



Nuclear Security and the role of the United States

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United States efforts to promote Nuclear Security

- ▶ U.S. efforts on nuclear security include a wide range of interagency, international, and multilateral coordination aimed at reducing the risks of nuclear weapons and related materials falling into the hands of terrorists.
- ▶ The Nuclear Security Summits (NSS), U.S. programs that secure nuclear material, efforts that support relevant International Organizations, support to international initiatives such as the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (Global Partnership) and the Global Initiative to Combat Nuclear Terrorism (GICNT), and other efforts part of the nuclear security architecture play vital roles in the U.S. engagement in strengthening nuclear security.

Nuclear Security Summits

- ▶ The Nuclear Security Summit has been a catalyst in strengthening efforts the U.S. government is undertaking in the area of nuclear security
- ▶ It has also had the effect of similarly strengthening the efforts of the international community regarding nuclear security, including the work of international organizations, international initiatives, non-governmental organizations and industry
- ▶ The presentation will highlight the Nuclear Security Summits and thereby also showcase the work of the U.S. and its international partners in promoting nuclear security.

President Obama first unveiled his vision for a Nuclear Security Summit during his April 2009 speech in Prague, in which he described nuclear terrorism as the most immediate and extreme threat to international security.



To combat this threat, President Obama announced that the United States would lead international effort to secure all vulnerable nuclear material around the world and the plan to host a Summit on nuclear security.

Summits: Creating and Maintaining Momentum

- ▶ Generate and maintain the highest level of political attention
- ▶ Catalyst for new pledges to remove excess nuclear material
- ▶ Securing nuclear material is fundamentally the responsibility of the state, both states at the NSS and other states
 - ▶ Assistance can be provided by other states and IO's and NGOs
 - ▶ Requires international cooperation: nuclear smuggling does not stop at the border
 - ▶ Security of nuclear material is a global public good

2010 Nuclear Security Summit

- ▶ Hosted in Washington, DC, April 2010
- ▶ 47 Nations and 3 International Organizations
- ▶ Focus: Nuclear security
 - ▶ Not on nuclear safety
 - ▶ Not on radiological security
 - ▶ Not on the three pillars of the NPT
 - ▶ Disarmament
 - ▶ Nonproliferation
 - ▶ Peaceful Uses



2010 Nuclear Security Summit

- ▶ Sherpa and Sous-Sherpa meetings
 - ▶ Sherpas and sous-Sherpas met several times leading up to the Summit, and focused on a series of goals. Most important, they sought to identify collective steps to secure vulnerable nuclear materials, to combat proliferation-related smuggling, and to deter, detect, and disrupt attempts at nuclear terrorism.
- ▶ Communique
- ▶ Workplan
- ▶ National Commitments and “House Gifts”
 - ▶ Center of Excellence concept originated
- ▶ Non-governmental organization and Industry events

2010 Nuclear Security Summit

- ▶ Achieved Crucial Consensus on three key areas
 - ▶ The danger of nuclear terrorism is one of the greatest threats to our collective security
 - ▶ Terrorist networks such as al Qaeda have tried to acquire the material for a nuclear weapon, and if they ever succeeded, they would surely use it, and
 - ▶ Were they to do so, it would be a catastrophe for the world – causing extraordinary loss of life, and striking a major blow to global peace and stability

2010 Nuclear Security Summit Outcomes: Communiqué

- ▶ Communiqué: high level political commitments
- ▶ The Summit communiqué offered high-level political commitments and supported President Obama's call to secure all vulnerable nuclear material. Specifically, it recognized the need for responsible national actions and sustained and effective international cooperation on nuclear security issues.

