difficult to establish direct casual relationships.²⁹¹ What we can surmise, however, is that enhancing the legal regime and securing both materials and weapons *can* have an effect—material security efforts are especially notable as they constitute a large share of the programs pursued by the administration. Efforts will be divided into four major categories for the purposes of grading and clarity:

- *High-impact “Grade A” efforts*—Efforts that produced substantive results aimed at reducing nuclear terrorism AND mobilized the international community by cultivating a level of resolve that promoted action.
- *Effective “Grade B” efforts*—Efforts that produced substantive results aimed at reducing nuclear terrorism OR efforts whose primary purpose

²⁹⁰ Lee, *Smuggling Armageddon*, 124. Lee offers an exception to the more common cases (theft of too little material, or material not enriched enough to function in a weapon). The case involves workers from the Zlatoust-36 Instrument-Building Planet near Chelyabinsk, Russia. The workers stole two nuclear warheads and stored them in a nearby garage, the weapons were later recovered. The information is claimed to have originated with the Russian General Prosecutors Office, however, Russian officials deny the incident occurred.

²⁹¹ Irving M. Copi, *Introduction to Logic*, 6th ed. (New York: Macmillian, 1982), 473.

was to foster international cooperation in order to promote the completion of other objectives.

- *Moderately Effective “Grade C” efforts*—Efforts that played a minor role invigorating international willingness but had little or no practical effect on the threat of nuclear terrorism.
- *Ineffective “Grade F” efforts*—Efforts that, due to an inability to implement or through poor execution, failed to effect meaningful change.
- *Incomplete efforts*—Programs, treaties, or polices included in stated objectives that were not met; however, efforts to see them commence, ratified, or approved are ongoing.

Prior to the assessment section, it may help to elaborate on overarching themes that significantly influenced the administration’s efforts or characterized its methodology. First, the administration’s approach to prevent nuclear-terrorism was integrative in nature. Second, the administration was forced to negotiate with a series of Congresses whose increasingly partisan preference complicated its efforts to reach objectives. Third, the significant deterioration of U.S.–Russian relations undermined and overshadowed much of the administration’s nuclear security efforts.

C. STRATEGIES AND CONSIDERATIONS

1. Integrating Nuclear Efforts

Since taking office, President Obama has approached nuclear security matters as series of distinct but critically linked challenges. The administration’s approach was an innovative take on the threat of nuclear terrorism that sought to integrate nonproliferation measures into a composite movement that could impact a myriad of nuclear matters.

The President’s integrative method cast a wide a net in his effort to combat nuclear terrorism. Programs primarily focused on nuclear terrorism offered a direct method while semi-related programs, or programs that historically were complete unrelated, were capitalized on for their second and third-order effects. The approach appeared to consider that: 1) arms control measures reduce the number of weapons vulnerable to theft; 2) material production controls and physical security measures reduce the chances fissile material may be co-opted for weapons; and 3) nonproliferation

policies help to reduce and control the avenues in which nuclear-technology might travel. The recognition that there was a synergy across programs was undoubtedly recognized by planners prior to the President Obama; however, it appeared that he considered this approach to be particularly well-suited for his vision and made great effort to develop it beyond the policies of his predecessors. The President's methods also became a vehicle through which to engage both Congress and the international community. The NPT conferences, UNSCR 1887, and the NSS series all provided a means of engaging audiences on multiple nuclear security matters simultaneously.

2. Navigating Congress

The Obama administration achieved support from Congress on a range of nuclear-security issues, but not without significant difficulty. From 2009–2011 the administration enjoyed both a House and Senate party majority. Beginning in 2011, Republicans held a majority in just the House, and by 2015 Republicans held a majority in both the Senate and House. These power trends challenged the administration's vision in two ways. First, the ever-present partisan politicking complicated the President's ability to realize the quantitative support frequently required. In fairness, the President's vision outlined in Prague was extensive, and to have accomplished it within four years would have required executive *carte blanche*—even the President admitted some of his objectives would not likely come to pass during his lifetime.

During President Obama's second term, however, this executive-legislative friction became especially acute. James Read characterized this phenomenon as a period of "hyper-partisanship" where intense polarization by each political party emphasized a focus on party-over-policy, undermining the effectiveness of Congress to legislate.²⁹² The result was an unwillingness to integrate the policy approval ratings and a greater inclination to stay within party lines.²⁹³

²⁹² James H. Read, "Constitutionalizing the Dispute: Federalism in Hyper-Partisan Times," *The Journal of Federalism* 46, no. 3 (2016): 1, doi:10.1093/publius/pjw012.

²⁹³ Jeffrey E. Cohen, Jon R. Bond, and Richard Fleisher, "Placing Presidential-Congressional Relations in Context: A Comparison of Barack Obama and His Predecessors," *Polity* 45, no. 1 (2013): 110, doi:http://dx.doi.org/10.1057/pol.2012.28.

The resulting political environment was a challenge to navigate and hindered President Obama’s approach to confront nuclear terrorism in a manner of his choosing. In some cases the President met with success with congressional work-arounds vis-à-vis CPPNM and ICSANT—both conventions were essentially legislative riders. In the case of the CTBT, the President appears to have conceded, acknowledging that current conditions made pursuit futile. As a result, some of his objectives remained tabled until a future administration opts to reinvigorate them. The administration’s calculus was similar with international actors as well. While beginning strong, deteriorating U.S.–Russian relations forced the administration to adapt its nuclear security objectives.

3. U.S.–Russian Relations

As a nation with the world’s largest stockpiles of fissile materials and weapons, Russia played an important role in the administration’s efforts to combat nuclear terrorism.²⁹⁴ Decades-long efforts geared at securing or eliminating weapons and material largely came to a halt between 2013 and 2014 (see Figure 2). Russia’s desire to interact with the U.S. on more equal footing played an important role in its withdrawal from cooperative agreements.²⁹⁵ Furthermore, Russian aggression in Ukraine prompted a similar withdrawal on behalf of U.S. leadership, prompting a halt in funding and condemnation from the administration.

