An Arms Control Association and Fissile Materials Working Group Report

The Nuclear Security Summits: An Overview of State Actions to Curb Nuclear Terrorism 2010–2016

July 2018

Sara Z. Kutchesfahani, Kelsey Davenport, and Erin Connolly

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"We cannot be complacent. We have to build on our progress. We have to commit to better security at nuclear facilities; to removing or disposing of more dangerous material; to bringing more nations into treaties and partnerships that prevent proliferation and smuggling; and to making sure that we have the architecture in place to sustain our momentum in the years ahead."

***–U.S. President Barack Obama**, Washington, D.C., April 1, 2016*

LIST OF ACRONYMS & ABBREVIATIONS

ASEAN: Association of Southeast Asian Nations

Category 1: Radioactive sources most dangerous to human health in ranking of 1–5

Category 2: Radioactive sources most dangerous to human health in ranking of 1–5

CBRN: Chemical, biological, radiological, nuclear

CBRNe: Chemical, biological, radiological, nuclear, and explosives

Code of Conduct: Code of Conduct on the Safety and Security of Radioactive Sources

CPPNM: Convention on the Physical Protection of Nuclear Materials

CPPNM/A: Convention on the Physical Protection of Nuclear Material 2005 Amendment

CTR: Cooperative Threat Reduction

DBT: Design Basis Threat

ECOWAS: Economic Community of West African States

EPREV: Emergency Preparedness Review Service

EU: European Union

FMCT: Fissile Material Cut-Off Treaty

GICNT: Global Initiative to Combat Nuclear Terrorism

Global Partnership: Global Partnership against the Spread of Weapons and Materials of Mass Destruction

GPS: Global Positioning System

HEU: Highly Enriched Uranium

HRP: Human Reliability Program

IAEA: International Atomic Energy Agency

IAG: Implementation and Assessment Group

ICSANT: International Convention for the Suppression of Acts of Nuclear Terrorism

INFCIRC: Information Circular

- INFCIR/225/Rev 5: Nuclear Security Recommendations on Physical Protection of Nuclear Materials and Nuclear Facilities (2011)
- INFCIRC/869: Strengthening Nuclear Security Implementation (2014)

INIR: Integrated Nuclear Infrastructure Review

INSEN: International Nuclear Security Education Network

LIST OF ACRONYMS & ABBREVIATIONS (CONT.)

INServ: International Nuclear Security Service

INSSP: Integrated Nuclear Security Support Plans

Interpol: International Criminal Police Organization

IPPAS: International Physical Protection Advisory Service

IRRS: Integrated Regulatory Review Service

ISSAS: IAEA Safeguards Advisory Service Mission

ITDB: Incident and Trafficking Database

ITWG: The Nuclear Forensics International Technical Working Group

LEU: Low-Enriched Uranium

Mercosur: South American regional bloc including Argentina, Brazil, Paraguay, Uruguay, and Venezuela

Mo-99: Molybdenum-99

NGO: Nongovernmental Organization

NPT: Nuclear Nonproliferation Treaty

NSOI: Nuclear Smuggling Outreach Initiative

NSS: Nuclear Security Summit

NSSC: Nuclear Security Support Center

PMDA: US-Russia Plutonium Management and Disposition Agreement

PSI: Proliferation Security Initiative

R&D: Research and Development

RDD: Radiological Dispersal Device

STUK: Radiation and Nuclear Safety Authority of Finland

UN: United Nations

UNICRI: United Nations Interregional Crime and Justice Research Institute

UNODA: United Nations Office for Disarmament Affairs

UNODC: United Nations Office on Drugs and Crime

UNSCR 1540: UN Security Council Resolution 1540 (2004)

WINS: World Institute for Nuclear Security

WMD: Weapons of Mass Destruction

YVL: (Finnish) Regulatory Guides on Nuclear Safety

Executive Summary

The Nuclear Security Summit (NSS) process, initiated by President Barack Obama in 2009 and concluded in April 2016, significantly strengthened the global nuclear security architecture and brought high-level political attention to the risk posed by nuclear terrorism. The process brought together more than 50 world leaders at four summits—Washington, D.C. (2010), Seoul (2012), The Hague (2014), and Washington D.C. (2016)—to consolidate and enhance efforts to reduce the risk of nuclear and radiological terrorism by strengthening national laws, bolstering international cooperation, and minimizing weapons-usable materials.

Throughout the six-year process, the NSS pioneered the use of regular and voluntary nuclear security commitment-making by states and groups of states, leading to the creation of an effective new tool for continuously improving the nuclear security regime. The objective of strengthening nuclear security measures through responsible national actions was enshrined at the 2010 NSS and each summit brought new commitments by states to take specific actions to address gaps in the nuclear security system.

Over the course of the NSS process, countries made more than 935 distinct commitments to strengthen and improve nuclear security. The total number of commitments per state offered over the four summits ranged from 8–30, with an average of 18. Over the course of the NSS process, more than two dozen states requested or received International Physical Protection Advisory Service missions. Nearly three dozen states passed new laws or updated existing regulations to strengthen nuclear security and more than twenty new nuclear security centers were created.

These commitments accelerated the recovery and elimination of nuclear materials such that today, only 22 countries—down from more than 50—have weapons usable nuclear materials on their territories. Specifically, three entire geographic regions—South America, Southeast Asia, and Central and Eastern Europe—have entirely eliminated highly-enriched uranium from their soil and over the course of the summits, at least eight participating states eliminated stockpiles of weapons-usable materials. In addition to the critical work to minimize and secure nuclear materials, many new training and support centers devoted to nuclear security were established. Countries also committed to enhancing monitoring for nuclear and radioactive sources at borders and ensuring adequate cyber security at nuclear facilities.

A further notable accomplishment that came out of the NSS process was the entry into force of the 2005 Amendment to the Convention on Physical Protection of Nuclear Materials. During the NSS process, this key nuclear security treaty saw a five-fold increase in ratifications between 2009 and 2016, finally reaching the 101 countries needed for the amendment to enter into force. A similar uptick in the number of new adherents occurred in the ratifications of the International Convention on Suppression of Acts of Nuclear Terrorism. Summit documents encouraged states to take action to ratify these key treaties, and many states pledged to accede to both during the NSS process. As a result, many NSS participants updated national laws and regulations to align with the standards set by these treaties.

In addition to the many voluntary pledges made by single countries to improve nuclear security—"house gifts"—groups of states came together to make multilateral commitments—"gift baskets/joint statements". These gift baskets allowed states to address key areas of nuclear security and move beyond the status quo.

As the NSS process concluded in 2016, participants recognized that continuous improvement is necessary to strengthen the global nuclear security architecture. To build on the goals of the summit process, participating states approved Action Plans that were designed to instill NSS priorities into the five existing international organizations and initiatives working to address nuclear security issues through their normal decision-making process. These plans, together with the by-products of the NSS process—the Nuclear Security Contact Group, the International Atomic Energy Agency Nuclear Security Ministerial Meetings, the many Centers of Excellence—will be critical for influencing the trajectory of the global nuclear security regime and for sustaining the global nuclear security momentum.

A Reflective Piece on the Nuclear Security Summits

By Ambassador (ret.) Laura S.H. Holgate

In April 2009, US President Barack Obama chose nuclear challenges as the centerpiece of his first major foreign policy address, famously referred to by the name of the city in which he gave the speech, as the Prague Agenda. In this speech, he embraced a vision of a world without nuclear weapons, and proposed a four-part policy to make progress toward that vision:

1. Reductions in the number and importance of nuclear weapons in US national security strategy
2. Bolstering the nuclear nonproliferation regime and addressing its violators
3. Securing weapons-usable nuclear materials against theft and misuse by terrorists or others
4. Creating a new framework for global nuclear energy cooperation.

A key element of President Obama's vision was the convening of a Nuclear Security Summit (NSS) of world leaders to focus high-level attention on the urgent challenge of securing all nuclear materials. This initiative stood on the shoulders of several decades of efforts to address the potential for terrorists or others to gain access to highly enriched uranium (HEU) or plutonium—the necessary ingredients of nuclear weapons.

Fortunately, for now, it takes a large, expensive and technically demanding infrastructure to create these materials, which is generally understood to be beyond the capacity of non-state actors. But in the nuclear age, states have generated thousands of tons of HEU and plutonium for both weapons programs and civilian uses. The Atoms for Peace program pushed out research reactors fueled with HEU to universities all over the United States, and to civilian research centers in US and Soviet client states. At one point, these materials were located in more than 50 countries, and often were not secured and accounted for with the rigor that we now know is necessary to protect them against modern, sophisticated, well-resourced terrorist groups with apocalyptic world views. Al Qaeda religious leaders famously issued a fatwa calling on the faithful to develop nuclear weapons, and several other terrorist groups have expressed nuclear ambitions. DAESH has mastered chemical weapons technology, proving that there is no durable taboo on terrorist use of weapons of mass destruction.

While it is not easy, it is equally not too difficult for terrorists to manufacture a crude but effective nuclear device. This is because terrorists have different requirements than nation-states in making a nuclear explosive device: nation-states are typically seeking small, reliable devices that can be safely handled and delivered in the form of land mines, artillery, airplanes, or missiles. By contrast, terrorist bombs are likely to be large, simple devices delivered by truck or small airplane or boat, and they will not be reliably constrained by safety concerns in the assembly process or by the need to test a weapon. Design information for crude but effective nuclear devices is widely available in the public domain. The most effective way, therefore, to prevent a terrorist nuclear weapon is to prevent access to nuclear material.

In addition to having the required materials to create an actual nuclear explosive device, over 150

Addressing nuclear challenges during his first major foreign policy speech, April 5, 2009 in Prague, U.S. President Barack Obama pledged to hold a global summit on nuclear security. (Photo: Stringer/AFP/Getty Images)

countries have thousands of radioactive sources—made of special forms of cobalt, cesium, iridium and other elements—that are used in medicine, industry, agriculture, and research. Some of these are especially vulnerable to being used in a dirty bomb, which would not likely kill people but which would spread panic and cost billions to clean up. Such a radiological device would be quite simple to make, given the ease of access to disused or inadequately secured radioactive sources.

Why a Nuclear Security Summit

The first summit to ever highlight nuclear security was held in 1997 in Moscow among what was then called the P-8 (the G7 countries—Canada, France, Germany, Italy, Japan, United Kingdom, United States—plus Russia), at the height of the worries about "loose nukes" that might emerge from the chaos of the Soviet break-up. However, concerns about nuclear terrorism extended back to the 1970s, and initial steps were taken through the International Atomic Energy Agency (IAEA) and the negotiation of a treaty on physical protection of nuclear materials in transit between countries.

Even now, however, there are no binding international rules or inspections to verify effective nuclear security. This is because nuclear security has been understood as an exclusively sovereign, national responsibility, and the five recognized nuclear weapons states were seen as generally responsible stewards of their nuclear material. The Soviet collapse called this assumption into question with the creation of three new countries with nuclear weapons on their territories: Belarus, Kazakhstan, and Ukraine. The United States, and several other countries, reacted with the creation of a range of cooperative programs to remove and consolidate materials, improve storage, update accounting, install equipment, train personnel, and many other efforts under the Cooperative Threat Reduction (CTR) rubric, first championed by US Senators Sam Nunn and Richard Lugar. The CTR Program helped achieve the denuclearization of Belarus, Kazakhstan, and Ukraine, thereby assuring a single nuclear successor state: Russia.

