

Physics/Global Studies 280

Module 9: The Future

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Some recommendations —

- Securing the Bomb 2008 (by Matthew Bunn, for the Nuclear Threat Initiative)
- Unilateral U.S. actions (Union of Concerned Scientists)
- President Obama's approach (outlined in his Prague speech)

See the reading assignments on these topics

Securing the Bomb

Preventing nuclear terrorism —

- Achieve effective and lasting nuclear security
- In addition to nuclear security
- Leadership and commitment
- Putting the United States' own house in order

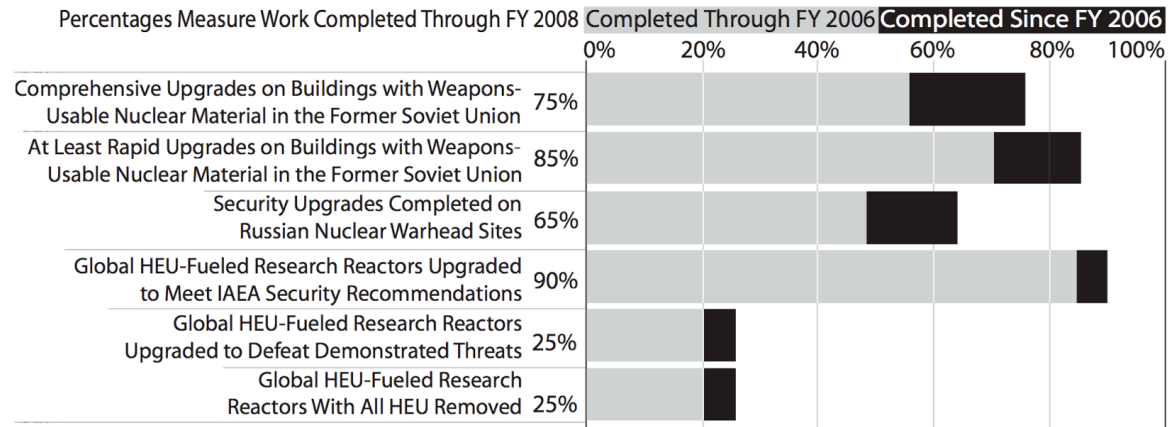
Securing the Bomb

Some threats —

- Insecurity of Pakistan's nuclear stockpile
- Serious security weaknesses in Russia
- 130 research reactors around the world still use HEU
- The Pelindaba site in South Africa has hundreds of kilograms of *weapons-grade uranium* and was broken into in 2007 by a group of armed attackers
- The United States "lost" six nuclear weapons

Securing the Bomb

Figure ES-5: Progress of U.S.-Funded Programs to Secure Nuclear Stockpiles



Source: Author's estimates. (See Chapter 3 for details).

Securing the Bomb

Achieving effective and lasting nuclear security —

- Launch a fast-paced global security campaign
- Seek to ensure that *all* nuclear weapons, plutonium, and highly enriched uranium are secure
- Expand and accelerate efforts to consolidate nuclear stockpiles
- Gain agreement on effective global nuclear security standards
- Build sustainability and a security culture

Securing the Bomb

In addition to nuclear security —

- Disrupt: focus counter-terrorism efforts on nuclear risks
- Interdict: counter the nuclear black market
- Prevent and deter: reduce the risk of nuclear transfers to terrorists by states
- Respond: global nuclear emergency response
- Impede: impede recruitment of nuclear personnel by terrorists
- Reduce: reduce stockpiles and end production
- Monitor: monitor nuclear stockpiles and reductions

Securing the Bomb

Leadership and commitment —

- Build the sense of urgency and commitment worldwide
- Put someone in charge
- Develop a comprehensive, prioritized plan
- Assign adequate resources
- Provide information and analysis to support policy
- Reduce: reduce stockpiles and end production
- Monitor: monitor nuclear stockpiles and reductions

Securing the Bomb

Put the United States' own house in order —

- Put more stringent nuclear security measures in place
- Convert U.S. research reactors to LEU
- Upgrade security on HEU research reactors
- Phase out HEU research reactor security exemptions
- Reverse the rule exempting HEU from almost all security requirements if it is radioactive enough to produce a dose rate of more than 1 Sv/hour at a distance of 1 m
- Convert medical isotope production using HEU to use LEU
- Increase preparations for nuclear mass casualties

Possible Unilateral U.S. Actions

10 Steps the United States Could Take
Without Waiting for Others

Possible Unilateral U.S. Actions

The following recommendations were authored by analysts from the Federation of American Scientists (FAS), Natural Resources Defense Council (NRDC), Union of Concerned Scientists (UCS), and independent experts with long experience in nuclear weapons policy issues.

