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Understanding and Preventing Nuclear Terrorism

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Since the creation of the atomic bomb, government officials, scientists, and concerned citizens have been aware that weapons of mass destruction could fall into the hands of dangerous terrorist groups or rogue regimes.[1] The rise of Al Qaeda and the events of September 11, however, brought the threat of nuclear terrorism into a whole new light for the United States. Suddenly, the detonation of a crude nuclear device in a major American metropolitan area no longer seemed like something out of a science fiction movie. Indeed, as President-Elect Barack Obama said during the 2008 presidential campaign, nuclear terrorism is "the gravest danger we face."[2]

A top priority for nuclear weapons experts is North Korea and Iran. There is no doubt that the development of nuclear programs which may lead to weapons capabilities in these countries is cause for concern. There is little reason to believe, however, that if Pyongyang and Tehran did manage to obtain deliverable nuclear weapons, they would ever be foolhardy enough to use them against the United States. American retaliation against a nuclear first strike from North Korea or Iran would be swift and massive, and the threat of this retaliation deters either country from launching an attack against American targets.

It also is not very likely that North Korea, Iran, or any country would knowingly provide a terrorist organization with nuclear weapons. Not only is it irrational for a nation to hand over its most powerful weapon to terrorists over which it has no definitive control, but the weapons themselves could likely be traced back to their country of origin. Again, retaliation against the supplying state would be devastating and anticipation of this fate deters countries from giving nuclear weapons to terrorists.[3]

Given the odds against a nation state either launching a nuclear attack against the United States or supplying nuclear weapons to a terrorist group, the greatest threat today is that a non-state actor will steal a nuclear weapon or the fissile materials needed to make one. Al

Qaeda already has pledged to carry out an "American Hiroshima."[4] Nuclear fissile materials that are either poorly guarded or unaccounted for, known in popular parlance as "loose nukes," are dangerous and profitable sources for terrorist theft. The number of reported nuclear thefts is "disturbingly high" according to International Atomic Energy Agency (IAEA) Chief Mohamed ElBaradei.[5] What is perhaps even more disturbing is that stolen materials are rarely noticed to be missing before they are seized from would-be thieves.[6]

In his 2008 annual report to the U.N. General Assembly, ElBaradei said there were nearly 250 reported thefts of nuclear or radioactive material worldwide during the twelve month period ending in June 2008.[7] In 2006, a Russian citizen was arrested in Georgia with nearly 100 grams of highly enriched uranium (HEU). The theft was never detected and the amount of HEU carried by the thief was never reported missing.[8] Pakistan's current stockpile of 60 nuclear weapons and related facilities is considered to be at risk given the presence of Al Qaeda operatives in Pakistan and the country's problematic nuclear security system.[9] Even in the case of "secured" HEU and plutonium, the possibility of theft is not unimaginable. In 2007, a gang of four armed men attacked, entered, and spent 45 minutes inside a nuclear facility in Pelindaba, South Africa without being captured by security forces. The details of the break-in and what was taken (if anything) have yet to be released by the South African government.[10]

A multitude of studies have been conducted on the statistical probability that Al Qaeda will obtain and detonate a WMD within the United States. The results range anywhere from one in a million to a 50% chance in the next 10 years.[11] Specific estimates aside, a terrorist group obtaining a nuclear capability is certainly not outside the realm of possibilities.

It is not the odds but the consequences of such an attack that propel nuclear terrorism to the top of the U.S. national security agenda. A March 2003 report by Harvard University's Project on Managing the Atom found that if a ten-kiloton nuclear weapon, approximately the size of the bomb dropped on Hiroshima, were detonated at Manhattan's Grand Central Station in New York, it would instantly kill over 500,000 people, injure hundreds of thousands, and cause over $1 trillion in direct damages.[12]

WHAT IS BEING DONE?

As is true in sports, the best offense is a strong defense. U.S. efforts to combat nuclear terrorism have grown steadily over the years. For example, in response to the large nuclear arsenal remaining in Russia following the Cold War, Congress established the Cooperative Threat Reduction (CTR) program, popularly known as "Nunn-Lugar" after the two senators – Sam Nunn (D-GA) and Richard Lugar (R-IN) – who shepherded it through Washington. CTR is an initiative to secure and dismantle nuclear and other weapons in Russia and other states of the former Soviet Union. Other federal agencies within the U.S. government have also taken important steps to create programs targeting the sources of nuclear terrorism, such as the Department of Energy's Global Threat Reduction Initiative, the Department of State's Global Initiative to Combat Nuclear

Terrorism, and the National Nuclear Security Administration's Office of Defense Nuclear Nonproliferation.

