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GLOBAL SECURITY

LEADING THE WORLD TO A SAFER FUTURE

**Building a Next Generation
Nuclear Material Security Framework**

Managing the Atom Program
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21st Century Nuclear Challenges

- Emerging nuclear weapons states
 - North Korea
 - Iran
- Non-state actors
 - Acquisition or theft of nuclear weapons or materials
- Security of potential, existing, and growing stockpiles
 - Russia/FSU
 - South Asia
 - Asia
 - Middle East
- Superpower nuclear arsenals
 - Not reducing adequately
 - Remain on high alert status





The Evolving Nonproliferation Regime

- Governments and intergovernmental bodies can no longer adequately counter the 21st century's proliferation threats.
- Traditional military, diplomatic and intelligence tools remain vital - BUT, today's proliferation dangers transcend these tools' ability to manage them.
- Economic globalization has decreased the authority and control of national governments and international institutions – This is a very important reality we have not adequately accounted for in combating WMD proliferation.
- **First Evolution** - regime expanded beyond treaties and formal agreements and included new ad-hoc mechanisms.
- Important post-Cold War developments - 1991 CTR , 2002 G-8 Global Partnership, 2003 PSI, 2006 GICNT
- CTR and GP Focus – supplement formal treaties and agreements:
 - Eliminating nuclear, chemical and biological stockpiles and delivery systems
 - Protecting and removing nuclear weapons-usable materials
 - Operating on partnership and cooperation; are flexible and effective
 - Key actors DOD, DOE, State Dept. and 21 GP donor nations & EU
- These programs have achieved success that would not have been otherwise attainable under the treaty-based regime.
- However, the ad hoc mechanisms have not been granted broad legitimacy by the international community.
- Most of the programs comprising the threat reduction spectrum are scheduled to wind down in the 2008-2012 period.
- **Second Evolution** - These valuable mechanisms to prevent proliferation should be extended and redirected to focus globally, fused with the core treaties and agreements, and supplemented with new initiatives to form a flexible, effective, and fully legitimized next generation regime.





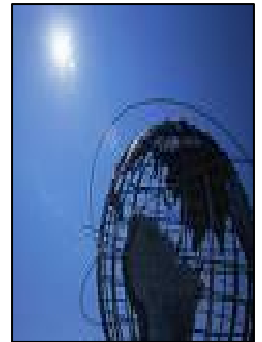
The Existing Nuclear Material Security Structure

- **Domestic Safeguards, Security and Regulations**
 - Each nation responsible for protecting its own material
- **IAEA Nuclear Security Recommendations**
 - Non-binding, but widely utilized, guidance on nuclear material and facility security
- **Convention on the Physical Protection of Nuclear Materials (CPPNM)**
 - Agreement (1970) requiring appropriate measures to protect civilian nuclear materials while in international transport and criminalizing their theft and misuse
 - **2005 Amendment** to the CPPNM requires enforcement of a physical protection regime for nuclear material not in transport - has not entered into force because not enough parties have ratified it (need 2/3 of parties)
- **International Convention for the Suppression of Acts of Nuclear Terrorism**
 - Agreement (EIF 2007) that focuses on criminal offenses related to nuclear terrorism
- **UNSCR 1373 and 1540, and 1887**
 - Resolution **1373** (2001): take steps to combat terrorism
 - Resolution **1540** (2004): requires the enactment of strict national export controls and security over all sensitive materials
 - Resolution **1887** (2009): reaffirms the WMD threat to global security and actions to address the threat
- **DoD Cooperative Threat Reduction (CTR) & Related NNSA, and State Programs**
 - A suite of programs designed to address the threat of vulnerable WMD materials; gradually evolving from a primarily Russia/FSU initiative to a global focus
- **G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (Global Partnership or GP)**
 - Created by the G8 (2002) to address nonproliferation, disarmament and nuclear safety issues in the FSU by 2012; mandate grew to address global threats in 2008
- **Global Initiative to Combat Nuclear Terrorism (GICNT)**
 - U.S.-Russian initiative (2006) of 75 partners that engages in a variety of activities aimed at preventing nuclear terrorism
- **Proliferation Security Initiative (PSI)**
 - U.S.-led ad hoc initiative (2003) of over 90 states focused on interdicting WMDs



Need for a Next Generation Nuclear Material Security Framework

- Right now – many disconnected components, compartmentalized knowledge, limited cooperation and partnership, and no cohesive and integrated driving force for the material security agenda.
- Taking a lesson from the Private Sector – “The Big Shift”
 - Ad hoc knowledge flows and networks are the future because they are far more effective and creative in addressing dynamic challenges than traditional approaches that protect information and limit partners. (Deloitte Center for the Edge, “The Shift Index”)
- A next generation framework is needed that emphasizes cooperation and flexibility; incorporates existing elements; includes new initiatives; and opens the flow of information.
- Should be built upon:
 - Forging a cohesion and equal international legitimacy among the traditional agreements and newer ad-hoc nonproliferation programs.
 - Willingness to accept creative new ideas and challenge existing limits.
 - Integrating market-derived mechanisms, lessons learned, trends, and analysis to address and manage proliferation challenges.
 - Establishing new partnerships with a wider pool of stakeholders that should be engaged in nonproliferation decision making and response.
- The key to success is to integrate all necessary tools into a comprehensive, flexible, legitimate and globally-focused next generation package.





