Securing all nuclear stockpiles in four years – what's required?

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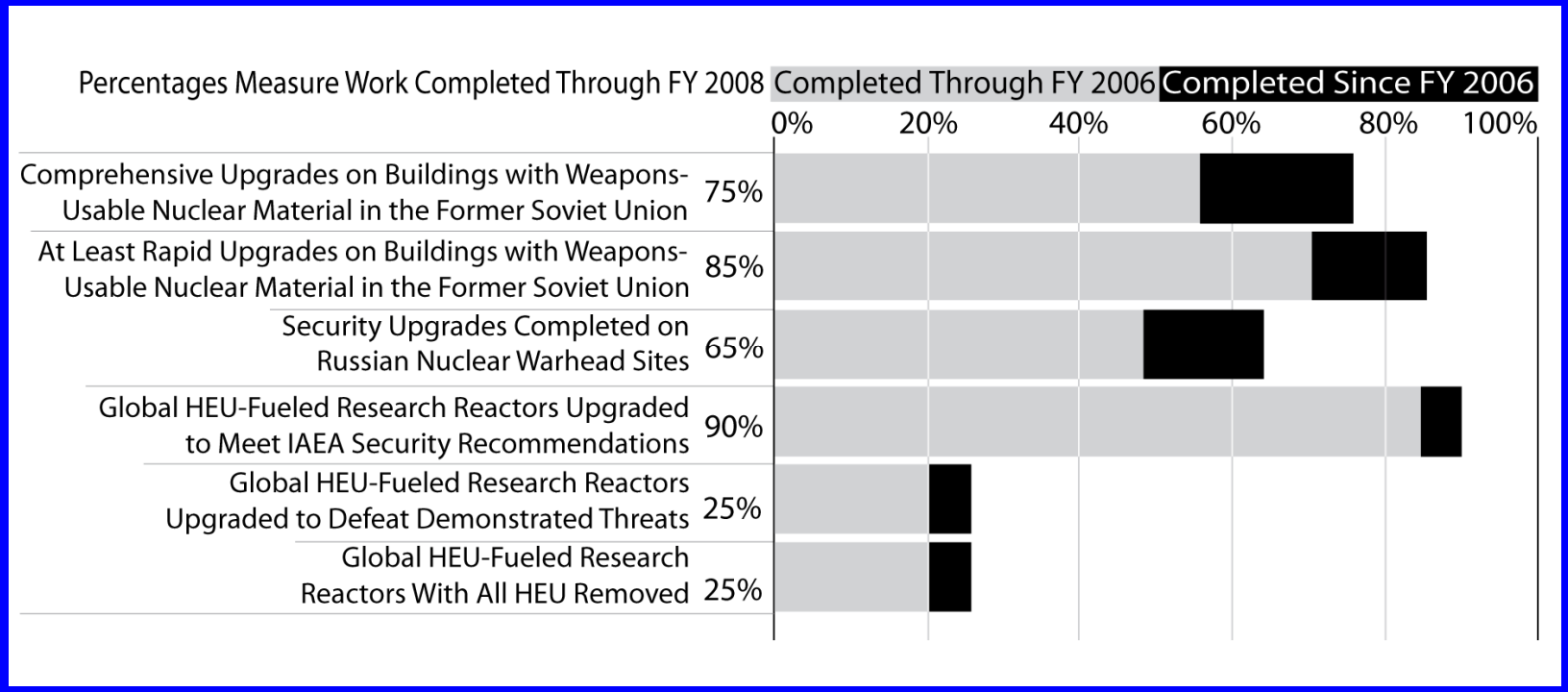
What should the mission be?

- Achieve effective and lasting security for all nuclear weapons and stocks of plutonium and HEU worldwide within four years – while consolidating to the minimum number of locations
  - Effective = provides high-confidence protection against demonstrated terrorist and criminal capabilities
    - » Not only installed systems but effective security culture
  - Lasting = countries can and will sustain effective security with their own resources (and have effectively enforced regulations in place that require the necessary measures to be maintained)
  - All = not just in Russia and the former Soviet Union, not just in developing countries, but in all countries – global problem, and wealthy developed countries also an issue
  - Consolidating = reducing number of weapons and materials sites wherever possible, especially removing material from the most vulnerable, difficult-to-defend sites (such as civilian research reactors)

Progress of U.S.-funded programs to secure nuclear stockpiles through FY08



Source: Author's estimates, described in Securing the Bomb 2008

What's required?