Despite these efforts, the United States remains dangerously vulnerable. In 2004, the 9/11 Commission called on the President and Congress to exercise "maximum effort" against WMD proliferation and terrorism. In 2005, the 9/11 Public Discourse Project assessed the progress and efforts of the U.S. government in carrying out the recommendations of the 9/11 Commission. The Project found the government had made "insufficient progress" and assigned it a 'D' grade overall. Seven years after 9/11, the Partnership for a Secure America issued a similar report card in 2008 giving the U.S. government a 'C' grade.[13]

POLICY RECOMMENDATIONS

If the United States and countries around the world are serious about preventing a nuclear attack by a terrorist group, efforts to contain the threat at its source need serious attention. According to the Partnership for a Secure America, the biggest problem is the lack of coordination on counter-nuclear terrorism efforts across federal agencies. Congress tried to remedy this shortcoming in 2007 with H.R. 1, the 9/11 Commission Act, which created a White House Coordinator for the Prevention of Weapons of Mass Destruction Proliferation and Terrorism. Unfortunately, the Bush administration chose to ignore the law and never filled the position.[14] Failures in coordination are similarly reflected at the international level, where bilateral and multilateral engagement to prevent nuclear terrorism is equally fragmented.

Below are key recommendations the U.S. government ought to incorporate into a comprehensive strategy to prevent nuclear terrorism:

Reorganize the executive branch to better meet the threat of nuclear terrorism.

President-Elect Obama should move immediately to correct President Bush's mistake by filling the position of Coordinator for the Prevention of Weapons of Mass Destruction Proliferation and Terrorism. Creating a separate agency for arms control and nonproliferation, either inside or outside the State Department, modeled on the previous Arms Control and Disarmament Agency would further enhance the government's institutional ability to prevent nuclear terrorism. If creating this separate agency is deemed too radical, separate bureaus could be created within the State Department to focus solely on arms control and nonproliferation. Moreover, steps should be taken to recruit and retain the scientific, technical, and policy professionals needed to run a robust governmental effort to prevent a nuclear attack by terrorists. This may require some additional hiring incentives and bonuses.[15]

Create international standards for securing HEU, plutonium, and fissile materials.

Protecting nuclear weapons and fissile material at their source is the first line of defense against terrorists seeking "loose nukes." One place to start would be to strengthen U.N. Security Council Resolution 1540, a resolution adopted in 2004 that addresses the risk of

non-state groups obtaining WMDs. By strengthening the language, setting specific guidelines for states' obligations (including strict measures for securing fissile material), and creating an enforcement mechanism, some of Resolution 1540's vagaries could be eliminated.[16]

Strengthen bilateral and multilateral agreements on the prevention of nuclear terrorism.

The nature and threat of nuclear terrorism is international; thus, initiatives which seek to prevent nuclear-capable terrorist groups must be international and draw from the combined resources of the global community. There are two methods for marshaling the international community's commitment to prevent nuclear terrorism: multilateral treaties (such as Resolution 1540) and bilateral agreements. On the latter, there are a few key places where the United States should focus:

- **Re-connect with Russia on nuclear arms agreements.** The United States and Russia together account for nearly 80% of the world's nuclear weapons-usable materials.[17] It is imperative that the two countries realign on nonproliferation and counter-nuclear terrorism measures. The first action ought to be the renewal of the Strategic Arms Reduction Treaty (START) before its expiration in December 2009.[18]
- **Engage emerging nuclear states such as Pakistan and India on securing fissile material and other nonproliferation initiatives.** The most pressing threat of a regional arms race lies in South Asia between Pakistan and India. Not only is it necessary for the United States to engage both countries on nuclear nonproliferation initiatives, but the United States will inevitably need to tread carefully during implementation of the U.S.-India nuclear deal, which presents a tremendous challenge to global nonproliferation efforts.

Invest in technical and analytic tools to detect proliferation activities, networks, and materials.

This includes creating more stringent standards for security on the borders where a nuclear weapon could be smuggled into the United States; improving intelligence networks that can identify terrorist work on nuclear weapons; and developing technological tools that can detect fissile material.