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- **UN Framework Agreement (similar to Climate Change Convention)**
 - Upside
 - Agreement on the global importance of the issue
 - Identifies objectives, principles, and commitments
 - Creates a structure for scientific advice
 - Creates a process for regular convening to assess progress and financing while allowing for flexible national implementation strategies
 - Could build in self-implementation
 - Downside
 - UNFCCC defined by political controversy, scientific disputes, difficult negotiations, and unmet objectives
 - Some of the downside could possibly be negated if a fissile material security framework avoided the UN, was signed by a multilateral coalition of the committed, and then opened to additional signature
 - **UN Security Council Resolution**
 - Upside
 - Several examples – 1373, 1540, 1887
 - International legitimacy among Security Council members
 - Downside
 - Little ability to compel compliance despite Chap. 7 binding mandate for 1373 and 1540
 - Developing countries may be skeptical, annoyed, or opposed
 - General ineffectiveness of UNSCRs



Opportunities for Progress: 2010 Nuclear Security Summit

- The NSS is one place to root the new standards and initiatives desperately needed to supplement current treaties and agreements.
- **April 2009:** Pres. Obama outlined his arms control & nuclear nonproliferation objectives in Prague, Czech Republic – secure all vulnerable nuclear materials in 4 years.
- **July 2009:** G8 endorsed the 4 year nuclear security goal
- **September 2009:** UNSC endorsed 4 year goal (UNSCR 1887)
- **April 2010:** Washington will host a first-of-its-kind global Nuclear Security Summit with 44 heads of state to discuss the need to prevent nuclear terrorism and achieve the four year goal.
- Summit should be the beginning of a process not an end in itself:
 - **Pre-Summit:** lead time to generate new international commitments
 - **Summit:** approval of specific, time-bound goals and actions
 - **Post-Summit:** regular technical meetings to discuss commitment implementation and additional steps needed, as circumstances evolve.

Will It Be A Success?

- Likely will focus on existing mechanisms, not new initiatives
- Potential lack of consensus on the threat of nuclear terrorism
- Possible allergy to “Made in America” policy forum
- Potential unwillingness of countries to ask for nuclear security assistance for fear of being labeled “vulnerable”
- Entrenched domestic political and economic interests may lead to LCD result
- Summit communiqué will likely be interpreted as defining upper limit of nation’s required actions

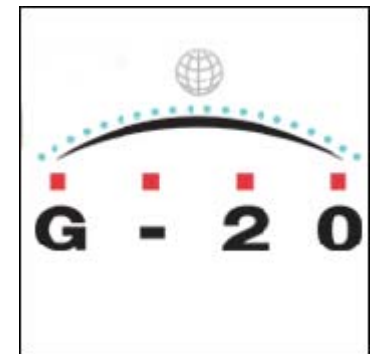


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Opportunities for Progress: G8/G20 Summit

- The Global Partnership's (GP) was the first multilateral complement to US CTR.
 - original purpose was to “support specific cooperation, initially in Russia, to address nonproliferation, disarmament, counter-terrorism and nuclear safety issues.”
- In 2008 expanded its focus to address “global challenges particularly in areas where the risks of terrorism and proliferation are the greatest.”
- Despite a new global mandate the GP's efforts are still primarily focused on Russian priorities, have not outlined global objectives, has not allocated full \$10 billion in non-US funding.
- The GP is in need of reconfiguration and expansion at the 2010 G8/G20 Summit in Canada. This is an opportunity to engage G20 nations on the WMD security agenda.
- The GP's mandate should be extended for another 10 years.
 - Preserve its multilateral character
 - Operationally expand focus globally and include new initiatives
 - Expand mandate from G8 to include G20
 - Maintain \$10-15 billion (over US funding) over 10 years as funding commitment (can include domestic security improvement costs)





Top Objective: Maintain a Global Fund for WMD Security

Global funding for WMD security should equal roughly \$2.5 – 3 billion per year, including US funding