Nuclear Security Summit Communiqué

- ▶ Leaders made a commitment to the principles of nuclear security
- ▶ Reaffirmed the fundamental responsibility of States, consistent with their respective international obligations, to maintain effective security of all nuclear materials
- ▶ Promoted focused national efforts to improve security of all weapons-usable nuclear materials
- ▶ States committed to work cooperatively as an international community to advance nuclear security, requesting and providing assistance where necessary

2010 Nuclear Security Summit Outcomes: Work Plan

- ▶ Work Plan: detailed guidance for national and international actions to implement the Communiqué
- ▶ Summit participants agreed on a Work Plan as guidance for national and international action to implement the commitments in the Communiqué.
- ▶ The Work Plan represents a political commitment by the participants to carry out applicable portions in all aspects of the storage, use, transportation, and disposal of nuclear materials, and in preventing non-state actors from obtaining the information required to use such material for malicious purposes.

2010 Nuclear Security Summit Work Plan

- Ratifying and implementing treaties on nuclear security and nuclear terrorism;
- Cooperating through the United Nations to implement and assist others in connection with Security Council resolutions;
- Working with the International Atomic Energy Agency to update and implement security guidance and carry out advisory services;
- Reviewing national regulatory and legal requirements relating to nuclear security and nuclear trafficking;
- Converting civilian facilities that use highly enriched uranium to non-weapons-usable materials;
- Research on new nuclear fuels, detection methods, and forensics techniques;
- Development of corporate and institutional cultures that prioritize nuclear security;
- Education and training to ensure that countries and facilities have the people they need to protect their materials; and
- Joint exercises among law enforcement and customs officials to enhance nuclear detection approaches.

2010 Nuclear Security Summit Outcomes: National Commitments

- ▶ National Commitments: Individual steps by participants in support of commitments in the Communiqué and Work Plan
- ▶ These statements highlighted a rich agenda of global, multilateral, regional, and national steps to secure nuclear materials and to prevent illicit trafficking and smuggling.

2010 National Commitments

- ▶ Nuclear material removals/elimination
 - ▶ Canada, Chile, Kazakhstan, Mexico, Russia, Ukraine, US
- ▶ Research reactor conversions
 - ▶ Chile, Kazakhstan, Mexico, Vietnam
- ▶ Ending fissile material production
 - ▶ Russia
- ▶ Treaty ratifications
 - ▶ Armenia, Argentina, Australia, France, Georgia, Germany, Poland, UK, US
- ▶ IAEA support
 - ▶ Belgium, Japan, NZ, Norway, Russia, UK, US
- ▶ IAEA security reviews (IPPAS)
 - ▶ Finland, France, UK, US
- ▶ Capacity building/Centers of Excellence
 - ▶ China, France, India, Italy, Japan, Kazakhstan, UK, US
- ▶ Cooperative mechanisms (e.g., G8 GP, GICNT)
 - ▶ Argentina, Canada, Philippines, Singapore, Thailand, UK, US, Vietnam
- ▶ National regulations export control
 - ▶ Armenia, Egypt, Malaysia
- ▶ Increased Detection of material out of regulatory control
 - ▶ Argentina, Italy, UAE, US
- ▶ Contributions
 - ▶ Canada, NZ, Norway, US
- ▶ International meetings
 - ▶ Canada, Japan, Kazakhstan, Korea, Saudi Arabia

Multi-Sectoral Approach – The Role of NGOs

- NGO Summit: Next Generation Nuclear Security, April 12
 - 200+ experts, 40+ countries
 - Key points:
 - “The detonation of a nuclear explosive device would be the quintessential terrorist act of the 21st century. It poses a real and present danger to the security of nations around the world. We cannot allow our response to fall short of the dimensions of the threat.” Robert Gallucci, President, MacArthur Foundation
 - “...nuclear security is too important to be left to each country to implement unaided. We know that unauthorized diversion of fissile material in any country could lead to global consequences – every country has a stake in the effectiveness of security measures everywhere else.” Gareth Evans, ICNND Co-Chair