Cooling relations with Russia was critical to this paper as it directly affected many of the efforts outlined; however, the phenomenon’s impact on the resulting grading scheme is not always a direct one. A full exploration of whether President Obama could have kept relations with Russia “warm” is outside the scope of this paper; however, at a glance, he was not left with many choices. The President’s options were, broadly speaking, a diplomatic or military approach. The military approach would likely have failed to maintain positive relations; the use of Afghanistan to wage proxy war, for example. The President opted for a more diplomatic response; this method has met with

²⁹⁴ William Tobey, “Peering Down From the Summit: The Path to Nuclear Security 2010–2016 and Beyond,” Belfer Center for Science and International Affairs, October 2, 2016, 11, doi: 10.1093/global/guw011.

²⁹⁵ Matthew Bunn et al., *Preventing Nuclear Terrorism*, v.

similar lack of success insofar as maintaining cooperative dialogue.²⁹⁶ It appears unlikely that the President could have fully staved off the cascade of events that led to the current nature of U.S.–Russian relations and the resulting decline in the established nuclear security sharing between the U.S. and Russia.

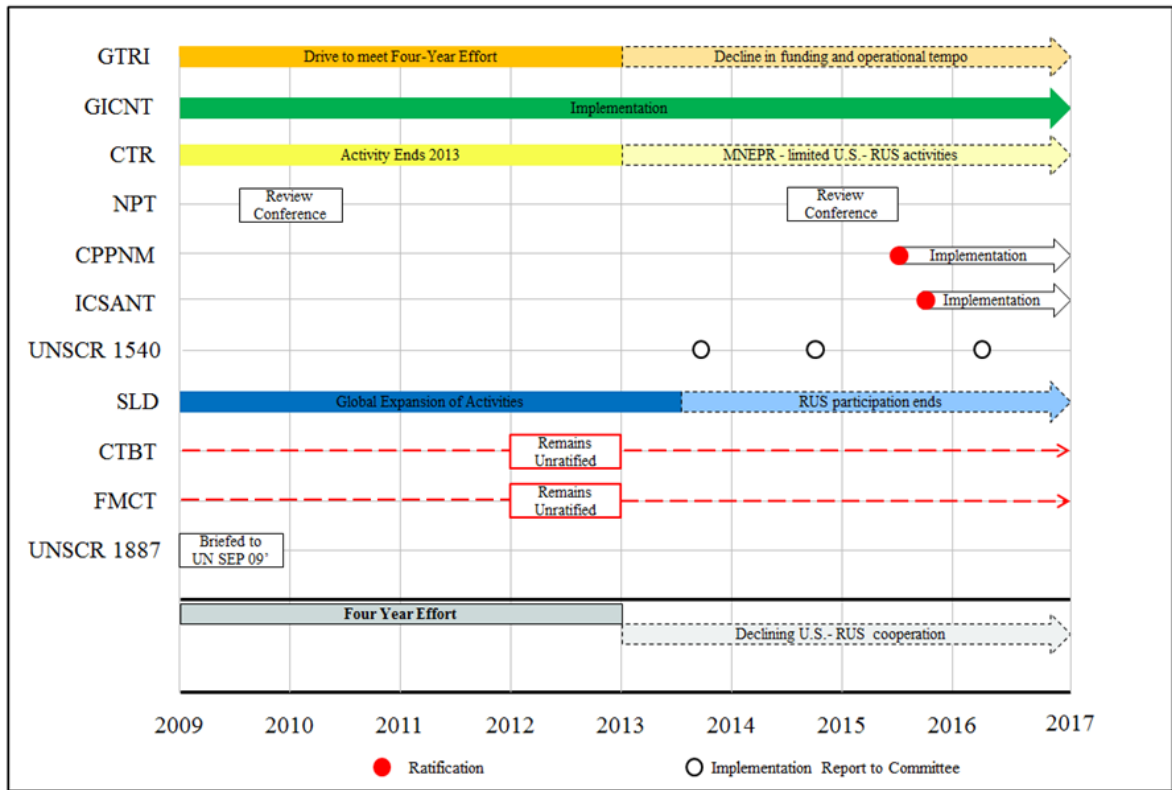


Figure 2. Timeline of Nonproliferation Efforts

Nevertheless, the impact failing relations had on President Obama’s nuclear-terrorism measures will remain an important factor—CTR, SLD, and GTRI activities have all suffered a marked loss of scope or discontinued entirely. Consideration will be given to the nature of this impact in the context of the program or effort being graded. Ultimately, nuclear security was just one of the many unfortunate victims as national interests clashed.

²⁹⁶ Tobey, “Peering Down From the Summit,” 11.

D. REPORT CARD

1. High-Impact Grade A Efforts

Within the suite of nonproliferation measures used by the administration each approach addressed the threat of nuclear terrorism in its own way. As discussed above, the effectiveness of many efforts was not entirely a product of its scope or capabilities, but the willingness of other nations to commit to the endeavor. Programs categorized as high-impact, or grade A, were implemented effectively by the administration and provided both innovative and effective ways to reduce the threat of nuclear terrorism while maintaining strong support from both the domestic and international audience. This category includes the following programs: the Global Threat Reduction Initiative, the Global Initiative to Combat Nuclear Terrorism, the Nuclear Security Summits, and UNSCR 1540.

a. GTRI

The President's GTRI efforts reduced the net amount of vulnerable nuclear material around the globe, effectively denying it from would-be nuclear terrorists. Industry experts involved in the program reacted quickly to the administration's warning of nuclear terrorism and executed a sweeping global material-security program.²⁹⁷ By following his Prague declarations with action, the President began his strategy of integration early on. Married to the idea of combating nuclear-terrorism, capabilities offered by the GTRI provided a means to facilitate material removal in nations that, prior to the Four-Year Effort, had little reason to invest themselves in counter-terrorism programs of a nuclear nature. Moreover, the initiative's reinvigorated efforts bolstered UNSCR 1540 and PSI activities already underway.

The result, many states that had possessed fissile material for fairly long periods, sometimes decades or more, voiced their consent for GTRI involvement and the material's subsequent removal. The President also enjoyed a relatively long period of support from Congress for GTRI activities—cast as a counter-terrorism, measure material

²⁹⁷ Obama, "Remarks by President Barack Obama in Prague as Delivered."

security became a more attractive venture to get behind. The net result was the removal or enhanced security of tens of thousands of kilograms in 11 countries.