- Sustained White House leadership to overcome obstacles
  - Complacency – many policymakers, nuclear managers do not believe nuclear terrorism is a realistic threat
  - Secrecy and sovereignty
  - Political disputes
  - Bureaucratic obstacles
- Comprehensive plan
  - Assign responsibilities
  - Match resources to objectives
  - Indicators to assess progress
  - Flexibility to close gaps, seize opportunities
- Adequate resources
  - Both money and people

Leadership is more important than money – but more money will be needed if obstacles can be overcome

Belief in the threat – the key to success

- Effective and lasting nuclear security worldwide will not be achieved unless key policymakers and nuclear managers around the world come to believe nuclear terrorism is a real threat to *their* countries' security, worthy of investing their time and resources to address it
- Steps to convince states this is a real and urgent threat:
  - Intelligence-agency discussions – most states rely on their intelligence agencies to assess key security threats
  - Joint threat briefings – by their experts and our experts, together
  - Nuclear terrorism exercises and simulations
  - "Red team" tests of nuclear security effectiveness
  - Fast-paced nuclear security reviews – by teams trusted by the leadership of each country
  - Shared databases of real incidents related to nuclear security, capabilities and tactics thieves and terrorists have used, lessons learned

Goal/Program		FY08 Estimated	FY09 Request	FY09 Approp.	Change from FY08		Change from FY09 Request	
Total, Improving Controls on Nuclear Weapons, Material, and Expertise		**$1,324**	**$1,083**	**$1,235**	**-$89**	**-7%**	**+152**	**+14%**
Securing Nuclear Warheads and Materials		**639**	**506**	**669**	**+30**	**+5%**	**+163**	**+32%**
Material Protection, Control, & Accounting (excl. SLD)	Energy	358	217	202	-156	-44%	-15	-7%
Nuclear Weapons Storage Security - Russia	Defense	46	24	24	-22	-47%	0	0%
Global Threat Reduction Initiative	Energy	193	220	395	+202	+104%	+175	+80%
Nuclear Weapons Transportation Security - Russia	Defense	38	41	41	+3	+9%	0	0%
International Nuclear Security	Energy	5	5	5	0	0%	0	0%
Interdicting Nuclear Smuggling		**385**	**315**	**311**	**-74**	**-19%**	**-4**	**-1%**
Second Line of Defense (part of MPC&A budget line)	Energy	267	213	198	-69	-26%	-15	-7%
Export Control and Related Border Security Assistance	State	46	41	44	-2	-4%	+3	+7%
WMD Proliferation Prevention	Defense	58	50	59	+1	+2%	+9	+17%
International Counterproliferation [1]	Defense	14	10	10	-4	-30%	0	0%
Stabilizing Employment for Nuclear Personnel		**92**	**91**	**84**	**-8**	**-9%**	**-7**	**-8%**
Global Threat Reduction Program [2]	State	57	64	61	+4	+7%	-3	-5%
Global Initiatives for Proliferation Prevention	Energy	31	24	19	-12	-39%	-5	-20%
Civilian Research and Development Foundation [3]	State	5	4	4	-1	-13%	0	+0%
Monitoring Stockpiles and Reductions		**28**	**29**	**29**	**+1**	**+3%**	**0**	**0%**
HEU Transparency Implementation	Energy	14	15	15	+1	+4%	0	0%
Warhead and Fissile Material Transparency	Energy	14	14	14	0	0%	0	0%
Ending Further Production		**180**	**141**	**141**	**-39**	**-22%**	**0**	**0%**
Elimination of Weapons Grade Plutonium Production	Energy	180	141	141	-39	-22%	0	0%
Reducing Excess Stockpiles		**0**	**1**	**1**	**+1**		**0**	
Russian Plutonium Disposition	Energy	0	1	1	+1		0	