Multi-Sectoral Approach – The Role of Industry

- ▶ **Industry Summit at 2010 Nuclear Security Summit**
 - ▶ April 14, 2010
 - ▶ 170 participants, 40 + countries
- ▶ **Recognize several key points:**
 - ▶ A need for greater understanding of industry's role in reducing the risk of nuclear terrorism
 - ▶ Commercial industry should be more involved in treaties, security arrangements, and best practices
 - ▶ Need for industry-government dialogue on nuclear security
 - ▶ International terrorism, and in particular nuclear terrorism, affects everyone
 - ▶ Industry has yet to take its role in nuclear security discussions



Nuclear
Security
Summit
Seoul 2012

2012 Seoul Nuclear Security Summit

Beyond Security Toward Peace



2012 Seoul Nuclear Security Summit

- ▶ 53 World leaders
 - ▶ 4 International Organizations
- ▶ Communique
- ▶ Continued to address Washington Work Plan
- ▶ “Gift Baskets”
- ▶ National Commitments and Progress Reports
- ▶ No significant focus on
 - ▶ Nuclear disarmament, nonproliferation or nuclear energy
 - ▶ “We reaffirm our shared goals of nuclear disarmament, nuclear nonproliferation and peaceful uses of nuclear energy.”

2012 Seoul Communique: Focus Areas

- ▶ Global Nuclear Security Architecture
- ▶ Role of the IAEA: reaffirm the essential responsibility and central role of the IAEA in strengthening the international nuclear security framework
- ▶ Nuclear Materials: recognizing that highly enriched uranium (HEU) and separated plutonium require special precautions, and reemphasize the importance of appropriately securing, accounting for and consolidating these materials
- ▶ Radioactive Sources: Urge States to secure these materials, while bearing in mind their uses in industrial, medical, agricultural and research applications.
- ▶ Nuclear safety and security: Acknowledging that safety measures and security measures have in common the aim of protecting human life and health and the environment, affirmed that nuclear security and nuclear safety measures should be designed, implemented and managed in nuclear facilities in a coherent and synergistic manner.

2012 Seoul Communique: Focus Areas

- ▶ **Transportation Security:** “We will continue efforts to enhance the security of nuclear and other radioactive materials while in domestic and international transport, and encourage States to share best practices and cooperate in acquiring the necessary technologies to this end”
- ▶ **Combatting illicit trafficking:** “We underscore the need to develop national capabilities to prevent, detect, respond to and prosecute illicit nuclear trafficking”
- ▶ **Nuclear Forensics:** Nuclear forensics can be an effective tool in determining the origin of detected nuclear and other radioactive materials and in providing evidence for the prosecution of acts of illicit trafficking and malicious uses

2012 Seoul Communique: Focus Areas

- ▶ Nuclear Security Culture: “Recognizing that investment in human capacity building is fundamental to promoting and sustaining a strong nuclear security culture, we encourage States to share best practices and build national capabilities, including through bilateral and multilateral cooperation”
- ▶ Information Security: “We recognize the importance of preventing non-state actors from obtaining information, technology or expertise required to acquire or use nuclear materials for malicious purposes, or to disrupt information technology based control systems at nuclear facilities”
- ▶ International Cooperation: “We encourage all States to enhance their physical protection of and accounting system for nuclear materials, emergency preparedness and response capabilities and relevant legal and regulatory framework”

2012 National Commitments

- ▶ 53 countries announced over 100 commitments. Examples:
 - ▶ Removal of all highly-enriched uranium from Ukraine and Mexico
 - ▶ Removal of more than a dozen bombs worth of weapons grade plutonium from Kazakhstan
 - ▶ Removal of all separated plutonium from Sweden
- ▶ IAEA support (contribution to the NSF)
 - ▶ Belgium, Canada, Denmark, France, Japan, ROK, Norway, UK
- ▶ Centers of Excellence
 - ▶ Ten countries either establishing or plans to establish a COE
- ▶ Nuclear Forensics
 - ▶ Commitment by Australia, Thailand, Singapore to establish Nuclear Forensics Institutes and initiate other capacity-building measures