After the 2001 terrorist attacks in the United States, these bilateral programs expanded into global efforts to remove, reduce and protect weapons-usable material wherever it was located, motivated by the recognition of the high degree of skill and resources displayed by the 9/11 attackers, as well as by their stated intent to kill 2-4 million people. These were shocking differences from the more limited, political terrorism of the 1970s and 1980s, and created both a sense of urgency and a wider geographic scope for these materials security program.

President Obama's call for a summit eight years

later was intended to ramp up these efforts, recognizing that while enormous progress had been made, it would take political will at highest levels to do some of the hard and in some cases expensive work required to eliminate materials and reduce nuclear terrorist threats. Examples include shutting down facilities, shifting away from established technologies, and cultivating enduring security capacities and cultures across a variety of government and non-government entities.

With these threats in mind, the NSS had two goals. First, they were designed to energize, elevate, enhance, and empower existing international organizations and initiatives already working to address nuclear security problems. These include: (1) **the United Nations**, which has mandated binding steps for all countries to prevent terrorist access to weapons of mass destruction; (2) **the IAEA**, which generates voluntary guidance on nuclear security and provides technical advice to member states; (3) **INTERPOL**, which coordinates the law enforcement aspects of nuclear smuggling, nuclear forensics, and nuclear detection; (4) **the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction**, which began as a G8 initiative and has now grown to over 25 countries providing resources and cooperation to improve nuclear security; and (5) **the Global Initiative to Combat Nuclear Terrorism**, through which 80-plus countries cooperate and share experiences to build their own national capacities against nuclear terrorism. In sum, these five groups represent the core of the global nuclear security architecture.

The second goal of the NSS expected participants to generate specific deliverables as part of their Summit participation. Specifically, to create/provide real, tangible steps they would take to increase nuclear security and thwart nuclear smuggling either in their own country or in cooperation with other countries or international organizations. These commitments were called "house gifts," and later, we saw the power of gathering similar pledges from different countries into what were called "gift baskets," or collective commitments to take a common set of actions. As a point of comparison, "house gifts" were voluntary pledges made by single countries to improve nuclear security, while "gift baskets" were pledges made by multiple countries that went beyond the summit communiqués.

As with any international gathering, building the guest list was critical. Recognizing that a Summit of almost 200 leaders would be too unwieldly to yield meaningful progress, a diverse set of participants was intended to be seen as representatives of the global community, so that the areas that found agreement on would be accepted by others as more legitimate than a set of pronouncements from a narrower but more like-minded group. The invitations spanned geography and ideology, but also spanned a range of experiences and expectations regarding nuclear weapons and nuclear energy.

In total, 53 countries participated in the NSS. The first NSS was held in Washington, D.C., in 2010, and marked the largest gathering of world leaders in the history of the US capital. Subsequent summits were hosted in 2012 by South Korea in Seoul, in 2014 by the Netherlands in The Hague, with the final Summit returning to Washington, D.C. in 2016.

The Summits focused narrowly on the security of nuclear—and later, radiological—material, leaving the canonical "three pillars" of the nuclear Nonproliferation Treaty (NPT)—disarmament, nonproliferation, and peaceful uses of nuclear energy —to the forums in Geneva, New York, and elsewhere that were designed to host those increasingly bitter debates.

Summit Outcomes

Each Summit generated a communiqué, agreed by consensus, containing shared principles and commitments, but also several caveats and constraints. The 2010 NSS also generated a Work Plan with detailed steps to promote nuclear security. Over the course of the four Summits, over 935 commitments—"house gifts"—were presented through national progress reports or leaders' statements during the Summits. Notable examples included:

- Over 40 NSS participant countries have engaged in capacity building, whether through training, Centers of Excellence, or exercises
- Over 30 countries have updated national laws, regulations, or structures relating to nuclear security
- Approximately 28 countries have held or invited peer review missions, either bilaterally or through the IAEA's International Physical Protection Advisory Service, and additional requests keep growing
- 36 countries have pledged to strengthen nuclear security implementation through subscribing to the 2014 Joint Statement on Strengthening Nuclear Security Implementation (INFCIRC/869), to implement IAEA guidelines into national regulations
- 18 have taken steps to increase the security of radioactive sources
- 17 countries have been involved in removal or disposal of nuclear materials, or minimization of highly enriched uranium. Today, only 22 countries—down from 50

President Barack Obama (top center) hosts 46 visiting leaders at the start of the plenary session of the first Nuclear Security Summit April 13, 2010, in Washington, DC. The summit ended with an international vow to safeguard all nuclear material against terrorists within four years. (Photo: Paul J. Richards/AFP/Getty Images)

—have weapons usable nuclear materials on their territory. As a result, three entire geographic regions—South America, Southeast Asia, and Central and Eastern Europe—have entirely eliminated HEU.

- 15 countries have carried out physical security upgrades or acquired security or detection equipment
- A dozen countries have joined or launched new international or regional structures to support nuclear security cooperation
- 12 countries have indicated their financial contributions to support bilateral or international cooperation in nuclear security
- 29 countries and the United Nations have committed to ensure adequate cyber security at industrial control and plant systems at nuclear facilities

Moreover, dozens of "gift baskets" represented pledges made by different groupings of Summit participants who were taking particular actions. Topics included centers of excellence, radioactive source security, nuclear security smuggling, HEU minimization, insider threats, etc.

In addition to these national and collective pledges, a further notable accomplishment of the NSS process was that two key nuclear security treaties gained dozens of new adherents. The 2005 Amendment to the Convention on Physical Protection of Nuclear Materials saw a five-fold increase in ratifications between 2009 and 2016, finally reaching the 101 countries required for that amendment to enter into force. The Amendment expanded the Convention's coverage to include not only nuclear materials in transit, but also in storage and use. A similar uptick occurred in the ratifications of the International Convention on Suppression of Acts of Nuclear Terrorism.

Recognizing the need for a forward vision as the Summit process concluded in 2016, participants approved five Action Plans that were designed to infuse Summit priorities into the five enduring organizations and initiatives through their normal decision-making processes.

These achievements represent tangible, practical steps towards protecting nuclear and other radioactive material and building up the global nuclear security architecture. Less tangibly, the NSS began to dilute the idea that nuclear security is the exclusive purview of sovereign states, and gave traction to the notion that a country's neighbors, allies or rivals have a legitimate stake in how effectively it implements its nuclear security responsibilities.

Yet, the hopes and expectations of many of the NSS participants regarding prioritization of nuclear security still remain unrealized. Reasons include differential threat perceptions, lack of progress toward disarmament, residual resentments regarding the "exclusivity" of the Summit process, budget politics within the IAEA, Russian efforts to undermine anything that could be seen as a Summit legacy, and

the false narrative that nuclear security concerns nuclear weapon states only. Moreover, perennial negotiating challenges included how to characterize the relationship between nuclear security and the NPT, whether nuclear materials contained in weapons or weapons programs were included, and the appropriate balance between sharing information and protecting secrets.

Lessons from the Summits

Perhaps the most important lesson learnt from the NSS is that top-level leadership still matters. Given the "Summit fatigue" that clearly drove the NSS leaders to agree that 2016 would be the last, it is unlikely there will be enthusiasm to restart the process. But somehow, leaders and their immediate advisors need to keep an eye on the commitments made during the Summit process and hold their bureaucracies accountable for executing them, in Vienna, New York, and in other relevant venues.

Expanded leadership is also beneficial. Through the Summit process, countries such as South Korea, Australia, Morocco, Spain, Hungary, Jordan, Norway, Netherlands, Canada and a few others have stepped up to take on various parts of the nuclear security agenda and put time and political resources into specific projects. Other countries are needed to diversify this team regionally, especially if the United States becomes a less visible, and potentially less attractive, leader on this topic.

One project still on the table is the formal recognition of **HEU-free zones** that exist in South America, Central and Eastern Europe, and Southeast Asia. Initial efforts to create such zones in 2016 fell afoul of certain countries' hope to preserve the potential for HEU usage in naval propulsion or perhaps even nuclear energy. Perhaps these initiatives can be revitalized now that the artificial division between Summit participants and those who were not participating within a single region has been softened.

The security of nuclear materials in military programs remains another area where progress is needed. Organizations with universal memberships have proven to be poor venues to make progress on this issue, both because fewer than ten countries have military nuclear material, and because non-weapons states have been unable to articulate their precise expectations. Nonetheless, countries with weapons programs can and should do more to inform non-weapons states about the nature of security applied to nuclear weapons programs. The United States, and to a lesser degree the United Kingdom and France, provide some unilateral transparency on the security of their weapons materials, but more coordinated ways could be explored to provide assurances, perhaps starting with the P-3 (United States, UK, France), then spreading to the P-5 (P-3 and China and Russia), then eventually involving all states with weapons.

Maintaining Momentum

So, what now? There are at least six mechanisms the international community has at its disposal to continue the NSS process.

1. The highest hopes for carrying forward the spirit of the Summits are lodged in the **IAEA Nuclear Security Ministerials**. These triennial IAEA ministerial meetings provide platforms to stimulate high-level commitment to nuclear security and to convene international experts to discuss nuclear security technologies and operations. The first was held in July 2013, and the second in December 2016, with the third planned for 2019.

   Most Summit advocates were disappointed with the decline in ambition and common viewpoint between the 2013 and 2016 Ministerials. Contrary to the expectation of many, the problem of using the IAEA Action Plan as inspiration for the ministerial declaration was not primarily about moving from 50 Summit states to 170 member states—in the end, it was essentially the same countries that had been most active in the Summits that were arguing well-known sides of the canonical arguments about funding, military materials, and disarmament. Unfortunately, the US goal of transferring the tradition of deliverables from the Summits to the ministerial also went largely unfulfilled, despite extensive diplomatic engagement in the months prior to the meeting. It remains to be seen whether these Ministerials can become more effective tools for transferring concepts and behavior from the Summits into the broader IAEA community.
2. **The Nuclear Security Contact Group** was created to maintain the valuable connections among the senior expert officials who guided the Summit preparations, known as Sherpas, and to offer a role to countries not included in the Summits who wished to promote nuclear security. The Contact Group is the logical engine for ongoing work on the five Action Plans, for maintaining connections with civil society and industry communities, and for staying up-to-date on evolving nuclear security challenges. Leadership of the Contact Group has passed from Canada to Jordan, and will be carried out by Hungary and Argentina going forward. Finding the right blend of ex-Sherpas, Vienna- and New York-based ambassadors, and new players to preserve and transfer knowledge will, however, be a challenge.