Consequently, the administration's use of the GTRI made a valuable impact; however, the deterioration of U.S.–Russian relations bodes poorly for the initiative's foreseeable future. A few of the activities under the initiative's purview, such as reactor conversion, have been effectively halted—a significant proliferation concern as Russia still operates dozens of HEU reactors.

As with other programs, this has spurred the administration's pivot toward a more global approach, and GTRI efforts elsewhere continue to be planned. The administration did manage to maintain the U.S.–Russia material repatriation process of the GTRI, so as efforts to secure material outside of Russia continue, they remain able to return Russian-origin materials. In this case the relationship itself is, perhaps, more important than the nonproliferation benefits of seeing material back to Russia. Nonproliferation programs often trace their success to the interpersonal relationships that are built and sustained among program participants—long after administrations have changed, the industry professionals often remain.²⁹⁸ Consequently, the administration's efforts to promote continued GTRI activity beyond its final term may, in the future, facilitate dialogue to promote more productive nonproliferation activity.

b. GICNT

President Obama's support of the GICNT has enhanced the international community's response capacity to combat nuclear terrorist threats. Moreover, the administration's efforts have helped the program evolve into a more durable institution and provided an ongoing link with Russia where other avenues of cooperation have collapsed. Compared to programs like the CTR or treaties like the NPT, the GICNT is a comparatively small part of the global nuclear-security regime—it lacks official tasking authority and has a miniscule budget compared to other similarly scoped programs. Nevertheless, this dynamic is what makes the program so cost-effective. It facilitates and

²⁹⁸ Weiner, *Our Own Worst Enemy*, 297.

executes its mandate well: conducting practical exercises; enhancing cooperation among the security and scientific communities; and sharing information to improve partner nation capacity.

In effect, the GICNT has provided a means for each nation to connect its federal nuclear-security apparatus with those of other nations, and other non-governmental nuclear-security practitioners. By enhancing international communication and hosting “war-game” like events, the initiative offers a means to get in front of the threat and develop both preventative measures and after-event responses. Like professional exchanges under the CTR program before it, the GICNT has offered nuclear security practitioners a forum to connect. In a relatively small community, developing interpersonal connections among program participants is not an unimportant activity; a 2012 NAS report argues that these relationships are among “the main products of a successful capacity-building program.”²⁹⁹ Also beneficial, war-gaming threats among international actors offered training to the nuclear security practitioners. The GICNT’s table top exercises have facilitated a means to work through the logistical and bureaucratic minutiae that, during crisis, may be vital to a timely response. President Obama had a direct hand in enhancing this capability by promoting the formation of the IAG—a body within the GICNT tasked with facilitating the same events.

It remains unclear, however, how well the GICNT will continue to function should Russia opt to step down, or fail to be selected as co-chair. Again, as with many other programs the ability of the U.S. to influence this eventuality is limited, but Russia’s departure from the initiative would have a profound impact on its effectiveness. Based on the growing list of participants, it is unlikely the GICNT itself would be in jeopardy should Russia bow out; however, the initiative’s reach would undoubtedly suffer. As an addition to the administration’s nonproliferation regime, the GICNT has been a cost-effective means of engaging and integrating with the international community. Furthermore, the initiative offers a mechanism to maintain communication with Russia where other avenues have fallen silent. Should relations with Russia deteriorate further,

²⁹⁹ National Academy of Sciences, *Improving Metrics*, 3.

or if Russia decides to withdraw of GICNT activities of their own accord, dialogue would only become further strained. The NSS faced a similar hitch, as the summits progressed and President Putin came to power, Russia's willingness to engage on nuclear security declined significantly.

c. Nuclear Security Summits (NSS)

The NSS had a profound impact on the threat of nuclear terrorism by providing the political momentum needed to promote change and a forum for international action (see Figure 3). Collectively, the summits formed the capstone of the administration's nuclear security legacy and provided the President a means to revisit and renew his message of nuclear security throughout his presidency. More practically, the summits were a method of international engagement that largely circumvented Congressional interference.

The summits gave shape to the President's declarations in Prague, and his personal involvement as both a participant and leader cultivated his apparent sense of commitment to nuclear security. Activities at each NSS also provided a means to refocus efforts on particular issues, be they the UNSCR 1540 implementation, material security efforts, or cooperation on nuclear energy. Furthermore, the President also capitalized on his position within the summits to reassure the international community that the U.S. was still strongly pursuing CPPNM and ICSANT ratification even while finding less support domestically.³⁰⁰ The agreeable atmosphere at the summits that made this possible was the product of deliberate engineering on the part of the administration.

³⁰⁰ Roth, "Congress Gives Thumbs Up to International Nuclear Security Conventions."

| Results of the Nuclear Security Summits 2010-2016 |
|--|
| 40+ countries have engaged in capacity building (training, Centers of Excellence, or exercises) |
| 30+ countries have updated national laws, regulations, or structures relating to nuclear security. |
| 20+ countries have held or invited peer review missions, (bilaterally or through the IAEA) China, India, and Jordan – have subscribed to the 2014 Joint Statement on Strengthening Nuclear Security Implementation (INFCIRC 869), bringing the total number to 38. |
| 18 countries have increased the security of radioactive sources. |
| 17 countries have removed or minimized use of highly enriched uranium (HEU) |
| 16 countries have ratified nuclear security treaties |
| 15 countries have carried out physical security upgrades or acquired security or detection equipment. |
| 10 countries noted steps taken to support or implement United National Security Council Resolution 1540. |

Figure 3. Results of the Nuclear Security Summits 2010–2016³⁰¹

Each event was streamlined by inviting specifically selected participants who were amicable to new or enhanced nuclear security measures—a tactic pursued with a focus on timely results.³⁰² The President’s decision to hand pick participants was, arguably, a prudent option. Combined with a heavy media presence, the net effect was a forum that “created peer pressure” among participants and promoted practical change while avoiding empty pledges—an effect captured by a high frequency of gift-baskets

³⁰¹ Adapted from The White House Office of the Press Secretary, “Nuclear Security Summit 2016 - Highlights from National Progress Reports,” press release, April 4, 2016, <https://www.whitehouse.gov/the-press-office/2016/04/04/nuclear-security-summit-2016-highlights-national-progress-reports>.