U.S. Progress reported at the 2012 Summit

- ▶ The US spent \$72 million on research and development for new research reactor fuels to enable shorter timelines for domestic and international reactor conversions to low enriched uranium fuel.
- ▶ The US has, since the Washington Summit, downblended about 10.5 metric tons of US HEU, supported Russian downblending of about 2 metric tons of HEU, and supported the removal and elimination of over 400 kilograms of HEU from ten countries – in aggregate enough for about 500 nuclear weapons.
- ▶ The US adjusted design basis threats and implemented new materials control and accounting, physical protection, and information security policies based on new vulnerability assessments.
- ▶ The United States was a strong advocate for the extension of the Global Partnership beyond 2012— secured at the 2011 G8 Summit—as well as a renewed focus on nuclear security.

U.S. Progress reported at the 2012 Summit

- ▶ The US took steps to mitigate the insider threat through additional human reliability evaluations, additional security file reviews, and new guidance and education programs for adjudicators. In addition, the US began monitoring for anomalous behavior on computer networks.
- ▶ The US contributed \$1.6 million to the World Institute of Nuclear Security (WINS) to support industry outreach and sharing of best practices.
- ▶ As a co-chair of the GICNT, the US remains committed to advancing a range of measures that build international partner capabilities to combat nuclear terrorism
- ▶ The US contributed \$2.4 million to INTERPOL's new Radiological and Nuclear Terrorism Prevention Unit, noting its central role in facilitating rapid exchange of investigative lead information, and the US intends to continue contributions
- ▶ The US has assisted a number of countries to implement the Nuclear Security Summit Work Plan.

Nuclear
Security
Summit
2014 The Hague

Nuclear
Security
Summit
2014 The Hague

Nuclear Security Summit 2014

The Hague, the Netherlands



2014 Nuclear Security Summit

- ▶ 53 World leaders
 - ▶ 4 International Organizations
- ▶ Focus: Prevent nuclear terrorism
 - ▶ Secure all nuclear material and prevent misuse by non-state actors
 - ▶ Prevent sabotage and unauthorized removal
 - ▶ Countering smuggling
- ▶ No significant focus on
 - ▶ Nuclear disarmament, nonproliferation or nuclear energy
 - ▶ Nuclear safety

2014 Summit Leader Scenario

- ▶ Objectives
 - ▶ Enhance awareness among world leaders of the different dimensions of the nuclear security threat
 - ▶ Create an opportunity for leaders to share views on internal coordination approaches
 - ▶ Enhance awareness of international obligations and recommendations
 - ▶ Explore potential benefits of international cooperation
 - ▶ Support the strengthening of the global nuclear security architecture
 - ▶ Discuss nuclear security communication approaches
- ▶ Head of Delegation + 3

2014 U.S. Statements and Gift Baskets

- ▶ Joint Statement by the Leaders of Japan and the United States on Contributions to Global Minimization of Nuclear Material
 - ▶ Remove and dispose all HEU and separated PU from the Fast Critical Assembly (FCA) at the Japan Atomic Energy Agency (JAEA) in Japan
 - ▶ Elimination of hundreds of kilograms of nuclear material, furthering our mutual goal of minimizing stocks of HEU and separated PU worldwide
 - ▶ Will be sent to the US to a secure facility and fully converted into less sensitive forms
 - ▶ PU will be prepared for final disposition; HEU will be downblended to LEU and used for civilian purposes

2014 U.S. Statements and Gift Baskets

- ▶ Joint Statement by President Obama and Prime Minister Elio Di Rupo of Belgium on the 2014 Nuclear Security Summit
 - ▶ Jointly completed the removal of a significant amount of excess HEU and separated PU
 - ▶ Pledged at the 2012 Summit to work together to remove this material prior to the 2014 Summit: Joint effort by UK, US, Belgium and IAEA
- ▶ Joint Statement by the United States and Italy on the 2014 Nuclear Security Summit
 - ▶ Jointly completed the removal of approximately 20 kilograms of excess HEU and separated PU from Italy
 - ▶ Joint effort by UK, US, Italy and IAEA