3. The Strengthening Implementation joint statement, also known as **INFCIRC/869**, is one of the most powerful gift baskets to have come out of the NSS process. In this statement, 36 countries pledged to incorporate the intent of the primary IAEA nuclear security guidance documents into their national regulations, essentially making these voluntary guidelines binding at the national level. This statement attracted critical new adherents at the 2016 Summit in India and China, but there has been little action since then, despite repeated diplomatic pressure on key countries to make such an announcement at the 2016 Ministerial. Several other gift baskets were also turned into IAEA INFCIRCs—Information Circulars —allowing countries not part of the Summit process to participate in these pledging exercises. This continues to be a worthwhile effort, but it will need ongoing attention-raising efforts in Vienna and in capitals.
4. The two dozen or so **Centers of Excellence** provide additional platforms for the continuation of nuclear security efforts. Whether it is certification of demonstrable competence—as called for in INFCIRC/869—or development of security technologies to keep up with new threats, such as cyber and drones, or platforms for standardized IAEA curricula for regional training, or venues for engaging industry and civil society partners, these centers have enormous potential.
5. The Nuclear Threat Initiative will be building out the participation of nuclear industry participants in their **"Global Dialogue Plus"** continuation of their very successful Track 1.5 effort, begun in 2012 to support the Summit process. This dialogue, combined with the intent of the nuclear industry to continue their Summits and include expert NGOs, provide two useful platforms for **nuclear industry-civil society cooperation**. The Contact Group also has that mission, but it is not yet clear how that will be implemented. Industry can do much more to contribute to nuclear security outcomes, including through the Nuclear Industry Steering Group in Security, the post-Summit organization to maintain the commercial nuclear community's focus on nuclear security.
6. Now that the 2005 amendment to the **Convention on Physical Protection** has entered into force, its terms require a conference to review implementation in 2021. Some countries are already developing concepts that can be matured for adoption at this meeting, such as recreating a habit of deliverables, and submitting national reports on the progress of implementing the Convention.

All six mechanisms point the way to the next great challenge of nuclear security—how to "bake it in" to the thought process and behavior of those entities who have nuclear security responsibilities, which means **incentivizing good behavior** with benefits that are attractive to the operators. As long as nuclear security remains an unpredictable externality to be resisted, it will be fragile. Excellent nuclear security behavior should become part of the branding or value proposition for nuclear commerce.

Conclusion

In the almost two years since the final Summit, and despite best intentions and specific efforts, the momentum has certainly slowed. The ambitions of the NSS to elevate, enhance, empower and energize existing multilateral organizations and initiatives that work on nuclear security have been only partially fulfilled. Working-level officials often seem to have forgotten about the pledges their leaders made.

On the other hand, many of the achievements of the Summit process are enduring and permanent, and individual countries like Jordan, Lithuania, Hungary, Argentina and others are continuing to prioritize nuclear security in their domestic policies and international advocacy.

Looking forward, we must collectively find the motivation for continued concrete action to enhance nuclear security. Otherwise, we are doomed to wait for a major nuclear security incident to finally take the steps that we know now must be done.

Ambassador Laura S.H. Holgate leads the Nuclear Threat Initiative's programs to secure nuclear and radiological materials around the world. Prior to rejoining NTI, Ambassador Holgate was the US Sherpa to the Nuclear Security Summits, and later served as the US Representative to the Vienna Office of the United Nations and the International Atomic Energy Agency from July 11, 2016 to January 20, 2017. In this role, Ambassador Holgate advanced global approaches to reduce international threats and seize opportunities in the areas of nuclear nonproliferation, nuclear security, verification of the Iran Deal, nuclear testing, counterterrorism, anti-corruption, drug policy, export control, and the Nuclear Suppliers Group.

From 2009-2016, Ambassador Holgate was the Special Assistant to the President and Senior Director for Weapons of Mass Destruction Terrorism and Threat Reduction on the National Security Council. In this role, she oversaw and coordinated the development of national policies and programs to reduce global threats from nuclear, biological and chemical weapons; detect, identify, secure and eliminate nuclear materials; prevent malicious use of biotechnology; and secure the civilian nuclear fuel cycle.

The Amended Convention on the Physical Protection of Nuclear Materials (CPPNM): What has been Achieved and What Remains to be Done

By Ambassador (ret.) Kees Nederlof

Significance of the Amendment to the Convention

After years of hard work, together with many international seminars and numerous discussions with Member States, not to mention the Nuclear Security Summit (NSS) process that began in 2010, the quorum of required ratifications necessary to achieve entry into force of the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material (CPPNM) was finally reached in 2016. Interestingly, it happened on the eve of the 2016 NSS in Washington, D.C., a clear indication that states invited to participate in the NSS helped to reach that goal. Indeed, the NSS process encouraged participating states to take action on the Amendment.

The amendment changed the convention profoundly: initially, the 1979 CPPNM was an instrument to secure civil nuclear material during international transport, but the Amendment transformed that into one ensuring the physical protection of all civil nuclear materials and facilities, preventing and combating related offenses, and facilitating co-operation among the States Parties. The original convention had been the result of the 1975 Nuclear Non-Proliferation Treaty (NPT) Review Conference: parties to that treaty believed that nuclear material would be particularly vulnerable during international transport, potentially creating a gap in the safeguards system. The *domestic* protection of nuclear material and facilities against unlawful acts had actually been raised during the negotiations, but parties could not agree on broadening the convention's scope at that point in time.[1]

This change shows how thorough the 2005 amendment process was since it basically created an entirely new instrument. At the same time, the extent of the changes explains why it took states so long to endorse it, and to obtain the necessary ratifications for entry into force.

However, not all the Amendment's articles are entirely new. Article 3 contains the twelve "Fundamental Principles of Physical Protection of Nuclear Material and Nuclear Facilities" that had been copied from document INFCIRC/225/rev.4 (currently rev.5 and incorporated into *IAEA Nuclear Security Series No. 13*).[2] The first principle defines that the State bears the sole responsibility for establishing and maintaining a physical protection regime and the other principles specify what essential elements the regime should be composed of. These principles touch upon the legislative framework, the creation of a competent authority, the responsibility of the license holders, security culture, threat assessment, basic approach for physical protection, contingency planning and maintaining confidentiality. Incorporating these fundamental principles into the treaty text established a link between the convention and the International Atomic Energy Agency (IAEA)'s *Nuclear Security*

1. It was, however, mentioned in the preamble: "Stressing also the importance of the physical protection of nuclear material in domestic use, storage and transport".
2. "Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225/Revision 5)", IAEA Nuclear Security Series No. 13, 2011: https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1481_web.pdf

Highly-enriched uranium is removed from Hungary, November 2013. The 1979 CPPNM put in place physical protection requirements for nuclear materials during international transport. The 2005 amendment extended physical protection provision to include domestic storage and transport. (Photo: National Nuclear Security Administration)

Series. Together with the other documents from the IAEA's Nuclear Security Series that deal with specific elements of nuclear security, they have become part of the larger nuclear security architecture.

Two issues of note were broadened and strengthened under the Amendment:

1. The provisions on sharing information and co-operation among States and with the IAEA in case of a nuclear security incident: Such incidents might include sabotage, theft, or an imminent threat thereof. The IAEA is not only the depositary of the treaty, but it also plays a central role in its implementation, acting as a clearing house for information sharing and, upon request, as a source of advice and assistance.
2. The obligations of States Parties to make nuclear security offences punishable under national law and how they should handle the extradition of suspects.

In addition, through Article 16, the amended convention prescribes that a Review Conference be held five years after the entry into force of the Amendment, hence in 2021.[3] This is an important

3. Article 16 of the 2005 CPPNM/A states: 1. A conference of States Parties shall be convened by the depositary five years after the entry into force of the Amendment adopted on 8 July 2005 to review the implementation of this Convention and its adequacy as concerns the preamble, the whole of the operative part and the annexes in the light of the then prevailing situation; 2. At intervals of not less than five years thereafter, the majority of States Parties may obtain, by submitting a proposal to this effect to the depositary, the convening of further conferences with the same objective.

requirement, since the original convention has only been reviewed once, in 1992.

What Remains to be Done

No matter how important the entry into force of the Amendment is, it certainly does not signal the completion of the work as it pertains to implementation, which can be explained by three reasons. First, the Amended convention should become **universal** (the "norm"). In other words, the effort to convince states to accept it will continue. Currently, out of the 156 states that acceded to the original CPPNM, 116 states have ratified/accepted the amendment. Within the NSS context, out of the 53 participating states, only six states are non-party to the Amendment. Remarkably, even after the amendment's entry into force, the IAEA still accepts states acceding to the original treaty. Moreover, it **requires** states that are not party to the original treaty to accede in a *two-step approach*: first to the original, unamended convention and then to the 2005 Amendment. According to the IAEA's legal department, the original treaty will disappear and not be accessible anymore after all original Convention States have accepted the Amendment, a line that shifts if third states at this point continue to join the original Convention and not the Amendment.[4] The consolidated text of the Amended CPPNM, therefore, still has an "unofficial" status.[5]

Second, the original convention already had an **information sharing obligation**. Article 14.1 stipulates that the parties must inform the IAEA of "its laws and regulations which give effect to this Convention". Unfortunately, only a small portion of the States Parties actually complied. This requirement has gained importance after the entry into force of the Amendment. Now, states must provide an overview of their legislation governing nuclear protection measures of *all* civil nuclear materials and facilities, including how they have implemented the twelve fundamental principles. The IAEA is reluctant to provide information about the actual level of compliance, though Article 14.1 obligates the IAEA to "communicate such information periodically to all States Parties".

Third, the **2021 Review Conference** will have to be prepared. This means: (1) agreeing on an invitation policy, specifically, who will get invited: only states who accepted the Amendment or others as well?; (2) determining the scope of the Conference, specifically, *which part* of the Convention should

be reviewed, and in *what manner*; (3) where the Conference will be held (most likely in Vienna); (4) what Rules of Procedure shall apply; and (5) how the Conference will be financed.

Fortunately, Article 16 already provides some answers—at least as it pertains to the scope of the Convention. Article 16 states: "To review the implementation of the Convention and its adequacy as concerns the preamble, the whole of the operative part and the annexes". Concerning the information sharing obligations, Article 14.1 will certainly be examined and discussed.[6] Most likely many States will hasten to fulfill their obligations by—inter alia—submitting a report required by Article 14.1 prior to the CPPNM Review Conference (RevCon).

As is customary, some of the preparatory work will be done by the so-called "PrepComs" prior to the actual conference. The IAEA has already tabled this issue and held two "technical meetings" of States Parties representatives. The first took place in November-December 2016, while the second took place a year later in November 2017. The latter included a one-day session dedicated to discussing

4. As an example, Zambia acceded to the original text in 2016 but has yet to join the amendment.
5. See: INFCIRC/274/Rev.1/Mod.1/Annex
6. Article 14.1 of the 2005 CPPNM/A states: "Each State Party shall inform the depositary of its laws and regulations which give effect to this Convention. The depositary shall communicate such information periodically to all States Parties."

During the April 1, 2016 Nuclear Security Summit in Washington, D.C. President Barack Obama announced that the necessary ratifications were obtained for the CPPNM 2005 Amendment to enter into force.
(Photo: Saul Loeb/AFP/Getty Images)

RevCon preparations. Moreover, many of the aforementioned issues were also discussed and there was broad agreement to plan at least one official PrepCom in 2020. In this PrepCom decisions will be taken concerning invitation policy, venue, finances, Rules of Procedure, and a broad agenda. But, since it will be almost impossible to come to a decision during the few days of the PrepCom on such thorny issues as the Rules of Procedure and the scope of the RevCon, the informal negotiation process will have to begin much earlier, ideally sometime in 2018.