³⁰² Stevenson, “The Last Nuclear Security Summit,” viii. Each country was vetted for their willingness to promote actionable nuclear security measures “without protracted negotiations and compromises.

(refer to Figure 3) presented at each summit.³⁰³ Designed to be a personal affair, world leaders often conversed directly on nuclear-security issues, giving them momentum absent at the lower levels of governance.

The summits provided both the beginning and the backbone for the administration's nuclear security efforts. As a reoccurring event, they reinforced the President's message that there was more to be done and that it was the responsibility of each leader that global nuclear security began at home. The willingness of President Obama to place the onus of security on those present was a bold move, Kenneth Luongo considered the President to have "put his personal prestige on the line like no other world leader has before on the nuclear issue."³⁰⁴ Ultimately, this investment appears to have paid off and a multitude of countries have pledged and completed significant changes aimed at reducing the threat of nuclear terrorism.

d. UNSCR 1540

For the duration of the Obama administration, UNSCR 1540 implementation has been inextricably tied to the NSS. The resolution was a speaking point fixed into the summits and was considered to be a "cornerstone of a reinvigorated non-proliferation regime."³⁰⁵ The summits created an environment where UNSCR 1540 compliance was questioned and explored, in keeping with the summit's focus on concrete change many states opted to commit themselves to full compliance through gift-baskets. Encouraging implementation in this manner was a creative approach to a problem that had existed since the resolution's inception—pressuring states into compliance without alienating leadership and putting further cooperation at risk. The administration monitored these pledges to determine whether the commitment was genuine.

In keeping with his integrative method, the President also leveraged UNSCR 1540's ability to facilitate a broader range of nuclear-security matters. The resolution

³⁰³ Nuclear Security Summits, "Foreign Press Center Briefing: Preview of the 2016 Nuclear Security Summit," March 30, 2016, <http://www.nss2016.org/news/2016/3/30/fpc-briefing-3-29-16>.

³⁰⁴ Warren, *The Obama Administration's Nuclear Weapon Strategy*, 103.

³⁰⁵ United Nations, "National Progress Report," 2.

acted as a nexus of nuclear-security by providing the legal and political momentum to weave threat reduction activities (GTRI, CTR, SLD) into a UN-sponsored effort. The administration's willingness to lend material and technical support—captured in the resolution's assistance-clause—bolstered President Obama's apparent commitment to the issue. Critics argue that national economic interests will continue to undermine UNSCR 1540, as establishing tighter import/export controls will likely hinder good business.³⁰⁶ Here again, the NSS offered a means to promote UNSCR 1540 compliance by putting countries “on stage” during the NSS. This was, however, executed with the need to preserve face and promote international sovereignty while simultaneously allowing U.S. nuclear security activities to move forward.

This administration met with less success when confronting Russia. The resolution benefits from its origins and multilateral nature, components that will likely prevent Russia's cloistering to an extent similar to the SLD or CTR. As the U.S. pivots away from active cooperation with Russia, it remains to be seen how much ongoing efforts can influence Russia's security preferences. Therefore, the administration's shift away from the country may be one of the few near-term solutions to bolster nuclear security until Russia is willing to reengage.

2. Effective Grade B Efforts

a. CTR

During the Obama administration the CTR program suffered its greatest defeat but may have begun a promising second life. The program provided an opportunity to integrate a storied threat reduction program into the administration's broader nuclear-security narrative. Since the downturn in U.S.–Russian relations, however, the administration began a pivot toward a more globally minded CTR program.

As a legacy program, the administration's use of the CTR was a continuation of earlier efforts—letting the program do what it did best was generally the approach early on. As very much a bilateral effort with Russia—activities occurring in other nations, like

³⁰⁶ Albright, *Peddling Peril*, 248.

Kazakhstan, generally dealt with Russian-owned weapons and material—the established relationships carried the program’s activities until 2013. Russia’s refusal to renew the program in 2013 had a profound impact on nonproliferation efforts and, while plans to expand outside of the historic Russia-centric framework existed prior to 2013, the shift hastened the Obama administration’s pivot to a more global approach.

Proposals for an expansion of CTR activities occurred early in President Obama’s first term—expansion into the MENA and Asia were on the administration’s to-do list from the onset and nested well in the President’s narrative of countering nuclear-terrorism. The President also benefited from CTR’s broad support in Congress and used this to his advantage. Congress’s halt on funding for Russian-CTR activity paralleled the President’s push for sanctions; there was little debate between the executive and legislative that until Russian aggression in the Ukraine ended the flow of money should come to a halt. Furthermore, the administration’s preference for multilateral activities complimented ongoing congressional motions to expand the CTR—captured by the Next Generation CTR Act of 2013 and CTR Modernization Act. This simultaneous expansion and contraction were the most critical shifts in the program during the Obama administration, and perhaps since the program’s inception.

Overall the administration handled CTR activities well, leading up to the falling out with Russia. Short of appeasement in Ukraine, it is unlikely the President could have maintained amicable relations with the Kremlin. How fast the U.S. can expand activities is, however, a critical next step. Should the President’s pivot to a more globally minded CTR program blossom, it could occupy a niche activity for continued nonproliferation measures. The DOS and DOE have a powerful motivation in maintaining CTR activities—even a greatly reduced CTR budget still draws hundreds of millions in funding—so there remains a profound institutional interest in both organizations.³⁰⁷ Retaining congressional support appears equally likely, the program affords legislative representatives a method of personally investing in a generally popular program aimed at

³⁰⁷ Weiner, *Our Own Worst Enemy*, 291.

promoting nuclear security and combating nuclear terrorism.³⁰⁸ With the domestic willingness and technical means in place, continued CTR success falls largely in the hands of future administrations to sustain domestic funding and international willingness to participate.

b. Second Line of Defense

During the Obama administration, the SLD program increased the global capacity to detect nuclear smuggling, but an inability to conclusively demonstrate effectiveness and diplomatic friction with Russia greatly undermined the program's impact on the risk of smuggling to terrorists. At face value, the program did enhance the number of monitoring stations globally—increasing the total number of sites by more than 450 sites between 2008 and 2016. Furthermore, it facilitated the administration's integrative approach, offering a mechanism to support the UNSCR 1540 mandate.