- GP original goal - \$20 billion by 2012
 - Originally U.S. providing half of that total (\$10 billion)
 - Contributions have been made by 21 countries and the EU
 - Most non-U.S. funding is devoted to:
 - Nuclear safety
 - Submarine dismantlement
 - Chemical weapon destruction
- U.S. spending has risen since GP's inception to over \$1.5 billion per year or ~75% of total envisioned yearly funding



~30% from FY06 appropriations to FY11 request

Global Priorities

Defense

\$1.6 trillion: World in 2007
\$693 billion: U.S. in FY10

Foreign Aid

\$114.5 billion: OECD in 2008
\$29 billion: U.S. in FY08

Climate Change

**\$6.5 billion: U.S
FY07 Budget**

WMD

**\$1.8 billion:
U.S.
FY10**



Policy Options: Administration and Congress

- **Modify the FY12 Congressionally Mandated Ramp-Down of Spending in Russia and the FSU**
 - Work remains in this region, security equipment is nearing the end of its life expectancy, and first and second line of defense missions will likely grow (perhaps bio also).
- **Create Regional Nuclear Training Centers – (Proposed in DoD FY11 Budget)**
 - Establish new regional centers as hubs of expertise and training for nuclear facilities in need of security improvement which could ultimately expand their missions to include regional monitoring to supplement IAEA efforts.
- **Operationally Expand INMPC to New Regions**
 - INMPC is still overwhelmingly Russia focused, with small funding for South Asia and China cooperation.
- **Clarify and Improve the Authorities Governing Proliferation Prevention Programs**
 - Conduct a review to ensure that the U.S. has all the authorities in place required to recover, remove, and dispose of nuclear, radiological, and biological materials, especially those that may need to be returned to the U.S.
- **Modernize Metrics for Success**
 - The value of the softer, more intangible benefits of the threat reduction approach, such as cooperation and engagement, must be legitimized and formally integrated into modern metrics for success.
 - The FY10 Defense Authorization directs the Secretary of Defense to “develop and implement” metrics for measuring CTR’s “impact and effectiveness.” Up to \$1m is provided for the Secretary to work with NAS on this.
- **Elevate the Use of Financial Tools to First-Tier Policy Options**
 - Treasury’s “smart” sanctions program is a new tool in the U.S. nonproliferation arsenal that recognizes the reality of integrated global financial networks and utilizes them to combat proliferators. Better analysis of economic leverage points (both punitive and incentive) is needed. Lessons learned from Russia, Ukraine, Libya, and DPRK.
- **Create a New “Iron Triangle” of Government, Civil Society, and Private Sector**
 - Government institutions provide regulatory capacity and funding but lack vision; NGOs provide unique analyses and new approaches but lack authority; and the private sector drives innovation and has much at stake if terrorists attack, but it lacks the incentive to cooperate.



Policy Options: Nuclear Security Summit

- **Create a Global Nuclear Material Security Roadmap**
 - Identify priority locations, ranked highest to lowest, and financial and technical resources to correct the problems and supplement with a plan for international scientific cooperation to prevent nuclear theft and terrorism.
- **Strengthen the IAEA**
 - Developed countries should increase their voluntary contributions for 4 years and earmark the funds for nuclear security (with a goal of +\$150 million per year – equal to safeguards budget) and all countries should agree to train a specific number of additional nuclear security specialists for assignment at the IAEA.
- **Minimum Global Nuclear Security Standard**
 - Create a global minimum standard for securing nuclear material (See “Securing the Bomb” for specifics).
- **Accelerate Efforts to Consolidate and Eliminate Global HEU and Plutonium Stockpiles**
 - Minimize the number of locations at which the materials are stored and extend international monitoring over all civilian stockpiles and, in NWS, over declared excess military fissile material.
- **Secure All Radiological Sources in Public Buildings Beginning with Metropolitan Hospitals**
 - NNSA’s pilot project with the Hospital of the University of Pennsylvania and local authorities could serve as a model in the U.S. and abroad for securing radiological materials (~\$250,000 per building = \$125 million to secure 500 U.S. metropolitan hospitals).

Post-Summit

- **Regular Technical Dialogues**
 - Semi-annual bilateral and multilateral meetings among specialists from participating countries as well as private sector and civil society representatives, when appropriate
- **Annual Reporting on Implementation Progress**
 - Issue annual public reports on steps taken to implement summit commitments
- **Generate Support from All Nations**
 - Use summit as a starting point for initiating and continuing regional security dialogues with countries not attending
- **Generate Support Beyond Governments**
 - Capitalize on the network and dialogue begun by the Fissile Materials Working Group and draw new private sector partners into the nuclear security agenda (www.fmwg.org)



Policy Options: Multilateral (G8/G20 & Ad Hoc)

Opportunity: Extend GP & engage the G20 on nuclear security issues during the G8/G20 summits being held in Canada in June 2010. BRIC (Brazil, Russia, India, and China) countries need to be partners.