If the work at the RevCon is to be thorough and effective, it should be based on facts and figures. One way to achieve this is by submitting a *questionnaire* to the States Parties. The answers may offer valuable insight in the actual implementation of the convention, including the hurdles and lacunas states have experienced. Ideally, this will contribute to a more systematic review discussion in 2021. However, questionnaires are often controversial and create a lot of resistance since they may be considered incompatible with confidentiality rules, have no legal basis, and require a lot of work to respond to in a timely manner. More importantly, states may fear that their responses force them to disclose shortcomings and non-compliance. Therefore, if the tool of a questionnaire were to be accepted, it is important to note that replying would be voluntary and at the discretion of the States Parties.

Concluding Points to Consider

The big question mark that remains is how to avoid the review process being hijacked by politics. Gone are the times that the work of the IAEA was considered purely technical. During *Nuclear Security Resolution* discussions in past years' General Conferences, heated political discussions were held on issues like *financing* nuclear security from the regular budget, whether *non-proliferation* and *disarmament* paragraphs should have a place in the text, and to what extent the security of *military material* (including material in "nuclear weapons") would be mentioned. At the CPPNM RevCon, these arguments will likely start at the preparatory phase when the scope is considered. Further, we should not forget that the CPPNM RevCon is taking place one year after the NPT RevCon is being held; the latter might either end with a proper *final declaration* or with political turmoil,

as witnessed in 2015. In any case the NPT, with its Article VI disarmament obligation and its designation of two categories of States Parties, is much more political. Ideally, at the 2021 CPPNM RevCon, these types of discussions should be restricted to the minimum, leaving sufficient time to deal with the implementation and adequacy of the CPPNM.

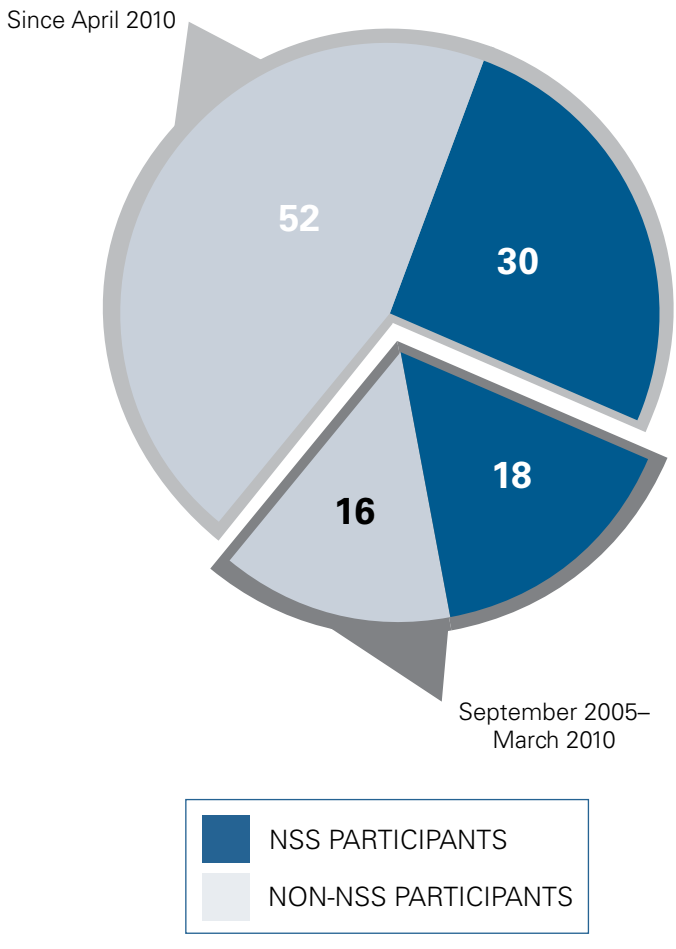
The outcome of the adequacy discussion **could** lead to the conclusion that the CPPNM needs another amendment. My expectation is that such an outcome is very unlikely since there appears to be little interest in another cumbersome negotiating process (and entry into force) right now. There is still little experience with the current treaty obligations and room to improve upon its implementation in practice, therefore it will be better to avoid that path and postpone an amendment discussion until a future review process.

Nonetheless, the Amended CPPNM is not a flawless instrument. The most significant share of nuclear material—military material—is excluded from the scope of the treaty, aside from a cursory mention in the preamble, and there are no verification measures, not even the peer pressure associated with the 1994 Convention on Nuclear Safety. While the former will not be rectified easily, to say the least, the latter already has a solution, albeit a voluntary one: the IAEA International Physical Protection Advisory Service (IPPAS) missions. IPPAS missions offer states an option to have their nuclear security and physical protection framework assessed by experts from the IAEA and from other nations. This is a very important IAEA "service" that has gained a lot of interest and use from Member States. I would not be surprised if the RevCon examines IPPAS and other IAEA services as complementary tools and the RevCon's final document makes more than an obligatory reference to it.

Another lacuna is the absence of measures to protect radiological material from falling into the wrong hands. However, radiological material has been dealt with in the *International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT)*, although this convention focuses on criminalization and not specifically on physical protection.

This leads me to the hope that the review process will take a 360-degree look at physical protection, taking into consideration other instruments and resources, offering states a genuine path to continue to improve their safeguarding of nuclear material and facilities.

Ratifications of the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material



Kees Nederlof has been a Netherlands' Ambassador for Nuclear Security until his retirement in July 2017. He represented his country as the International Coordinator of the Global Initiative to Combat Nuclear Terrorism (GICNT) from 2015-2017 and as Sherpa in the Nuclear Security Summit process after the 2014 Hague Nuclear Security Summit. Prior to that, he was sous-Sherpa in the preparatory team for the Summit in The Hague. He also served at the Dutch EU mission in Brussels as head of the Research and Nuclear Affairs department and as deputy Permanent Representative of The Netherlands to the IAEA.

Methodology

This report provides a cumulative overview of what states have done to strengthen nuclear security during the course of the NSS process (2010-2016). It covers all the national nuclear security commitments that have been made by NSS participating countries, from when the first summit took place in April 2010 through the last summit held in April 2016.

In line with previous reports on the NSS, this report features 53 country profiles which exemplify how the summit's political momentum resulted in tangible actions in each participating country. These actions are organized into five categories:

1. Nuclear and radiological security
2. Counter nuclear and radiological smuggling
3. Education and training
4. Governance structures and process
5. Joint statement participation

These categories were developed by the authors and do not reflect an official categorization of summit outcomes by governments. However, categorizing action in this way provides a clearer picture of what types of activities states chose to focus their attention on during the summits. The dates at the end of each action are reflective of when a state announced a commitment. For example, (2010) refers to the first NSS held in Washington, D.C., (2012) refers to the second NSS held in Seoul, South Korea, (2014) refers to the third NSS held in The Hague, The Netherlands, and (2016) refers to the final NSS held in Washington, D.C. If a state referenced a commitment at multiple summits, each year is included.

The profiles strive to be comprehensive but are not necessarily exhaustive, given the inherent limitations on information availability and the ongoing nature of some projects. The profiles differentiate between completed and ongoing activities as much as possible through verb tenses. Information provided by states on activities completed before the summit process began was excluded. Moreover, each country profile includes the dates of when they acceded to the CPPNM/A and ICSANT, together with their GICNT membership status.

Information for this report is primarily drawn from the national progress reports submitted by states at the 2012, 2014, and 2016 summits. All of the 53 participants issued at least one voluntary report and nearly all of the participating states issued progress reports for every summit attended.

There is substantial variation in what states chose to include in their progress reports, as states rejected the proposal for a common reporting form ahead of the 2012 summit. However, many reports issued in 2014 and 2016 grew in length and sharpened in scope, demonstrating a clearer depiction of the state's national security regime, how it interacts with the international system, and why sharing this information is useful.

While the profiles indicate participation in the multilateral joint statements that groups of states collaborated on beginning at the 2012 summit, the extent to which each state implemented the joint statements is not reflected.

Many national progress reports included information about activities related to nuclear safety and nonproliferation. While there are linkages between these areas and nuclear security, actions to strengthen nuclear safety and nonproliferation are not reflected here as they are beyond the scope of this project.

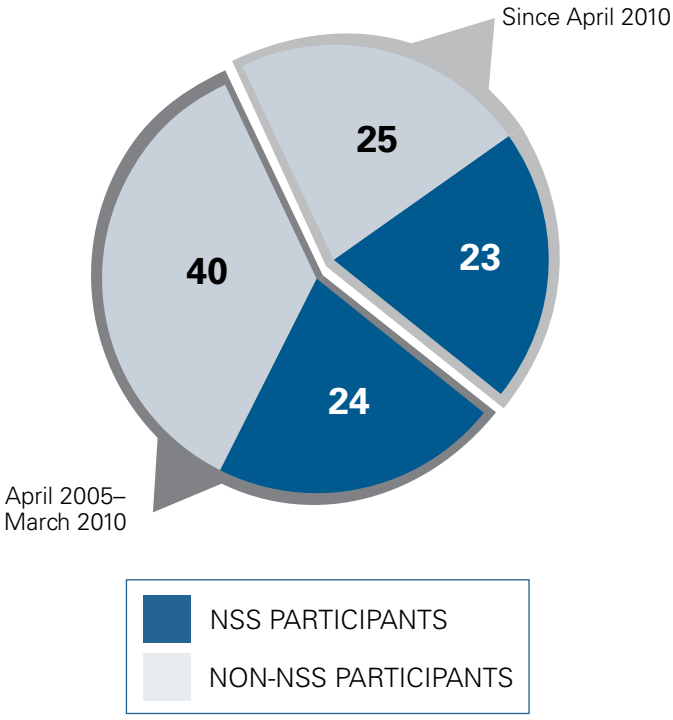
Participation in initiatives related to nuclear security is also not listed in the profiles. For instance, many states noted participation in the International Atomic Energy Agency's Incident and Trafficking Database, but that is not reflected in this report, as the profiles are meant to highlight actions taken during the summit process.

This report also drew statements made at IAEA General Conferences (2010-2017), IAEA Nuclear Security Reports (2010-2017), and at the 2015 NPT Review Conference. Information references from these sources is not individually cited.

In mid-2018, drafts of each country profile were sent to respective embassies in Washington, D.C. States were given the opportunity to confirm details and specify additional nuclear security related projects from the summit period. The final inclusion of any data provided was at the authors' discretion.