2014 U.S. Statements and Gift Baskets

- ▶ Joint Statement on Countries Free of Highly Enriched Uranium (HEU)
 - ▶ Highlight the elimination of HEU from within the borders of countries that signed on to the statement
 - ▶ 12 signed on + Kazakhstan and Singapore
 - ▶ Recognizes the role of the U.S., Russia and the IAEA for their assistance in converting research reactors from HEU to LEU
- ▶ Enhancing Radiological Security Gift Basket – 23 Nations signed on
 - ▶ Join to secure IAEA Category 1 radioactive sources within their territory by 2016
 - ▶ Establish a comprehensive lifecycle management plan

Other 2014 Gift Baskets

- ▶ Counter Nuclear Smuggling (Jordan) – 20 Nations
- ▶ Forensics in Nuclear Security (The Netherlands) – 24 Nations In larger security: a comprehensive approach to nuclear security (Brazil) – 15 Nations
- ▶ National Legislation Implementation Kit on Nuclear Security (Indonesia) – 29 Nations signed + UN
- ▶ Nuclear Information Security (United Kingdom) – 35 Nations
- ▶ Nuclear Security Training and Support Centers/ Centers of Excellence (Italy) – 31 Nations

U.S. Achievements

- ▶ Removed over 3.5 metric tons of HEU and plutonium material from 23 countries to reduce the number of places where terrorists can look for material.
- ▶ Since 2009, twelve territories have removed all HEU from its borders, including Austria, Bulgaria, Chile, Czech Republic, Hungary, Libya, Mexico, Romania, Serbia, Taiwan, Turkey, and Ukraine.
- ▶ Converted over 80 research reactors worldwide from HEU to LEU fuel use.
- ▶ Completed physical security upgrades at 218 buildings storing weapons-usable fissile materials.
- ▶ Installed radiation detection equipment at over 490 international border crossings, airports, and seaports to combat nuclear material smuggling.

2014 United States Progress Report

- ▶ The United States made contributions to the IAEA's Office of Nuclear Security totaling more than \$28 million since 2012.
- ▶ In October 2013, the United States submitted a new report on measures it has taken to implement its UNSCR 1540 obligations, documenting that its measures meet or exceed international standards, including all those for securing and physically protecting nuclear items
- ▶ The United States conducted 17 domestic exercises in 2012-2014 to increase nuclear preparedness, response, recovery, and resilience.
- ▶ The United States contributed \$2.4 million to INTERPOL's new Radiological and Nuclear Terrorism Prevention Unit, noting its central role in facilitating rapid exchange of investigative lead information.
- ▶ The United States and Russia successfully completed the HEU Purchase Agreement under which 500 metric tons of Russian weapons-origin HEU- the equivalent for approximately 20,000 nuclear warheads - was converted into LEU and used in U.S. power reactors to produce 10 percent of all U.S. electricity during the past 15 years

2014 U.S. Progress Report: Military Material

- ▶ The United States secures all military material in exemplary fashion, and takes IAEA INFCIRC 225/Rev. 5 into account in military security provisions.
- ▶ The United States publishes regulations governing security of military material, and associated annual budgets.
- ▶ The United States maintains human reliability programs for personnel responsible for securing military material.
- ▶ The United States has published studies and reviews of nuclear security incidents, including lessons learned and actions taken.

2014 Other National Progress Reports

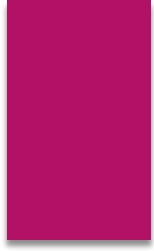
- ▶ United Kingdom: The UK's Global Threat Reduction Programme has supported projects to minimize Highly Enriched Uranium (HEU), including, recently, agreeing to support an IAEA, Russia and U.S. project to repatriate all HEU from the "FOTON" research reactor in Tashkent, Uzbekistan.
- ▶ Japan: Hosted a table-top exercise for Transport Security with participants from France, the Republic of Korea, the United Kingdom, and the United States, IAEA, and some observer countries in cooperation with the World Institute for Nuclear Security (WINS) and the World Nuclear Transport Institute (WNTI).
 - ▶ Japan established the Committee on Nuclear Security under the Nuclear Regulation Authority (NRA) and is accelerating the research and consultation regarding measures to strengthen transport security.