In spite of forward progress, unclear metrics played a role in declining support from the administration. Holistically, the program's purpose is to establish an international nuclear-detection framework. In spite of unclear metrics, it has arguably done so by establishing an increasing number of detection sites around the globe. Furthermore, reports indicate that while rare, the system has successfully detected a number of nuclear smuggling attempts. However, limited resources and the pursuit of other security objectives prompted the administration to reduce funding. Leadership within the NNSA echoed the administration's choice as necessary to "prioritize its resources."³⁰⁹ Institutional interests and branch loyalties may have played a role as the NNSA is, by way of the DOE, subordinate to the executive branch. Congress has successfully overruled executive pressures to reduce funding at times; however, in spite of their successes overall funding for SLD continues to decline.

³⁰⁸ The MOX conversion facility discussed in Chapter II offers a fair example. Promoting nuclear security can often be a boon both financially and politically. The MOX facility offers representatives a way to promote jobs in their districts and draw on large quantities of federal funds while simultaneously supporting efforts to reduce the threat of nuclear terrorism.

³⁰⁹ Guarino, "Nuclear Security Program Review Complete."

Combined with budget reductions, the withdrawal of Russia from the program was a unique blow to SLD activities. As a consequence of Russia's unwillingness to continue coordinating on sites within its borders, the condition of roughly 300 sites is now unknown; additionally, over 80 sites in Ukraine have been deactivated or destroyed. Whether these sites could have been repatriated or secured prior to hostilities is unknown, but the loss of so many sites has undoubtedly undermined the ability of SLD to act as an early-warning network.

President Obama's desire to see funding moved elsewhere may be the most prudent option for the foreseeable future. In keeping with his integrative approach, the program remains a useful mechanism to forward UNSCR 1540, PSI, and GICNT activities. Proponents of the program are widespread, so it does not appear SLD is doomed.³¹⁰ Furthermore, the program's physical nature provides a means of reinforcing the administration's rhetoric—a useful outlet when seeking to validate U.S. commitment among international partners.

3. Moderately Effective Grade C Efforts

a. UNSCR 1887

The UNSCR 1887 was just such rhetoric. The resolution was primarily concerned with reinforcing existing efforts, namely the NPT, and acted as more of a “morale-builder”—absent were any new commitments. In fairness to the administration, this appeared to be the intent of the resolution—establishing and reinforcing the President's pledge to nuclear security was a sensible first step after assuming office. Case in point, President Obama chaired the UNSCR 1887 proposal meeting personally, a deliberate maneuver that sought to demonstrate his willingness to lead from the front.

Free from any new substantive objectives, however, the resolution's effect was slight. Like the President's repeated invoking of the NPT, it offered a relatively inexpensive way to grasp the international community's attention and demonstrate U.S. commitment to combating nuclear terrorism. Within the context of the efforts discussed

³¹⁰ Guarino, “Nuclear Security Program Review Complete.”

in this work, the resolution was a useful but minor addition. Nevertheless, it was an effective way to kick-start the President's vision of an enhanced global nuclear security regime and like his use of the NPT, offered a means of reinforcing his warnings of nuclear terrorism to the world.

b. NPT

Like UNSCR 1887, the administration's handling of the NPT ended up being largely political. Early and frequent references to strengthen the NPT reinforced the global perception that, in spite of an aggressive campaign seeking to secure nuclear materials, the administration still honored nations' right to use peaceful nuclear energy. Furthermore, the President's calls for a nuclear-weapon-free world bolstered his apparent commitment to matters of nuclear security and lent credibility to his willingness to engage issues multilaterally—the 2010 NPR stated pursuit of the NPT was an effective means of reinvigorating the nonproliferation regime and securing materials.³¹¹

Beyond this political and, perhaps, emotional reinvigoration, there was only minor progress made toward a more fully realized NPT. Rather, the NPT continued to act as the “backbone” to other programs meant to combat proliferation. Using the NPT as a means of support was, perhaps, the President's most effective means of integrating it into his overall narrative. The PSI, UNSCR 1540, ICSANT, and other efforts have essentially become the action-agents of the NPT's broader nonproliferation message.

Toward the end of his second term, however, invoking the NPT lost its effectiveness. An inability to reach consensus at the 2015 NPT Review Conference—complicated by U.S. support for Israel—and a proposed expansion in U.S. nuclear weapons funding undermined the administration's credibility in the eyes of foreign nations. Ultimately, including the NPT into its nuclear security efforts was an easy method to catapult a message. However, this effect would fade over time.

³¹¹ Department of Defense, *Nuclear Posture Review Report*, vi.

c. CPPNM and ICSANT

The administration's ability to see the CPPNM and ICSANT ratified was a victory for nonproliferation proponents; however, success arrived so late that earnest implementation has only just begun. Nevertheless, achieving ratification is itself a forward step. Both conventions reflect a growing global recognition that both nonproliferation and counter-proliferation efforts can be enhanced by constructing an equally robust legal framework. Consequently, their ratification bodes well for President Obama's integrative approach. The GTRI and CTR generally pursue physical nuclear security for both weapons and material; whereas, the CPPNM and ICSANT look to establish legal measures that prevent, deter, or head-off the act of proliferation itself.

The means of ratification was, however, indicative of the administration's strategy to overcome domestic resistance. Only by attaching each document to legislation primarily concerned with an unrelated issue (domestic data collection) did the administration finally achieve success. Each convention has subsequently, and quietly, entered into U.S. law. The President's desire to lead the world in nuclear security was stymied at times by the United States' absence from treaties and conventions that enjoyed broad international support. Moreover, both the CPPNM and ICSANT directly address matters of nuclear terrorism and material security, both cornerstones of the Obama administration's Prague Agenda. The administration's success in ratifying each convention has avoided passing the same burden onto another administration. However, barring a significant change of course in the next administration, each convention will take time to integrate into the broader nuclear-security architecture pursued by the Obama administration. Reworking existing laws and developing new ones is a multilayered process that will, in time, greatly define the efficacy of both conventions. The challenges associated with integrating global nonproliferation requirements with domestic law played a large role in the administration's inability to realize some of its nuclear security objectives.