BY THE NUMBERS: SUMMIT ACCOMPLISHMENTS
APRIL 2010 – APRIL 2016

Ratifications of the International Convention for the Suppression of Acts of Nuclear Terrorism



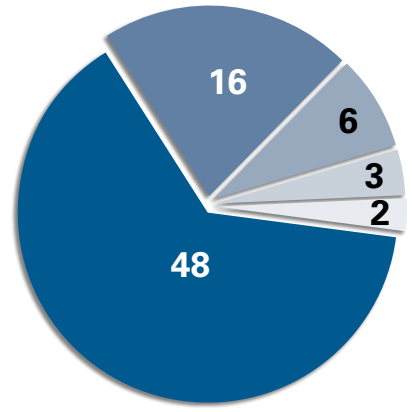
HEU-FREE COUNTRIES

- GHANA (Aug. 2017)
- POLAND* (Sept. 2016)
- INDONESIA* (Aug. 2016)
- ARGENTINA* (Apr. 2016)
- SWITZERLAND* (Sept. 2015)
- UZBEKISTAN (Sept. 2015)
- JAMAICA (Sept. 2015)
- HUNGARY* (Nov. 2013)
- VIETNAM* (July 2013)
- CZECH REPUBLIC* (Apr. 2013)
- AUSTRIA (Dec. 2012)
- UKRAINE* (Mar. 2012)
- MEXICO* (Mar. 2012)
- SERBIA (Dec. 2010)

*** Summit Participant**

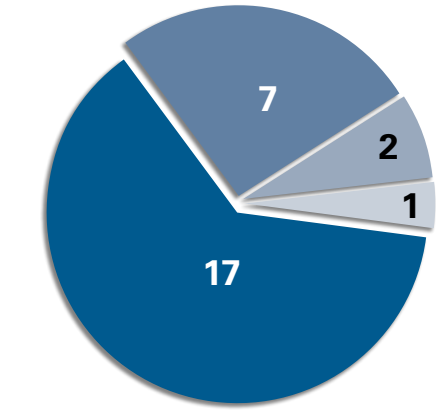
IPPAS MISSIONS BY REGION

1996–2016



*Africa conducted missions between 1996 and 2009.

2010–2016

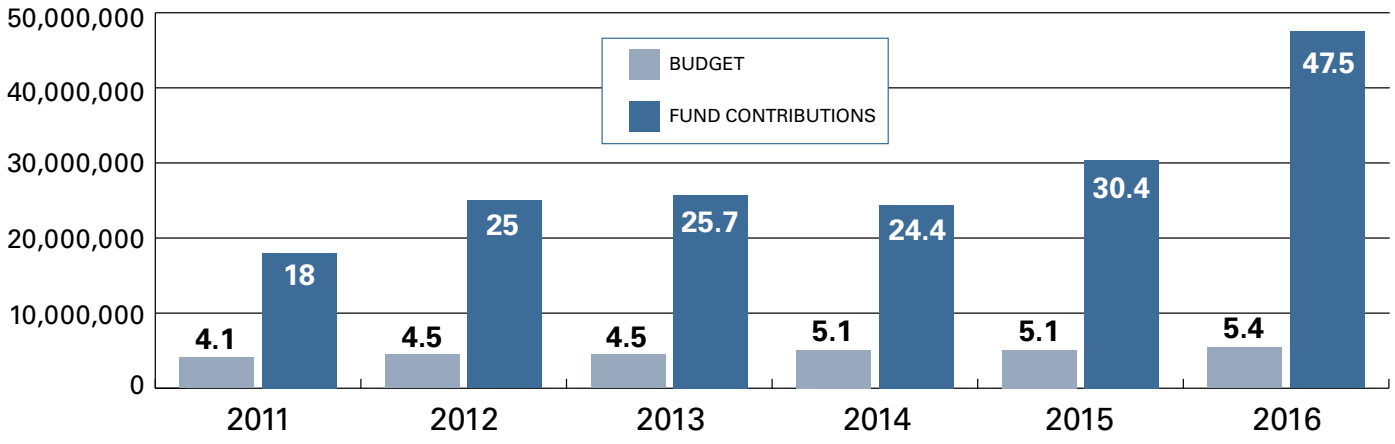


AFRICA: Did not conduct any missions from 2010–2016.

SUMMIT PROCESS

2010	2012	2014	2016
47 countries	**53** countries	**53** countries	**52** countries
3 international organizations	**4** international organizations	**4** international organizations	**4** international organizations
70+ national commitments	**100+** national commitments	**100+** national commitments	**100+** national commitments
1st of its kind high-level summit on nuclear security	**13** joint statements	**14** joint statements	**12** joint statements
	49 national progress reports	**49** national progress reports	**51** national progress reports

IAEA NUCLEAR SECURITY BUDGET AND NUCLEAR SECURITY FUND CONTRIBUTIONS
(MILLIONS OF EUROS)



Country Profiles

ALGERIA

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Committed to use LEU exclusively (2012)

Progress on Counter Nuclear and Radiological Smuggling

- Developed GPS monitoring system to track sensitive materials during transport (2012)
- Enhanced training programs for customs and border security to prevent illicit trafficking (2012)

Progress on Education and Training Initiatives

- Hosted several IAEA nuclear safety and security meetings (2010, 2012, 2014, 2016)
- Established a Nuclear Security Training and Support Center (2012)
- Organized national training course in nuclear security for the police in cooperation with IAEA, EU, and Interpol (2014)
- Organized a regional workshop on nuclear forensics in cooperation with the IAEA (2014, 2016)
- Implemented a master's degree course in nuclear security (2016)

Progress on Governance Structures and Processes

- Implemented INFCIRC/225/Rev 5 (2012)
- Implemented new laws and regulations to combat illicit trafficking of CBRN and reduce corruption (2012)
- Adopted Code of Conduct (2012)
- Cooperated with IAEA to elaborate and implement the integrated nuclear security and support plan (2014)
- Established security perimeters around three nuclear research centers (2014)
- Updated procedures to address nuclear security issues at borders (2016)

Participation in Joint Statements

- Nuclear Information Security (2012, 2014)
- Nuclear Security Training and Support Centers (2012, 2014)
- Comprehensive Approach to Nuclear Security (2014)
- Enhancing Radiological Security (2014)
- Forensics in Nuclear Security (2014)
- Strengthening Nuclear Security Implementation (2014)
- Comprehensive Approach to Nuclear Security (2016)

CPPNM: 2003

CPPNM/A: 2007

ICSANT: 2011

GICNT: Yes

ARGENTINA

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Developed and exported research reactors that produce medical isotopes using LEU (2012)
- Converted all research and multipurpose reactors in Argentina and abroad to operate with LEU (2012, 2014, 2016)
- Strengthened nuclear security of fuel element storage (2016)
- Met the total agreed stock targets of HEU through down-blending and disposing of existing inventory (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Strengthened border control national infrastructures and capabilities (2014)

Progress on Education and Training Initiatives

- Hosted WINS workshop for personnel in charge of nuclear security (2012)
- Incorporated nuclear security in graduate courses on nuclear and radiation safety in its training centers (2012)
- Hosted the first Sherpa meeting for the 2012 NSS (2012)
- Organized regional workshops on facilitating adherence to the 2005 CPPNM/A, nuclear and information security, and security of radiological sources in transport in cooperation with the IAEA (2014, 2016)
- Sent a technical assistance mission to Grenada covering nuclear regulatory issues (2016)
- Hosted a GICNT Response and Mitigation Working Group workshop and exercise with Chile (2016)

Progress on Governance Structures and Processes

- Reviewed and updated export controls focusing on licensing to prevent sensitive materials and technologies from being transferred to non-state actors (2012)
- Updated an independent regulatory system for controlling the use of radioactive materials (2012)
- Updated regulations for transportation of radioactive materials to encompass IAEA guidelines (2016)

Participation in Joint Statements

- Nuclear Security Training and Support Centers (2014, 2016)
- Comprehensive Approach to Nuclear Security (2014, 2016)
- Implementation of UNSCR 1540 (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- National Nuclear Detection Architecture (2016)
- Consolidated Reporting (2016)
- Forensics in Nuclear Security (2016)
- Cyber Security (2016)
- HEU Minimization (2016)

CPPNM: 1989

CPPNM/A: 2011

ICSANT: 2016

GICNT: Yes

ARMENIA

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Updated the physical protection of the Armenian nuclear power plant and radioactive waste storage facilities (2012)
- Upgraded security at radioactive waste and storage facilities (2012)

Progress on Counter Nuclear and Radiological Smuggling

- Revised physical protection system of radioactive materials (2012)
- Conducted a radiological material interdiction exercise with Georgia (2014)
- Established a forensics laboratory with the technical support of the United States (2014, 2016)

Progress on Education and Training Initiatives

- Conducted joint workshops on illicit trafficking of nuclear and radioactive materials (2012)
- Presented a national report on its activities in combating nuclear terrorism to UNODA (2016)
- Opened a training center at the State Engineering University of Armenia (2016)

Progress on Governance Structures and Processes

- Developed national rules on the physical protection of radioactive materials (2012)
- Completed the process of accounting for nuclear and radioactive materials and put them into a state register (2012)
- Applied legal and regulatory framework from the Code of Conduct (2014)
- Received an IPPAS mission (2014)
- Updated its INSSP for 2013-2015 (2014)
- Developed a new strategy on the safe management of radioactive waste and spent nuclear fuel (2016)

Participation in Joint Statements

- Nuclear Security Training and Support Centers (2014)
- Enhancing Radiological Security (2014)
- Strengthening Nuclear Security Implementation (2014)
- Implementation of UNSCR 1540 (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- National Nuclear Detection Architecture (2016)
- Consolidated Reporting (2016)
- Forensics in Nuclear Security (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)

CPPNM: 1993

CPPNM/A: 2013—*withdrew in 2016*

ICSANT: 2010

GICNT: Yes

AUSTRALIA

NSS Participant since 2010

WEAPONS USABLE MATERIAL

Progress on Nuclear and Radiological Security

- Repatriated surplus HEU (2012, 2014)
- Shut down its HEU-based reactor (2014)
- Committed to use only LEU technology to fuel its research reactor and produce radio-pharmaceuticals (2014)
- Repatriated all its spent fuel to the United States (2014, 2016)

Progress on Counter Nuclear and Radiological Smuggling

- Developed forensics to detect illicit materials in transit (2012)
- Provided IAEA with technical assistance for detecting and responding to illicit trafficking incidents (2012, 2016)

Progress on Education and Training Initiatives

- Supported more than 150 regional training courses on nuclear security and regional assistance program since 2005 (2012)
- Hosted workshops on transport security and IPPAS missions (2014)
- Tested operator security management system and coordination with national counter terrorism plans (2014)
- Chaired the GICNT Nuclear Forensics Working Group and hosted seminars and exercises (2012, 2014, 2016)

Progress on Governance Structures and Processes

- Implemented INFCIRC/225/Rev 5 (2012)
- Created a national database of Category 1 and 2 sources (2012)
- Implemented IAEA guidance on security of radioactive sources (2012)
- Received an IPPAS mission (2012)
- Revised its DBT to include a cyber security component in 2012 (2014)
- Developed detailed guidance for the classification of nuclear security-related information (2014)

Participation in Joint Statements

- Global Partnership (2012)
- Contributions of GICNT to Enhancing Nuclear Security (2012, 2014, 2016)
- Security of Radioactive Sources/Enhancing Radiological Security/High Activity Radioactive Sources (2012, 2014, 2016)
- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Strengthening Nuclear Security Implementation (2014)

AUSTRALIA (cont')