For further information, go to: http://www.ucsusa.org/global_security/nuclear_weapons/trueseconomy.html

The greatest nuclear dangers to the United States are an accidental, unauthorized or mistaken Russian nuclear attack, the spread of nuclear weapons to more nations, and the acquisition of nuclear materials by terrorists. U.S. nuclear weapons policy fails to adequately address these risks and too often exacerbates them.

By taking 10 unilateral steps, the next president would bring U.S. nuclear weapons policy into line with today's political realities, and demonstrate to the rest of the world that the United States is serious about addressing what remains one of the gravest threats to human civilization.

Possible Unilateral U.S. Actions

1. Declare that the sole purpose of U.S. nuclear weapons is to deter and, if necessary, respond to the use of nuclear weapons by another country. Making it clear that the United States will not use nuclear weapons first would reduce the incentive for other nations to acquire these weapons to deter a potential U.S. first strike.

2. Reject rapid-launch options by changing U.S. deployment practices to allow the launch of nuclear forces within days instead of minutes. Increasing the amount of time required to launch U.S. weapons would ease Russian concerns about the vulnerability of its nuclear weapons and in turn give it the incentive to take its weapons off alert, reducing the risk of an accidental or unauthorized Russian launch on the United States.

3. Eliminate preset targeting plans, and replace them with the capability to promptly develop a response tailored to the situation if nuclear weapons are used against the United States, its armed forces, or its allies.

Possible Unilateral U.S. Actions

4. Promptly and unilaterally reduce the U.S. nuclear arsenal to no more than 1,000 warheads, including deployed and reserve warheads. There is no plausible threat that justifies maintaining more than a few hundred survivable nuclear weapons, and no reason to link the size of U.S. nuclear forces to those of any other country. The United States would declare all warheads above this level to be in excess of its military needs, move them into storage, begin dismantling them in a manner transparent to the international community, and begin disposing—under international safeguards—of all plutonium and highly enriched uranium beyond that required to maintain these 1,000 warheads. By making the end point of this dismantlement process dependent on Russia's response, the United States would encourage Russia to reciprocate.

5. Halt all programs for developing and deploying new nuclear weapons, including the proposed Reliable Replacement Warhead.

6. Promptly and unilaterally retire all U.S. nonstrategic nuclear weapons, dismantling them in a transparent manner, and take steps to induce Russia to do the same.

Possible Unilateral U.S. Actions

7. Announce a U.S. commitment to reducing its number of nuclear weapons further, on a negotiated and verified bilateral or multilateral basis.

8. Commit to not resume nuclear testing, and work with the Senate to ratify the Comprehensive Test Ban Treaty.

9. Halt further deployment of the Ground-Based Missile Defense system, and drop any plans for space-based missile defense. The deployment of a U.S. missile defense system that Russia or China believed could intercept a significant portion of its survivable long-range missile forces would be an obstacle to deep nuclear cuts. A U.S. missile defense system could also trigger reactions by these nations that would result in a net decrease in U.S. security.

10. Reaffirm the U.S. commitment to pursue nuclear disarmament, and present a specific plan for moving toward that goal, in recognition of the fact that a universal and verifiable prohibition on nuclear weapons would enhance both national and international security.

President Obama's Approach

His Vision and Promised Actions

President Obama's Approach

In his April 2009 speech in Prague (see the assigned reading), President Barack Obama said:

*“As the only nuclear power to have used a nuclear weapon, the United States has a moral responsibility to act. We cannot succeed in this endeavor alone, but we can lead it, we can start it ... **I state clearly and with conviction America's commitment to seek the peace and security of a world without nuclear weapons.**”*

President Obama's Approach

President Obama concluded by saying:

"Just as we stood for freedom in the 20th century, we must stand together for the right of people everywhere to live free from fear in the 21st century."

President Obama's Approach

President Obama outlined a plan that reverses the Bush administration's policy, which made having, threatening to use, and using nuclear weapons a central tenet of American national security policy. This policy would not only have preserved the thousands of nuclear warheads still in existence, but would have built a new generation of nuclear weapons.

In 2009, President Obama proposed seven specific steps toward eliminating nuclear weapons:

- A new treaty with Russia to reduce nuclear warheads and stockpiles, achieved with the now-ratified New START treaty, and then to move to further cuts with the other nuclear powers.

President Obama's Approach

- Hosting a Global Summit on Nuclear Security, achieved in 2010
- Strengthening the Nuclear Non-Proliferation Treaty, achieved in part by actions at the NPT Five-Year Review Conference in 2010
- To “immediately and aggressively” pursue ratification of a Comprehensive Nuclear Test Ban Treaty
- Ending the production of fissile materials that can be used in nuclear weapons
- Expanding international inspections to detect treaty violations
- Securing all vulnerable nuclear material around the world within four years

Physics 280: The Future

What will you do to reduce the threat of nuclear weapons?