2014 Other National Progress Reports

- ▶ China: China has decommissioned two HEU research reactors in a step-by-step manner, and is now actively advancing the conversion of another HEU reactor to using low enriched uranium.
 - ▶ China has also actively cooperated with the IAEA and the United States on security management and supervision of radioactive sources, including training Chinese regulatory personnel and upgrading the security level of certain key facilities for demonstration purpose.
- ▶ Turkey: The Turkish National Police, in co-operation with INTERPOL and the IAEA, organized an international conference for about 75 participants from 13 countries in the Caucasus and Eastern Europe to promote national and regional interagency co-operation to counter nuclear smuggling.

Capturing commitments and measuring success

- ▶ Communiqués (2010, 2012, 2014)
- ▶ 2010 Workplan
- ▶ “House Gifts” (2010, 2012, 2014)
- ▶ National Statements
- ▶ National Progress Reports
- ▶ “Gift Baskets” (2012, 2014)
 - ▶ Concept sets out a new model for nuclear security cooperation
 - ▶ Voluntary collective action by a smaller number of Summit participants
 - ▶ 13 joint statements including radioactive sources, information security, counter smuggling, transportation security, legislation implementation, COEs,
- ▶ Bilateral Joint Statements



Moving Towards the 2016 Nuclear Security Summit

Moving Towards the 2016 Nuclear Security Summit

- ▶ Location in the United States: Not yet determined
- ▶ High-level Political Statement, incorporating by reference all previous Communiqués and Work Plan
- ▶ Gift Baskets
- ▶ Scenario
- ▶ Focus on the legacy – how to we maintain the successes achieved?

Strengthening the Global Architecture for Nuclear Security - 2016

- ▶ Treaties, institutions, norms and practices that will reliably secure nuclear materials
- ▶ UN Security Council Resolution 1540
- ▶ 2005 Amendment to the Convention on Physical Protection of Nuclear Materials (A/CPPNM)
 - ▶ 34 new ratifications since the 2010 Summit
- ▶ International Convention on Suppression of Acts of Nuclear Terror (ICSANT)
- ▶ Enhancing the national legal basis of nuclear regulations and regulatory bodies
- ▶ International Initiatives: Global Initiative to Combat Nuclear Terrorism and the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction

Features of a future architecture

- ▶ Leadership attention
- ▶ National and collective enduring action
- ▶ Accountability
- ▶ Adequate resources
- ▶ Appropriate authorities/mandates
- ▶ Prioritization
- ▶ Exercises
- ▶ Inclusion/expansion/ universalization
- ▶ Comprehensive scope
- ▶ Sherpa connectivity
- ▶ Coordination
 - ▶ among institutions
 - ▶ with civil society & industry
- ▶ National/regional/global
- ▶ Strengthened standards
- ▶ Best practices sharing
- ▶ Reductions in HEU and Pu

Developing a post-2016 architecture

- ▶ Build up the durable nuclear security institutions, within each one's mission, mandate and membership
- ▶ Develop ideas for each institution to promote the priorities from the Summit beyond 2016
- ▶ Socialize plans within each institution
- ▶ Identified institutions:
 - ▶ International Atomic Energy Agency
 - ▶ United Nations
 - ▶ INTERPOL
 - ▶ GICNT
 - ▶ Global Partnership

United States Role in Nuclear Security

- ▶ The U.S. continues to collaborate with the international community, including national governments, multilateral institutions, and non-government experts and institutions to promote and ensure that the world's dangerous nuclear and radiological materials are kept secure.
- ▶ We thank the JAEA for its leadership in this effort and we look forward to working together toward a world secure from the dangers posed by these weapons and materials.

Thank You