NSS Participant since 2010

- Maritime Supply Chain Security (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Implementation of UNSCR 1540 (2014, 2016)
- Nuclear Security Training and Support Centers (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- National Nuclear Detection Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Consolidated Reporting (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)

CPPNM: 1987

CPPNM/A: 2008

ICSANT: 2012

GICNT: Yes

AZERBAIJAN

NSS Participant since 2012

Progress on Nuclear and Radiological Security

- Established national registry of all radioactive sources (2012)

Progress on Counter Nuclear and Radiological Smuggling

- Strengthened export control system to combat illicit trafficking of nuclear materials (2012)
- Deployed additional portable radiation control devices and other detection capabilities at border crossing points (2016)

Progress on Education and Training Initiatives

- Hosted a regional roundtable on security culture in 2013 (2014)
- Organized seminars at the Baku Regional Office for Capacity Building of the World Customs Organization (2014)
- Increased staff training and deployed modern equipment and screening systems (2016)

Progress on Governance Structures and Processes

- Developed a comprehensive export control system (2010, 2012, 2014, 2016)
- Prepared a new law on radiation protection and nuclear security (2016)

Participation in Joint Statements

- None

CPPNM: 2004

CPPNM/A: 2016—withdrew in 2016

ICSANT: 2009

GICNT: Yes

BELGIUM

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Repatriated HEU and separated plutonium to the United States (2012, 2014)
- Converted research reactors and radioisotope facilities from HEU to LEU (2012, 2014)
- Restructured its physical protection systems in line with its new legal and regulatory framework (2014, 2016)
- Exchanged information with foreign authorities to share good cyber security practices (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Implemented Megaports Initiative (2016)

Progress on Education and Training Initiatives

- Held domestic workshops on nuclear security, insider threat, crisis communication (2012, 2014, 2016)
- Held a regional workshop on adherence to the 2005 CPPNM/A for African States (2014)
- Hosted IAEA workshops and increased joint training to address insider threat (2014, 2016)
- Established the Cyber Security Center (2016)

Progress on Governance Structures and Processes

- Updated its DBT (2012)
- Strengthened and updated physical protection legal and regulatory framework (2012, 2014, 2016)
- Received an IPPAS mission (2016)

Participation in Joint Statements

- Minimization of HEU and the Reliable Supply of Medical Radioisotopes (2012)
- Global Partnership (2012)
- Multinational Cooperation on High-Density and LEU Fuel Development (2012, 2014)
- Nuclear Information Security (2014)
- Nuclear Security Training and Support Centers (2014)
- Enhancing the Security of the Maritime Security Implementation (2014)
- Strengthening Nuclear Security Implementation (2014)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Consolidated Reporting (2016)
- Implementation of UNSCR 1540 (2016)
- Maritime Supply Chain Security (2016)
- Cyber Security (2016)
- Insider Threat Mitigation (2016)
- High-Density Fuel Development (2016)
- Security of High Activity Radioactive Sources (2016)

CPPNM: 1991

CPPNM/A: 2013

ICSANT: 2009

GICNT: Yes

BRAZIL

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Repatriated HEU fuel elements (2014, 2016)
- Converted all nuclear research reactors to use LEU fuel (2014, 2016)
- Implemented an Annual Program of Regulatory Security Inspections (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Improved security standards for the transport of nuclear material (2012)
- Collaborated with MERCOSUL to prevent, detect, and respond to the threat of illicit trafficking of nuclear and radioactive materials (2014)

Progress on Education and Training Initiatives

- Held national workshops and regional trainings on nuclear security in collaboration with IAEA (2012, 2014)
- Organized training courses for border officials on exchange of information for best practices (2012, 2014, 2016)
- Established a NSSC (2012, 2014, 2016)

Progress on Governance Structures and Processes

- Improved security standards in the transportation of nuclear and radioactive material (2012)
- Revised domestic regulations on nuclear, radiological, and transport security (2012, 2014, 2016)

Participation in Joint Statements

- National Legislation Implementation Kit (2014)
- Comprehensive Approach to Nuclear Security (2014, 2016)

CPPNM: 1985

CPPNM/A: Non-Party

ICSANT: 2009

GICNT: No

CANADA

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Committed to repatriate spent US-origin HEU fuel from its medical isotope production reactor to the United States by May 2019 (2010, 2012, 2014, 2016)
- Invested in R&D efforts for non-reactor-based technologies for the production of Molybdenum-99 and Technetium-99m (2010, 2012, 2014, 2016)
- Assisted with HEU removals from Mexico and Vietnam (2010, 2012)
- Committed to repatriating US-origin HEU in liquids generated as by-products from medical isotope production (2012)
- Committed to eliminating the use of HEU in the production of medical isotopes, and ceased HEU-based production of Molybdenum-99 in 2016 (2012, 2014, 2016)
- Funded consolidation and removal of disused sealed radioactive sources of Canadian origin in Latin America and the Caribbean, Southeast Asia, Africa and the Middle East (2012, 2014, 2016)
- Supported IAEA's demonstration of borehole disposal system in Ghana, the Philippines and Malaysia (2014)
- Funded the strengthening of physical protection of nuclear facilities in Southeast Asia and South Asia to help prevent theft of nuclear materials (2014)
- Assisted in a US-led reactor conversion and cleanout project in Jamaica (2014, 2016)
- Decommissioned an HEU-fueled SLOWPOKE research reactor at the University of Alberta, and repatriated the US-origin HEU fuel in 2017 (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Enhancing and expanding national nuclear forensics capabilities, including the development of a national nuclear forensics library and the establishment of a national network of nuclear forensics laboratories (2012, 2016)
- Enhanced capacities of Asian ports to detect and interdict WMD (2014)
- Implemented a risk-based security compliance inspection program for category 1 to 5 radioactive sources in 2013 and a comprehensive import and export control program for Category 1 and 2 radioactive sources (2014)
- Contributed CAD $15 million to strengthen the capacities of partner countries (Jordan, Peru, and others in Southeast Asia) to detect and interdict illicit cargos of nuclear and radiological materials (2014, 2016)
- Upgraded domestic radiation detection network (2016)

Progress on Education and Training Initiatives

- Championed the extension of the G7-led Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (2010)
- Provided technical and operational subject matter experts in the areas of nuclear forensics, counter nuclear smuggling, nuclear detection and CBRNe counter-terrorism to support bilateral cooperation and capacity building initiatives, as well as the development of INTERPOL CBRNe training exercises (2010, 2012, 2014, 2016)
- Supported the development of multiple GICNT exercises on enhancing capabilities for response, mitigation, and investigation of nuclear terrorism and conducted a national radiological security exercise, RADEX 2012 (2010, 2012, 2014, 2016)

CANADA (cont')

National and Multinational Commitment Results

- Hosted and funded WINS best practices workshops and guides (2010, 2014, 2016)
- Funded regional workshops to assist countries with implementing CPPNM/A (2012, 2014)
- Established regulations and procedures for the vetting and supervision of all nuclear industry staff (2014)
- Participated in the development and delivery of multiple ITWG nuclear forensics related exercises (2014, 2016)
- Funded a regional PSI seminar in the Caribbean (2014, 2016)
- Hosted an IAEA National Training Course on computer security and conducting assessments (2016)
- Supported IAEA's training of Malaysian experts to operate a Mobile Hot Cell (2016)
- Contributed funding to the IAEA to enhance regulatory infrastructure for nuclear security and safety in Africa and Latin America and the Caribbean (2016)
- Co-hosted with UNODC an event commemorating the 10th Anniversary of the entry-into-force of ICSANT in 2017 (2016)
- Took over Chairmanship of the Nuclear Forensics Working Group of the GICNT in 2017 (2016)

Progress on Governance Structures and Processes

- Ratified the CPPNM/A and ICSANT after enacting the 2013 "Nuclear Terrorism Act" (2012)
- Approved regulations to implement security requirements for radioactive sources in 2013 that are fully aligned with the IAEA's Code of Conduct on the Safety and Security of Radioactive Sources (2014)
- Established practices for nuclear information security (2014)
- Hosted an IPPAS mission in October 2015 (2014)
- Provided the UNSCR 1540 Committee with an updated UNSCR 1540 National Implementation Action Plan (2014, 2016)
- Published a national standard to address cyber security at nuclear power plants and small reactor facilities (2016)
- Adopted new nuclear civil liability legislation (2016)
- Updating DBT Analysis for nuclear high security facilities (2016)
- Led the "Nuclear Security Contact Group" which was formed to sustain momentum on generated by the NSS process (2016)

Participation in Joint Statements

- Global Partnership (2012)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- Nuclear Training and Support Centers (2012, 2014, 2016)
- Security of Radioactive Sources/Enhancing Radiological Security/High Activity Radioactive Sources (2012, 2014, 2016)
- National Legislation Implementation Kit (2012, 2014)

CANADA (cont')

National and Multinational Commitment Results

- Nuclear Information Security (2012, 2014)
- Strengthening Nuclear Security Implementation (2014)
- Implementation of UNSCR 1540 (2014, 2016)
- Maritime Supply Chain Security (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Certified Training (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Consolidated Reporting (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)
- Nuclear Terrorism Preparedness and Response (2016)

CPPNM: 1986

CPPNM/A: 2013

ICSANT: 2013

GICNT: Yes

CHILE

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Removed all HEU (2010)
- Strengthened security of industrial irradiation facilities and security infrastructure of sources in nuclear medicine (2014)
- Converted reactors to use LEU (2014)
- Continued strengthening the physical protection of nuclear and radiological installations (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Strengthened monitoring capability at critical border posts (2012, 2014, 2016)
- Developed a centralized remote system to monitor radioactive sources (2012, 2014, 2016)

Progress on Education and Training Initiatives

- Established working group to combat illicit trafficking, including training for MERCOSUR countries in 2011 (2012)
- Hosted several nuclear security trainings with IAEA on material accountancy, nuclear security, and the Code of Conduct (2012, 2014, 2016)
- Working with IAEA to establish NSSC (2012, 2014, 2016)
- Held regional workshops and training courses on nuclear security (2012, 2014, 2016)
- Conducted joint GICNT exercises with Argentina (2016)

Progress on Governance Structures and Processes

- Received an IPPAS mission in 2011 (2012)
- Implemented Code of Conduct (2012)
- Created draft plan of action on nuclear security activities (2012)
- Developed a Security Culture Awareness Plan (2014)
- Established an international coordinator for the prevention, detection, and response to radiological risk situations (2014)
- Established the Radiological Emergency Security Commission (2016)
- Joined the Global Partnership (2016)

Participation in Joint Statements

- Nuclear Security Summit Outreach Effort (2012)
- Nuclear Information Security (2012, 2014)
- Nuclear Training and Support Centers (2012, 2014, 2016)
- National Legislation Implementation Kit (2014)

CHILE (cont')

NSS Participant since 2010

- Countries Free of HEU (2014)
- Strengthening Nuclear Security Implementation (2014)
- Implementation of UNSCR 1540 (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Comprehensive Approach to Nuclear Security (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Consolidated Reporting (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)
- Security of High Activity Radioactive Sources (2016)