4. Ineffective Grade F Efforts

CTBT

The failure to ratify the CTBT is perhaps the most glaring shortfall of the administration's nonproliferation efforts. Ratification was a stated objective and the failure to do so was largely due to an inability to reach an accord between the President and Congress—so much so the President opted to not submit the document for approval at all. In some respects the President's decision to pursue other nonproliferation measures was a prudent one. The shrewd expenditure of political capital to see other efforts to fruition necessitated a willingness to avoid submitting the CTBT to congress until ratification became a realistic goal. However, the CTBT was part of the President's overall nonproliferation architecture. His integrative approach appeared to view success as the summation of numerous measures working in concert to form a vast nonproliferation regime. As a result, the failure to ratify the CTBT left the U.S. out of a measure that may have gained valuable political capital. While indirectly effecting nuclear terrorism, inclusion of the U.S. into the CTBT would enhance the United States' negotiating power with other non-signatories who may be proliferation risks themselves.

5. Incomplete Grades

FMCT

Like the CTBT, the FMCT appears to have been identified as a less-than-viable endeavor by the administration. As his efforts moved forward, the President was faced with valuing efforts increasingly based of their apparent return. Also like the CTBT, the FMCT would not reveal itself as such. This is not to say it lacked the potential to reduce nuclear terrorism. In theory, the FMCT closely paralleled the President's material security efforts as captured by the Four-Year Effort. Discord throughout the global community—an inability to agree on key facets of what may become a FMCT—has hindered forward progress.

Unlike the CTBT, however, the FMCT appears to be more of an incomplete effort than a failed one as a result of its ongoing development. The CTBT has been established; therefore U.S. participation lies solely on U.S. shoulders. Conversely, the FMCT remains

a work in progress. The administration has directed subordinate agencies to reinvigorate the FMCT—notably the “work-around” P5 conference proposed by Rose Gottenmoeller. As the administration settled in, however, it became apparent that within the suite of nonproliferation efforts already in motion, the FMCT may not be a viable pursuit. An increasingly partisan Congress did little to support the treaty reworks that may have facilitated development, but blaming Washington would ignore the international friction over what conditions the treaty should include.

E. CONCLUSION

The Obama administration’s nonproliferation efforts have played an important role in reducing the threat of nuclear terrorism to the homeland, but there remains much to be done. Barring the incomplete grades the administration earned a weak B, making significant forward progress, effecting real physical change, and building international will to further institutionalize nuclear security efforts. Shortfalls remain; critics cite significant gaps in the nonproliferation architecture as critical deficits in the administration’s overall efforts.³¹² Furthermore, dwindling budgets threaten to undermine much of the progress made.³¹³ Yet there does not appear to be a camp arguing that the past eight years have been in vain.

The administration’s methods also have significant implications for the future of nonproliferation measures, particularly those geared at combating nuclear terrorism. The first method was the active integration of nonproliferation measures in an attempt to achieve objectives through multiple means. The second was being able to adapt nonproliferation strategy to significant geopolitical shifts, in this case the inability to secure high levels of cooperation with the international community.

³¹² Kenneth N. Luongo, “Endgame for the Nuclear Security Summits,” 10.

³¹³ Bunn, Roth, and Tobey, *Cutting Too Deep*, 13.

1. Next Generation Policy Approach

The Obama administration's integrative nonproliferation efforts have reduced the threat of nuclear terrorism by enhancing the global political-legal regime and strengthening physical nuclear security. Policies that may have been wholly in the realm of arms control or disarmament were tied to the threat of nuclear terrorism—first in rhetoric, then in practice. As an approach to nuclear terrorism, this deliberate system of integration was effective in two important ways.

First, the President's integrative method sought to build a nuclear-security architecture that used complementary capabilities to reinforce other efforts and create redundancies. Reducing weapons, material, and the production of both were pursued as methods of denying both to terrorists. Furthermore, efforts offered complementary qualities in the form of access. The growing framework of treaties and conventions supported by the administration afforded a means of acceptability involving the U.S. in foreign activities. Case in point: the PSI, SLD, and GICNT have often become components of UNSCR 1540 compliance; and the NSS greatly facilitated GTRI and CTR activities abroad. Codifying efforts as counter-terrorism measures, and associating them where possible with other popular initiatives, assisted the administration's aggressive material security efforts. This technique was less successful within the domestic audience.

Second, associating efforts or policies with terrorism was a useful method to mobilize support. In this case, the President desired to engage a range of audiences in his nuclear security efforts—the international community, Congress, and, to a lesser degree the U.S. public. This is not to say that the President disingenuously leveraged the notion of terrorism to advance unrelated objectives. The 2010 NPR identified nuclear terrorism as a top priority of the administration—a distinct paradigm shift from prior NPR's that continued to emphasize cold-war weapons doctrine.³¹⁴

His approach was genuine in that nuclear security is very much a collection of interconnected programs whose contributions to one another may not be immediately

³¹⁴ Department of Defense, *Nuclear Posture Review Report*, i.

noticeable. This does not, however, imply that the President was ignorant of the impact and political value of associating terrorism with the myriad of nonproliferation measures in effect—a technique used less prudently by the media.³¹⁵ As witnessed during the 2010 NPT Review Conference and the Nuclear Security Summits, the global audience was highly receptive to the President’s nuclear-terrorism message.

In spite of the administration’s success, shortfalls remain, particularly in areas of compliance and enforcement. In many cases the burden is a global one, frequently resting on the shoulders of the UN, at least in writing. Diligent compliance with UNSCR 1540 remains spotty, and while the administration’s GTRI, CTR, and SLD efforts have provided means to support implementation, much work remains to be done.³¹⁶ Exacerbated by an apparent downward trend in funding it is possible that progress may halt, or even backslide, in coming years. Yet, for the moment, there has been significant progress. President Obama raised the nonproliferation bar quite high, and with concerted assistance from the international community, it can remain relatively high for the foreseeable future.