“Steady as you go” budgets will not be enough

- FY2010 request prepared before four-year nuclear security plan could be fleshed out – clearly insufficient
- Achieving the four-year goal will require increased effort:
  - Security upgrades at more sites in more countries
  - Expanded efforts to strengthen security regulation, security culture
  - Removing a wider range of materials from a wider range of facilities
  - *Incentives* to convince states and operators to give up their material
  - Expansion to shut-down of underutilized research reactors as a complement to current focus on conversion
- *But*, the United States should not be paying for upgrades everywhere – in countries like Japan or Belgium, the focus must be on convincing them to upgrade security themselves

Providing the resources needed

- Nuclear security is <u>affordable</u>: large reduction in nuclear terrorism risk can be purchased for ~1-2% of one year's defense budget, spread over several years
- Congress should ask the administration for an assessment of total funds required, by year, to meet the four-year goal – then increase current budget request to match
- Because unexpected opportunities arise, difficult-to-plan incentives are often required, Congress should provide flexible pool of ~$500 million to be drawn on as needed

Given the high stakes and modest costs, Congress and the administration must act to ensure that this effort is not slowed by lack of money

Other key areas for resources

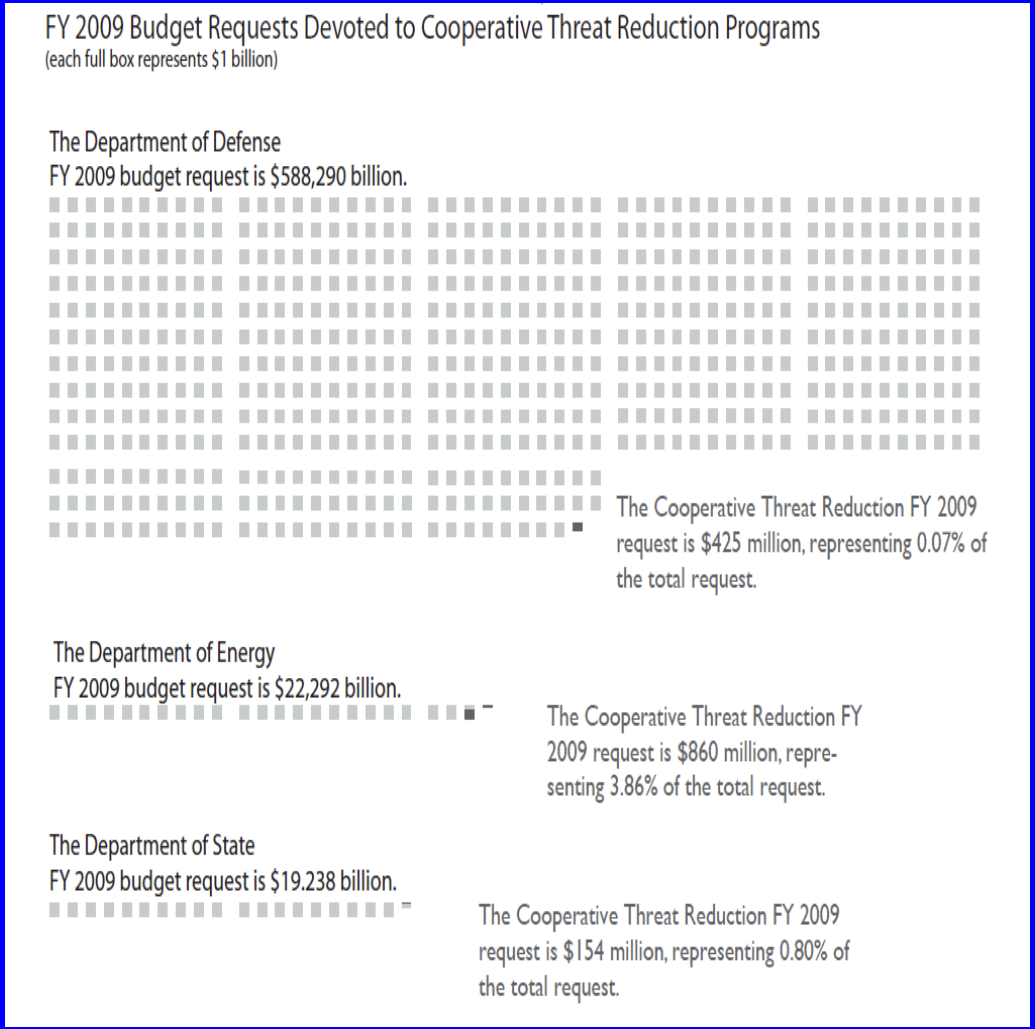
- Helping states implement effective controls required by UNSC 1540
  - Expanded programs to strengthen criminal laws, upgrade export controls, border controls, transshipment controls in many countries
  - Modify mandate for 100% scanning of containers into systems-level approach – with "red teaming" to probe vulnerabilities – to make it as difficult as we cost-effectively can to get nuclear weapons and materials into United States by *any* routes
  - Intelligence support – particularly understanding security arrangements, insider and outsider threats, for nuclear stockpiles around the world
  - Fund non-government analysis – small investments can lead to large returns in improved program effectiveness