CPPNM: 1994

CPPNM/A: 2009

ICSANT: 2010

GICNT: Yes

CHINA

NSS Participant since 2010

WEAPONS USABLE MATERIAL

Progress on Nuclear and Radiological Security

- Upgraded security for radioactive sources (2012)
- Converting mini research reactors in China and of Chinese origin from HEU to LEU (2012, 2014, 2016)
- Decommissioned two HEU research reactors (2014)
- Conducted a national comprehensive examination on the safety and security of radioactive sources and radioactive materials in transport (2014)
- Completed construction of radioactive waste repositories and the national storage center for spent radioactive sources (2014)
- Continued construction on the National Base for Research and Development of Nuclear and Radiological Safety and Security Monitoring Technologies (2016)
- Completed conversion of Ghana's HEU research reactor and repatriated all HEU fuel to China in 2017 (2016)
- Conducted security inspections of over 15,000 users of radioactive sources (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Developed new equipment for border monitoring (2012)
- Expanded Megaports initiative to Yangshan port (2012, 2014)
- Established the China Customs Training Center for Radiation Detection and held trainings (2012, 2014, 2016)
- Installed more than 1,000 radiation detection units at gateway ports (2014, 2016)
- Implemented the latest nuclear export control list (2016)

Progress on Education and Training Initiatives

- Held training courses on nuclear security in cooperation with IAEA (2010, 2012, 2014)
- Established a Center of Excellence on Nuclear Security (2010, 2012, 2014, 2016)
- Translated 12 volumes of IAEA nuclear security series (2012)
- Received an IPPAS mission (2012)
- Established a national base for R&D of nuclear and radiological safety and security monitoring technologies (2014, 2016)
- Conducted a joint exercise with Russia on preventing illicit trafficking of nuclear and other radioactive materials (2016)

Progress on Governance Structures and Processes

- Signed Practical Agreement on Nuclear Security Cooperation with IAEA (2010)
- Implemented regulations developed by IAEA on safe management of radioactive waste (2012)
- Hosted an Asia-Pacific seminar to engage countries on the CPPNM/A (2014)

CHINA (cont')

NSS Participant since 2010

- Drafted comprehensive national nuclear security regulations (2014, 2016)
- Passed a law clarifying nuclear security's role in national security and anti-terrorism (2016)
- Published a policy statement on nuclear security culture (2016)
- Established annual bilateral nuclear security dialogues with the United States (2016)
- Signed cooperation documents with the United States and Russia on preventing illicit trafficking of nuclear and other radioactive materials (2016)
- Issued a White Paper on China's emergency preparedness (2016)

Participation in Joint Statements

- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- Countering Nuclear Smuggling (2016)
- Implementation of UNSCR 1540 (2016)
- Cyber Security (2016)
- Nuclear Training and Support Centers (2016)

CPPNM: 1989

CPPNM/A: 2009

ICSANT: 2010

GICNT: Yes

CZECH REPUBLIC

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Completed repatriation of remaining HEU stockpile to Russia (2012, 2014)
- Converted all nuclear reactors to use LEU (2014)
- Assisted with HEU repatriation programs in Bulgaria, Poland, Serbia, Hungary, and Vietnam (2014, 2016)

Progress on Counter Nuclear and Radiological Smuggling

- Joined the nuclear forensics laboratories working group (2014)
- Equipped law enforcement bodies with detectors to combat illicit trafficking (2014)

Progress on Education and Training Initiatives

- Held a course on physical protection of high-risk radioactive sources (2010)
- Established a Center of Excellence at the Nuclear Research Institute (2012, 2014)
- Hosted workshops on illicit trafficking and performance testing (2012, 2014)
- Held training courses on physical protection and export controls (2014, 2016)
- Conducted security exercises with its army and police (2016)

Progress on Governance Structures and Processes

- Updated its nuclear security laws to include airborne and cyber threats (2012, 2016)
- Hosted an IRRS follow-up mission (2016)
- Updated its DBT to include airborne and cyber threats (2016)

Participation in Joint Statements

- Global Partnership (2012)
- Nuclear Information Security (2012, 2014)
- Nuclear Training and Support Centers (2012, 2016)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- Security of Radioactive Sources/Enhancing Radiological Security/High Activity Radioactive Sources (2012, 2014, 2016)
- National Legislation Implementation Kit (2014)
- Countries Free of HEU (2014)
- Strengthening Nuclear Security Implementation (2014)
- Implementation of UNSCR 1540 (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)

CZECH REPUBLIC

NSS Participant since 2010

- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)

CPPNM: 1993

CPPNM/A: 2010

ICSANT: 2006

GICNT: Yes

DENMARK

NSS Participant since 2012

Progress on Nuclear and Radiological Security

- Repatriated spent fuel to the United States (2012)
- Decommissioning research reactors by 2018 (2012, 2014, 2016)
- Continued actions to limit the number of high-activity sources in blood irradiators (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Developed comprehensive database of radiological sources (2012)
- Implemented IAEA regulations on storage, imports, and exports of radiological sources (2012)
- Deployed portable radiation detection systems (2014)

Progress on Education and Training Initiatives

- Authored a report and hosted a seminar for the EU on the security of nuclear power plants (2012)
- Chaired the EU working group on nuclear security, theft, sabotage, and other hostile acts (2012, 2014)

Progress on Governance Structures and Processes

- Implemented regulations for use and possession of radioactive materials (2014)
- Implemented a revised nuclear emergency preparedness plan (2016)
- Committed to lifting reservations made when ratifying the CPPNM/A (2016)
- Requested an IRRS mission (2016)

Participation in Joint Statements

- Global Partnership (2012)
- Security of Radioactive Sources/Enhancing Radiological Security/High Activity Radioactive Sources (2012, 2014, 2016)
- Countries Free of HEU (2014)
- Strengthening Nuclear Security Implementation (2014)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- Countering Nuclear Smuggling (2016)
- Implementation of UNSCR 1540 (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Cyber Security (2016)
- HEU Minimization (2016)

CPPNM: 1991

CPPNM/A: 2010

ICSANT: 2007

GICNT: Yes

EGYPT

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Created a regulatory authority for radioactive sources (2012)
- Upgraded the physical protection systems of its research reactors (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Implemented Megaports initiative (2012)
- Continued developing the database on nuclear materials and radioactive sources (2016)

Progress on Education and Training Initiatives

- Hosted regional workshops on security culture and the ITDB (2012)
- Held national workshops and training courses on nuclear security, DBT, and radiological accidents (2012, 2016)
- Established a nuclear security support and training center (2016)

Progress on Governance Structures and Processes

- Passed a comprehensive nuclear security law (2010)
- Established independent authority for controlling nuclear materials (2012)
- Drafted a protocol for nuclear and radiological border security (2014)
- Signed the INSSP with the IAEA (2016)

Participation in Joint Statements

- Comprehensive Approach to Nuclear Security (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)

CPPNM: Non-Party

CPPNM/A: Non-Party

ICSANT: 2005 (signed)

GICNT: No

FINLAND

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Developing nuclear security and safeguards requirements for the encapsulation and disposal facilities of spent fuel (2010, 2012, 2014, 2016)
- Encouraged the replacement of radioactive material in blood irradiators with alternative technologies (2016)
- Publishing a study by STUK on the differences between X-ray and cesium blood irradiators in 2018 (2016)
- Funded a research and outreach program "Improving Radiological Source Security" with the Stimson Center in 2018 (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Contributing to nuclear smuggling border security projects in Eastern Europe and Central Asia (2012, 2014, 2016)
- Continued a program to update and enhance border monitoring (2012, 2014, 2016)
- Developed in-field radionuclide detection, identification, on-line data transmission (2014)

Progress on Education and Training Initiatives

- Hosted regional training courses and workshops on nuclear security culture (2012, 2014)
- Conducted joint national exercises for security of radioactive sources (2012, 2014, 2016)
- Held a cyber security meeting, nuclear security workshop, and insider threat training course with the IAEA (2012, 2016)
- Conducted national joint information security exercises (2014)
- Conducted joint national nuclear security exercises according to ongoing exercise plan since 2015 (2014, 2016)
- Establishing an information security/cyber security working group between license holders of nuclear facilities and relevant authorities (2016)
- Hosted a GICNT workshop, table-top exercise, plenary meeting, and experts meeting (2016)
- Hosted an IAEA regional training course in Conducting Computer Security Assessments in 2017 (2016)
- Conducted a technical reachback demonstration on detection with Estonia in 2017 (2016)
- Supported nuclear detection workshops and exercises organized by the GICNT in 2018 (2016)
- Hosted the Implementation and Assessment Group Meeting of the GICNT in 2018 (2016)
- Coordinator for the Implementation and Assessment Group of the GICNT for 2017-2019 (2016)

Progress on Governance Structures and Processes

- Received an IPPAS follow up mission (2010, 2012)
- Revised nuclear security regulatory requirements, including the 2013/2018 YVL Guidance revision, 2016 STUK regulation on nuclear security, and 2018 revision of Nuclear Energy Act for Security (2012, 2014, 2016)
- Implemented DBT requirements in Finnish nuclear facilities since 2013 (2012, 2014, 2016)

FINLAND (cont')

NSS Participant since 2010

- Revised security requirements for radiation sources in 2013 and 2018 (2012, 2016)
- Developed new requirements for operators to enhance nuclear information security (2014)
- Established a nuclear security commission (2014, 2016)
- Initiated a DBT revision (2016)
- Adopted a National CBRNe Strategy in 2017 (2016)
- Revision of national counter terrorism strategy in 2018 (2016)

Participation in Joint Statements

- Global Partnership (2012)
- Nuclear Information Security (2012, 2014)
- National Legislation Implementation Kit (2012, 2014)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- Security of Radioactive Sources/High Activity Radioactive Sources (2012, 2016)
- Strengthening Nuclear Security Implementation (2014)
- Forensics in Nuclear Security (2014, 2016)
- Certified Training (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)
- Contributions of GICNT (2016)
- Promoting Full and Universal Implementation of UNSCR 1540 (2016)

CPPNM: 1989

CPPNM/A: 2011

ICSANT: 2009

GICNT: Yes

FRANCE

NSS Participant since 2010

WEAPONS USABLE MATERIAL

Progress on Nuclear and Radiological Security

- Converted research reactors outside of France to use LEU (2012)
- Developing high-density LEU fuel for research reactors operating with HEU (2012, 2014, 2016)
- Replacing HEU with LEU in medical isotopes (2012, 2014, 2016)
- Securing French origin radioactive sources overseas (2012, 2014, 2016)
- Committed to closing its HEU-fueled research reactor Orphée by 2019 (2016)
- Signed a Joint Statement on Nuclear Security to cooperate with Jordan in 2017 (2016)
- Releasing a non-paper in September 2018 on the implementation of INFCIRC/910 on the security of high-activity radioactive sources (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Secured supply chain of medical isotopes (2012)

Progress on Education and Training Initiatives

- Incorporated training on nuclear security at the European Nuclear Safety Training and Tutoring Institute and the International Nuclear Energy Institute (2010, 2012)
- Developed training courses for control and transport of nuclear materials (2012)
- Supported development of European centers of excellence in collaboration with New Delhi (2012, 2014)
- Organized the first seminar on IPPAS missions (2014)
- Hosted IRRS missions in 2014 and 2017 (2014, 2016)
- Organized nuclear forensics exercise (2016)
- Published a handbook on the security of radioactive sources (2016)