2. Remaining Responsive—The Post-Russia Pivot

The importance of international cooperation is why the U.S.-Russian downturn is so troubling. It has had a significantly negative impact on ongoing nonproliferation activities while simultaneously creating conditions for a potentially positive expansion away from a global nonproliferation regime dominated by bilateral programs. Programs like the CTR and SLD were defined by the bipolar-context in which they were created and have faced a massive loss of operability in the face of failed relations.

The administration and the nuclear security industry have, however, remained responsive and began adapting nonproliferation measures to a landscape where Russia is absent. Programs like the CTR have looked to the MENA for work while SLD activities carry on in spite of significant losses. Meanwhile, already multilateral activities like the

³¹⁵ Bridgitte L. Nacos, *Mass-Mediated Terrorism: The Central Role of Media in Terrorism and Counterterrorism* (Lanham, MD: Rowman & Littlefield, 2007), 93.

³¹⁶ Albright, *Peddling Peril*, 249.

GICNT may become a more turbulent forum—as Russia and the U.S. co-chaired the organization. It is highly unlikely the organization will dissolve due mounting friction between each country; however, members may opt to not elect Russia as a co-chair, or even the U.S. for that matter, out of concern U.S.-Russian tensions may undermine the program’s broader pursuits.

The administration’s policy efforts have positively impacted nonproliferation measures and postured the United States well for future dealings. The U.S. has gained credibility among international players and reduced opportunities for Russia to claim abuses by unilateral U.S.-operations.³¹⁷ As U.S.–Russian activities are in the decline, the U.S. is now postured to capitalize on the goodwill earned over the past eight years and continue expanding multilateral initiatives. The United States’ deeper integration into the global legal framework is, therefore, as much a pivot away from bilateral U.S.-Russian programs as it is a pivot away from the practice of bilateral programs themselves. The continuing expansion of Nuclear Security Centers of Excellence offer concrete linkages that stand to reinforce the past eight years of nonproliferation cooperation—the recently opened center in China for example. By growing the number of centers globally, and specifically into weapon states, the post-Russia pivot has an opportunity to manifest more physically and, ideally, more permanently. The IAEA involvement in many of these centers also assists in mitigating any bilateral undertones and weaving them into the growing network of global nonproliferation institutions.

Bilateral nonproliferation programs are unlikely to be discarded entirely, but it does appear multilateral initiatives are increasingly preferred. The administration’s pivot away from Russia and pursuit of this more global dynamic is, therefore, in keeping with the contemporary geopolitical environment.

The Obama administration witnessed the end of the CTR as many practitioners had come to define it for decades. Therefore, the need to promote semi-autonomous initiatives (like the PSI or GICNT) offers more robust opportunities that reduce continuity gaps and avoid unilateral or bilateral dependencies. Nuclear energy continues

³¹⁷ Weiner, *Our Own Worst Enemy*, 300.

to proliferate and with it technology that is of use to would-be nuclear terrorists. The two-decade long focus on Russian facilities and stockpiles is evolving into a global one. President Obama and the array of nuclear-security practitioners have, since 2009, reduced the threat of nuclear terrorism to the homeland. Looking to the future, however, significant challenges remain. Decreasing budgets threaten to halt the momentum gained over the past eight years. Supporting and expanding the nonproliferation architecture that President Obama and his predecessors have built remains a necessary step in the pursuit of a world free of nuclear terrorism.

V. RECOMMENDATIONS

A. INTRODUCTION

The next President, and those nuclear security practitioners that form the current workforce, continued to face a number nonproliferation challenges. While the Obama administration has taken great strides toward enhancing the U.S. and global nonproliferation framework, there remains much to be done. To that end, this chapter includes a brief list of recommendations to the administration following President Obama's.

B. CONTINUE THE INTEGRATIVE APPROACH

Continuing to approach nuclear security and nuclear terrorism as a multifaceted threat is necessary to maintain the breadth of capabilities needed to cope with the full spectrum of issues that constitute the threat. The Obama administration's integrative methodology sought to leverage programs often far removed from what one might consider a direct terrorist threat, such as linking arms control and disarmament to nuclear security and nuclear terrorism. While potentially indirect and hard to treat as a single issue, maintaining this approach can pay dividends over the long term. Reducing the availability of nuclear weapons and nuclear material similarly reduces the threat of theft by terrorists. Building coalitions and collaborative enterprises promotes the sharing of expertise and intelligence. The focus must remain on creating conditions that prohibit the procurement or development of a nuclear weapon capability, first in states and then by terrorists who may gain access to a nation's nuclear assets. Promoting a comprehensive and multifaceted nuclear security architecture can help to ensure that every base is covered.

This approach relies as much on nature of nonproliferation practitioners as the programs themselves. Capitalizing on the second and third order benefits nonproliferation efforts yield can create an expansive and purposefully redundant architecture aimed at impeding weapons and material procurement. Incentivizing this cooperation at the user level remains equally necessary. Creating conditions where practitioners can exchange

information across agencies, and where necessary between nations, is necessary to underpin the administrative framework of a truly integrated nonproliferation architecture.³¹⁸

C. REACH AN ACCORD WITH CONGRESS

The need to realize support from Congress is a frequent and necessary challenge for any administration seeking to enhance the domestic and international nonproliferation architecture. Nuclear security has a long history of bipartisan support and need not be embroiled in political strife. Future administrations will need to develop strategies to overcome Congressional resistance should the trend of hyper partisanship continue. Where executive influence alone fails, Presidents must be willing to reach out to nonproliferation and security practitioners to build support for nonproliferation measures.³¹⁹ I would be prudent for a new President to develop a game plan for engaging the Hill of nuclear security matters and coordinate with majority and minority Hill leaders to facilitate favorable consideration of funding for programs.