- **Establish a Multilateral WMD Emergency Rapid Reaction Force**
 - Establishes delineated roles and responsibilities; requires dedicated funding for operations, transport, and training; and ensures the necessary legal authorities are in place to allow for the rapid extraction and return of materials.
- **UNSCR 1540 Implementation**
 - UNSCR 1887 called for consideration of a voluntary Resolution 1540 implementation fund which the Global Partnership could help establish (financial, technical, and manpower assistance).
- **Agree to create a Fissile Material Security Framework**
 - Create a framework that identifies the threat to humankind from vulnerable fissile materials and lists mitigating actions and requirements.
- **Generate More Funding Commitments for Global Partnership and Domestic Activities**
 - More than half (24) of the countries participating the nuclear summit are not GP donors & could be called upon to help provide the resources needed to operationally expand GP activities. Also, countries should be encouraged to spend more at home on security and receive credit from the international community for it.
- **Minimize and then Eliminate the Use of HEU**
 - Agree on a timetable for a phase-out and ultimate ban on the civil use of HEU.
- **Multi-Party Nuclear Security Hotline**
 - Would allow for immediate communication surrounding suspicious incidents, similar to hotlines used by the U.S. & Russia and the IAEA to monitor global reactor safety.
- **Satellite Uplinks on Portal Monitors and Perimeter Security Equipment**
 - Install satellite uplinks on all equipment at facilities monitored by the IAEA to provide real-time reporting on operational status and log security alerts and breaches. NWS could operate a similar complementary system and lead by example. Could also add video transparency similar to SRNL.
- **P-5 Fissile Material Cut-off Agreement**
 - Leadership opportunity and common starting point for the P-5 to support NPT and kick start FMCT.
 - Verification issues should not be a deterrent to action.



Policy Options: Private Sector and Civil Society

- **Nonproliferation Enterprise Fund**

- Funds USG partnerships with NGOs and universities for expanded nonproliferation analysis and supports the next generation of nonproliferation experts in exchange for some government service (Initial investment = \$25 million).
- Similar to past partnerships between the federal government and research universities to aggressively fund basic science research.

- **The Nuclear Energy Industry Nonproliferation Fund**

- President has proposed \$54 billion in loan guarantees for nuclear power construction.
- A small percentage of the underwriting costs (0.1%) of those guarantees should be devoted to nonproliferation funding, similar to nuclear waste fee.
- Links the nuclear industry into the security debate, increases the pool of nuclear security funding, and offers a reputational benefit to power sector.



- **Fissile Materials Working Group (FMWG)**

- A potentially game changing coalition if it can be globalized and sustained.
- Currently over 40 U.S. nuclear security issue experts, academics, and advocates collectively working to support the four year effort; presented consensus policy recommendations to the Administration; building an international coalition of supporters; will track the implementation of commitments made by governments at the April 2010 official Nuclear Security Summit.

- **FMWG Summit: “Next Generation Nuclear Security: Meeting the Global Challenge”**

- Highlighting the importance of preventing nuclear terrorism by improving nuclear material security; helping build global support for the four year effort; and creating a lasting foundation for continued domestic and international collaboration; held the day before the official summit.
- Over 200 U.S. and international experts and media representing over 40 countries are expected to attend.
- Convening a six month review conference in Amman, Jordan in October 2010.



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- We need to bolt the door against nuclear terrorism – 2010 is a key year for progress.
 - Governments and international institutions are not keeping pace with the evolving nature of the globalized and disaggregated nuclear threat - there is a real danger that proliferators will exploit the weakened nonproliferation regime with potentially devastating results.
 - Globalization is a reality that is impacting WMD proliferation and we need to adapt to it quickly.
 - A political and technocratic cultural shift will be necessary for this adaptation and it will require considerable and sustained global political, diplomatic, and technical engagement.
 - The international community should agree upon a next generation nuclear material security framework that:
 - Accounts for the increasingly important integration of economic, technological, and security issues.
 - Fuses the bedrock treaties with modern mechanisms that emphasize cooperation, flexibility, effectiveness, and market-based solutions.
 - Includes the full range of stakeholders.
 - Concrete actions are more important than political intentions.
 - The global WMD funding pool must be maintained at \$2.5-3 billion per year and used more creatively.
 - The NSS must go beyond endorsing/implementing existing mechanisms and break new ground. Its commitments need to be rapidly, effectively, and sustainably implemented to realize the four year goal.
 - The GP should use the 2010 G8 Summit in Canada to extend its mandate for another ten years, evolve into a more flexible, global multilateral force, and draw in additional donors and partners.



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