Lead by example by actively working to reduce the U.S. nuclear weapons stockpile.

No matter how safeguarded a nuclear weapons program is, and no matter how secure weapons-grade fissile material may be, the fact remains that so long as nuclear weapons and materials exist, the threat of nuclear terrorism will remain. As Harvard University nuclear weapons expert Matthew Bunn stated, "…convincing foreign countries to reduce and consolidate nuclear stockpiles [and] put stringent nuclear security measures in place…will be far more difficult if we are not doing the same at home."[19] With President-Elect Obama having already dedicated himself to "work for a world in which the roles

and risks of nuclear weapons can be reduced and ultimately eliminated," the United States could demonstrate its seriousness about reducing nuclear dangers early on in an Obama administration by ratifying the Comprehensive Test Ban Treat (CTBT). It will take much effort for President-Elect Obama to achieve his oft-stated goal of securing "all nuclear weapons and material at vulnerable sites within four years – the most effective way to prevent terrorists from acquiring a bomb," but the CTBT would be a good place to start.[20]

NOTES

1. Brian Michael Jenkins, *Will Terrorists Go Nuclear?* (New York: Prometheus Books, 2008), 27.

2. Alexander Mooney, "Obama Says Time to Rid the World of Nuclear Weapons," *CNN* (July 16, 2008).

3. Ashton Carter, Michael May, and William Perry, "The Day After: Action Following a Nuclear Blast in a U.S. City," *The Washington Quarterly* 30:4 (Autumn 2007), 19-32.

4. Ibid.

5. Neil Macfarquhar, "Rate of Nuclear Thefts 'Disturbingly High,' Monitoring Chief Says," *New York Times* (October 27, 2008).

6. See Matthew Bunn, "The Risk of Nuclear Terrorism – And Next Steps to Reduce the Danger," testimony before the Senate Committee on Homeland Security and Governmental Affairs (April 2, 2008).

7. Macfarquhar, "Rate of Nuclear Thefts 'Disturbingly High,' Monitoring Chief Says."

8. Bunn, "The Risk of Nuclear Terrorism – And Next Steps to Reduce the Danger."

9. For information on Pakistan's nuclear weapons stockpile, see Robert Norris and Hans Kristensen, "Pakistan's Nuclear Forces, 2007," *Bulletin of Atomic Scientists* (May/June 2007), 71-73. For information on Pakistan's nuclear weapons security system, see Max Postman, "History, Design, and Prospects for Improving Pakistan's Nuclear Personnel Reliability Program (PRP)," *Center for Arms Control and Non-Proliferation* (March 5, 2008).

10. Bunn, "The Risk of Nuclear Terrorism – And Next Steps to Reduce the Danger."

11. See ibid., as well as John Mueller, "The Atomic Terrorist: Assessing the Likelihood," *Ohio State University Department of Political Science* (January 1, 2008).

12. Bunn, Anthony Wier, and John Holdren, "Controlling Nuclear Warheads and Materials: A Report Card and Action Plan," *Belfer Center for Science and International Affairs, Harvard University* (March 2003).

13. Partnership for a Secure America, *WMD Report Card: Evaluating U.S. Policies to Prevent Nuclear, Chemical, & Biological Terrorism Since 2005* (August 2008).

14. See Kingston Reif, "Time to Name a Coordinator for WMD Proliferation," *Center for Arms Control and Non-Proliferation* (June 26, 2008).

15. For more information on reorganizing the U.S. government to deal with arms control, see ibid., "Fact Sheet on Strengthening Arms Control and Nonproliferation," *Center for Arms Control and Non-Proliferation* (July 3, 2008).

16. For a thoughtful critique of Resolution 1540, see Wade Boese, "Implications of UN Security Council Resolution 1540," presentation to the Institute of Nuclear Materials Management panel discussion (March 15, 2005).

17. Bunn, "The Risk of Nuclear Terrorism – And Next Steps to Reduce the Danger."

18. For more information on START renewal, see Daryl Kimball, "START Anew: The Future of the Strategic Arms Reduction Treaty," presentation at the Carnegie Moscow Center (May 12, 2008).

19. Bunn, "The Risk of Nuclear Terrorism – And Next Steps to Reduce the Danger."

20. Barack Obama quotes taken from Council for a Livable World, *2008 Presidential Candidates' Responses to Seven Key National Security Questions* (August 2007).