Enlisting the aid of security leaders and nonproliferation experts could help to alleviate partisan undertones. The success of nonproliferation measures is often measured over years, and it would bode poorly for any effort if it began with a narrow margin of support. Seeking support from nonproliferation practitioners, in both the government and private sector, would go a long way in helping to illustrate to Congressional leadership the levels of risk associated with failing to fund certain efforts.³²⁰

³¹⁸ Derek W. Lothringer et al., “Countering Weapons of Mass Destruction: A Preliminary Field Study in Improving Collaboration” (master’s thesis, Naval Postgraduate School, 2016), 67, http://calhoun.nps.edu/bitstream/handle/10945/48551/16Mar_Lothringer_McGraw_Rautio_Thaxton.pdf?sequence=1&isAllowed=y.

³¹⁹ Weiner, *Our Own Worst Enemy*, 295.

³²⁰ Lothringer et al., “Countering Weapons of Mass Destruction,” 26.

D. CLARIFY RISK TO DETERMINE APPROPRIATE FUNDING

Developing a specific funding brackets and what level of risk is associated with each could enhance the prioritization of funds; furthermore, it would establish codified levels of risk that policy opponents would be forced to mitigate or accept. Few if any government functions benefit from erratic funding cycles, but nonproliferation measures are acutely affected. A glut of funds may prompt unwise spending on fruitless objectives, while insufficient, unpredictable, stop-and-start funding undermines thoughtful implementation.

Therefore, to effectively develop an enduring nonproliferation framework, the next administration would benefit from less varied funding trends. Ultimately, and somewhat unfortunately, this is a question of establishing a politically viable balance between funding for the nuclear security enterprise and the resulting level of risk – both strongly influenced by executive and Congressional voting cycles.

While it is the job of Congressional representatives to secure funding, nonproliferation practitioners owe them a clear picture of what levels of risk are being accepted at specific levels of funding. Codifying risk at each level would somewhat imprecise as the threat of terrorism must often be gauged on what little intelligence may exist. Yet, threat and risk must be known to those managing funds; they can help to illustrate to Congressional leadership what risk the U.S. would be accepting should a policy or program fail to be provided adequate funds.³²¹ This practice already occurs to a certain extent, however, shifts in funding at the agency level frequently fail to incorporate input on how it may fully influence national security. Establishing a tiered risk-funding pictured for decision makers would, hopefully, enhance clarity on threats to the U.S. and allow leadership to position funds based on an informed sense of risk.

³²¹ Bunn, Roth, and Tobey, *Cutting Too Deep*, 32.

E. PROMOTE INTERNATIONAL STAKEHOLDERS IN NUCLEAR SECURITY

Promoting buy-in from the international community is necessary to develop and maintain an effective global nonproliferation architecture. While some states, such as Japan, South Korea, Pakistan, and India, may have conflicting energy, security, and economic interests that dampen their enthusiasm for enhanced nuclear security measures, others have little to fear from nuclear terrorism and may be more willing to support efforts like UNSCR1540 or SLD.

President Obama's NSS efforts were notably successful in overcoming these complex interests to maintain a very broad international coalition. The nuclear security summits demonstrated U.S. commitment to nonproliferation matters and in many cases, quite literally, put state leaders in the spotlight with President Obama. Promoting the interests of willing stakeholders is the glue that holds the NSS coalition together.

There are a range of methods to promote stakeholders. The NSS provided an effective means of leveraging political will. Combining that will with economic incentives, positive and negative, could go a long way in bolstering nonproliferation measures.

Finally, continuing the Nuclear Security Summit process may be useful option. The momentum develops so far could be perpetuated and channeled to the next set of challenges. The NSS or an equivalent forum is needed to maintain the focus of the global community on the full range of nuclear dangers. Expanding the group could incorporate additional stakeholders and maintain awareness among national decision makers.³²² Building on the success of the NSS would provide opportunities to support the NPT and its Review Conferences, and maintain important elements of the global nonproliferation regime. Even without a follow on NSS, it will be critical to engage the global community in constructive dialogue about nuclear security and its link to combating nuclear terrorism.

³²² Tobey, "Peering Down From the Summit," 16.

F. DEVELOP CTR BEYOND RUSSIA AND SHUTTER OBSOLETE PROGRAMS

Souring of relations with Russia is a setback for U.S. nonproliferation efforts. Deteriorating cooperation and communication has resulted in an increasingly muddled picture of Moscow's nuclear security conditions. One result of this is growing uncertainties about Russia's revived nuclear programs, which will ultimately force U.S. security experts to expend time and resources to supplement data that had formerly been shared by Russia. The collapse of the CTR with Russia decreases mutual transparency and ultimately leads to suspicion about intentions and capabilities. Efforts to restore CTR with Russia should continue.

That being said, efforts to expand CTR activities beyond its bilateral origins have already begun. Threat reduction practitioners, now with decades of experience, can now refocus existing resources once earmarked for Russia toward the MENA and Asia. Nuclear Security Centers of Excellence are a potential boon to future efforts as they represent a regionally based national willingness to incorporate cooperative nonproliferation activities into their government. The center of excellence in China is a particularly important example as it provides a springboard for promoting U.S.-China nuclear security efforts. Furthermore, the Four-Year Effort and the NSS have established momentum that can lend itself to future CTR activities.

The ultimate challenge becomes smartly exploiting years of CTR experience within the U.S. nuclear security enterprise without maintaining expensive functions that may no longer be relevant to current security challenges. Organizational self-interest in perpetuating programs often may claim continued relevance but may promote inefficient activities—gains being far outweighed by cost. Federal decision makers and nuclear security experts must constantly adjust to determine what capabilities may have been uniquely suited for post-Soviet activities, which can translate to current realities, and which merit mothballing until a later date.

G. FINAL WORDS

Maintaining a nonproliferation regime capable of thwarting nuclear terrorism is, ultimately, the product of competing national priorities. Presidential time and effort translates into funding and support—domestically and abroad. Nonproliferation and counterproliferation are cross cutting team sports requiring broad interagency contributions. While all risk cannot be eliminated, preventing nuclear terrorism can be successful with sustained programs that address the multiple parts of the issue. The alternative of focusing on consequence management is not acceptable.

Prioritizing nuclear security remains a necessity if the world hopes to continue enjoying a history free of nuclear terrorism. It remains on the shoulders of the administration, however, to do so smartly and effectively using the lessons learned from its predecessors.

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