Only small fraction of U.S. nuclear spending goes to prevention

- Carnegie study: *Nuclear Security Spending: Assessing Costs, Examining Priorities*
- ~$52 B in total U.S. nuclear spending in 2008
- ~10% for all programs related to preventing the spread of nuclear weapons to hostile states or terrorist groups

Prevention spending can be increased substantially without affecting overall expenditures significantly

Cooperative threat reduction is a tiny portion of overall spending



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The challenge

- Lugar Doctrine: war on terrorism will not be won until every nuclear bomb and cache of bomb material everywhere in the world is secure and accounted for to stringent and demonstrable standards

On the day after a nuclear terrorist attack, what would we wish we had done to prevent it?

Why aren't we doing it now?

For further reading…

- A major web section we maintain for the Nuclear Threat Initiative, *Securing the Bomb:*
  - http://www.nti.org/securingthebomb
- Includes hundreds of pages of analysis, links, and databases, and our most recent reports:
  - *Securing the Bomb 2008* (November 2008)
  - "Preventing Nuclear Terrorism: An Agenda for the Next President" (November 2008)
  - *Securing the Bomb 2007* (September 2007)
  - *Funding for U.S. Efforts to Improve Controls Over Nuclear Weapons, Materials, and Expertise Overseas: Recent Developments and Trends* (February 2007)
- *For regular e-mail updates from Managing the Atom, write to* atom@harvard.edu

Backup slides if needed…

Some opportunities for Congress

- Establish new incentives to move away from use of potential bomb material
  - E.g., establish new user fee for all medical isotopes made from HEU – creates market incentive to move to non-HEU production
- Mandating launch of particular new initiatives
  - E.g., U.S.-Russian reciprocal initiative—modeled in part on Bush-Gorbachev 1991 initiatives—to secure, monitor, dismantle 1000s of the most dangerous warheads (esp. tactical weapons without modern electronic locks)
- Mandating priority for intelligence support to reducing nuclear terrorism risks
  - E.g., collecting information on security conditions, terrorist and criminal activity, staff pay, morale, corruption at sites with weapons-usable materials – "how much do the people at this research reactor get paid? Is there a lot of organized crime there?"

More opportunities for Congress (II)…

- Steps beyond nuclear security
  - Modify mandate for 100% scanning of containers into systems-level approach – with "red teaming" to probe vulnerabilities – to make it as difficult as we cost-effectively can to get nuclear weapons and materials into United States by *any* routes
  - Authorize broader approaches to interdicting nuclear smuggling worldwide – increased penalties, expanded police and intell. coop.
  - Support broader counter-terrorism approaches focused on making it more difficult to get necessary money, people without detection
  - Beef up nuclear forensics efforts
- Getting the United States' own house in order—e.g., requiring effective security for U.S. HEU-fueled reactors, providing funding to convert them
- Funding non-government analysis – small investments can strengthen these efforts substantially