Progress on Governance Structures and Processes

- Received IPPAS missions in 2011 and 2016 (2010, 2016)
- Revised legislation to update the protection of sensitive information (2014)
- Passed legislation on radioactive source protection (2016)
- Reviewed and updated its DBT (2016)
- Creation of a joint specialized command of nuclear security forces (COSSEN) in 2017 (2016)

FRANCE (cont')

NSS Participant since 2010

Participation in Joint Statements

- Global Partnership (2012)
- Nuclear Terrorism (2012)
- Minimization of HEU and the Reliable Supply of Medical Radioisotopes (2012)
- Nuclear Information Security (2012, 2014)
- Multinational Cooperation on High-Density and LEU Fuel Development (2012, 2014)
- Transport Security (2012, 2014, 2016)
- Nuclear Security Training and Support Centers (2014)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Countering Nuclear Smuggling (2014, 2016)
- Air Transport Good Practice Guide (2016)
- Maritime Transport Good Practice Guide (2016)
- Rail Transport Good Practice Guide (2016)
- Road Transport Good Practice Guide (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Cyber Security (2016)
- High-Density Fuel Development (2016)
- Security of High Activity Radioactive Sources (2016)

CPPNM: 1991

CPPNM/A: 2013

ICSANT: 2013

GICNT: Yes

GABON

NSS Participant since 2012

Progress on Nuclear and Radiological Security

- Implemented a radiation security plan during the African Football Cup (2012)

Progress on Counter Nuclear and Radiological Smuggling

- Established customs services to control the import and export of radioactive sources (2016)

Progress on Education and Training Initiatives

- Held a workshop with the Ivory Coast on radioactive sources (2012)
- Organized customs training courses with IAEA assistance (2012, 2014)
- Organized a national workshop on domestic threats related to radioactive sources (2016)

Progress on Governance Structures and Processes

- Implemented Code of Conduct (2012)
- Enacted a new law on nuclear and radiation safety, security, and safeguards (2012, 2014)
- Established Gabonese Agency on Nuclear Safety and Security (2012, 2014)
- Established an independent regulatory body for the security of radioactive sources (2016)

Participation in Joint Statements

- None

CPPNM: 2008

CPPNM/A: 2008

ICSANT: 2007

GICNT: Yes

GEORGIA

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Enhanced physical protection and security infrastructure for high-activity radiation sources (2012, 2014)
- Enhanced security system for Saakadze disposal site to include video monitoring and guards (2016)
- Conducted physical inventory of disused sealed radioactive sources at the Centralized Storage Facility in 2017 (2016)
- Established Radio Frequency Identification Devotees installation at Centralized Storage Facility and Universal Clinique in Tbilisi (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Improved border security and implemented an NSOI agreement (2012, 2014)
- Established national register of radioactive sources (2012, 2014)
- Acquired equipment to conduct nuclear forensics investigations (2016)
- Established a Joint Maritime Operations Center with the United States to facilitate the exchange of information on nuclear smuggling (2016)

Progress on Education and Training Initiatives

- Established Center of Excellence (2012, 2014)
- Conducted workshops on nuclear security, physical protection, and DBT (2012, 2014)
- Conducted trainings for border security personnel on nuclear security (2014)
- Conducted annual trainings on physical protection for high-activity radiation sources (2014)
- Conducted training on the physical protection and security management of radioactive sources (2016)
- Conducted training on physical protection for transport of nuclear materials (2016)
- Conducted national and regional CBRN tabletop and functional exercises (2016)
- Conducted training for searching of orphan radioactive sources (2016)

Progress on Governance Structures and Processes

- Received an IPPAS mission (2012)
- Worked with IAEA to implement INSSP (2012, 2014, 2016)
- Strengthened nuclear security culture and nuclear information practices with IAEA assistance (2014)
- Adopted Technical Regulation On Categorization of Sources of Ionizing Radiation, creation and maintenance of registry of authorization, sources of ionization radiation and radioactive waste (2014)
- Adopted new regulation On Illicit Traffic of Nuclear and Radioactive Substances (2014)
- Implemented an action plan for border security and responding to illicit trafficking (2014, 2016)
- Amended law On Nuclear and Radiation Safety (2016)

GEORGIA (cont')

NSS Participant since 2010

- Established new Agency of Nuclear and Radiation Safety as a state regulator (2016)
- Adopted new regulation On Rules for Inspection of Nuclear and Radiation Activities (2016)
- Adopted new regulation on the security of nuclear and radiation facilities, radioactive sources, radioactive waste and other sources of ionization radiation (2016)

Participation in Joint Statements

- Nuclear Information Security (2012, 2014)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- National Legislation Implementation Kit (2014)
- Countries free of HEU (2014)
- Enhancing Radiological Security (2014)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Maritime Supply Chain Security (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Nuclear Training and Support Centers (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- National Nuclear Detection Architecture (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)

CPPNM: 2006

CPPNM/A: 2012

ICSANT: 2010

GICNT: Yes

GERMANY

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Strengthened intermediate storage of nuclear materials (2012)
- Provided assistance to Libya to improve facility and reactor security (2014)
- Removed all excess plutonium and HEU (2016)
- Contributing to efforts to develop high-density LEU fuel (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Worked to secure the dismantlement of Russian nuclear submarines (2012)
- Installed a special CBRN reporting scheme for police and customs (2012, 2014)
- Established central registry to trace all radioactive sources in the country (2012, 2016)
- Deployed additional mobile radiation measurement devices (2014, 2016)

Progress on Education and Training Initiatives

- Established postgraduate curriculum in nuclear security (2012)
- Organized GICNT workshops on core capabilities in nuclear forensics (2012, 2014)
- Supported IAEA workshops in Europe, South America, and Africa to facilitate ratification processes of the 2005 CPPNM/A (2014)
- Hosted a workshop on the Code of Conduct (2016)
- Hosted three meetings of the Global Partnership Nuclear and Radiological Security Working Group (2016)

Progress on Governance Structures and Processes

- Implemented an EU directive on the control of radioactive sources (2012)
- Implemented new guidelines and a new regulatory framework for cyber security (2014)
- Established a federal-level information platform to enable swift interagency information exchange for WMD-related crime (2016)
- Received an IPPAS mission (2016)
- Invited the IAEA to conduct a IRRS mission in 2019 (2016)

Participation in Joint Statements

- Strengthening Nuclear Security (2012)
- Global Partnership (2012)
- Nuclear Information Security (2012, 2014)
- Multinational Cooperation on High-Density LEU Fuel Development (2012, 2014)

GERMANY (cont')

NSS Participant since 2010

- Nuclear Training and Support Centers (2012, 2014, 2016)
- Security of Radioactive Sources/Enhancing Radiological Security/High Activity Radioactive Sources (2012, 2014, 2016)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Maritime Supply Chain Security (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- Countering Nuclear Smuggling (2016)
- Forensics in Nuclear Security (2016)
- Cyber Security (2016)
- Insider Threat Mitigation (2016)
- High-Density Fuel Development (2016)
- Nuclear Terrorism Preparedness and Response (2016)

CPPNM: 1991

CPPNM/A: 2010

ICSANT: 2008

GICNT: Yes

HUNGARY

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Converted research reactors from HEU to LEU (2012)
- Upgraded physical protection for sites of Category 1 and 2 radioactive sources (2012)
- Repatriated remaining HEU to Russia (2012, 2014)
- Compiled a national central registry of all radioactive materials and waste (2012, 2014)
- Continued efforts to reduce the use of high activity radioactive sources in medical applications (2016)

Progress on Counter Nuclear and Radiological Smuggling

- None

Progress on Education and Training Initiatives

- Established a NSSC (2014)
- Organized exercises on nuclear forensics and physical protection of high activity radioactive sources (2014)
- Organized seminars on physical protection requirements (2014)
- Hosted a meeting of the nuclear forensics international technical working group (2016)
- Hosted a GICNT nuclear forensics workshop and table top exercise (2016)

Progress on Governance Structures and Processes

- Revised regulatory framework in 2011 based on IAEA nuclear security recommendations (2012, 2014)
- Received an IPPAS mission (2012, 2014)
- Issued regulatory guidelines for licensing nuclear and other radioactive materials (2014)
- Issued a government decree for seized nuclear and radiological material (2014, 2016)
- Joined the Global Partnership (2016)
- Revised its DBT to include cyber threats (2016)

Participation in Joint Statements

- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Security of High Activity Radioactive Sources/Radioactive Sources (2012, 2016)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- Nuclear Training and Support Centers (2012, 2014, 2016)
- Countries Free of HEU (2014)

HUNGARY (cont')

NSS Participant since 2010

- Enhancing Radiological Security (2014)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Air Transport Good Practice (2016)
- Rail Transport Good Practice (2016)
- Certified Training (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Cyber Security (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)

CPPNM: 1984

CPPNM/A: 2008

ICSANT: 2007

GICNT: Yes

INDIA

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Put HEU at Apsara site under safeguards in 2010 (2012)
- Developed an advanced heavy water reactor based on LEU technologies (2012, 2014)
- Shut down the only Indian reactor using HEU (2012, 2014, 2016)
- Produced Mo-99 using LEU targets (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Established a national level counter nuclear smuggling team (2016)
- Equipped all major ports with radiation portals and detection equipment (2016)

Progress on Education and Training Initiatives

- Created a nuclear energy center with a nuclear security component (2010, 2012, 2014, 2016)
- Hosted a Sherpa meeting ahead of the 2012 NSS (2012)
- Organized training courses on nuclear security at the regional level (2012, 2014)
- Hosted a workshop on nuclear security with UNODA (2014)

Progress on Governance Structures and Processes

- Established a nuclear regulatory authority to enhance oversight of nuclear security and strengthen synergy with safety (2012)
- Updated export control laws for dual use materials in 2013 (2012, 2014)

Participation in Joint Statements

- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Countering Nuclear Smuggling (2016)

CPPNM: 2002

CPPNM/A: 2007

ICSANT: 2006

GICNT: Yes

INDONESIA

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Improved security of radiological sources using GPS tracking systems (2012, 2014)
- Converted radioisotope production from HEU to LEU (2012, 2014)

Progress on Counter Nuclear and Radiological Smuggling

- Installed radioactive portal monitors at key seaports and harbors (2012, 2016)
- Established a team for detection and response to illicit trafficking of nuclear and radioactive materials (2014, 2016)

Progress on Education and Training Initiatives

- Collaborated with IAEA on a workshop on legal frameworks (2012)
- Conducted exercises and workshops on transport security, material accountancy, and detection (2012, 2014)
- Hosted an expert meeting on national legislation implementation kit in 2013 (2014)
- Launched a Center of Excellence on Nuclear Security and Emergency Preparedness (2014, 2016)
- Established a Center for Nuclear Security Culture and Assessment (2014, 2016)

Progress on Governance Structures and Processes

- Developed guidelines for nuclear security culture (2012)
- Revising domestic law on nuclear security (2012, 2014, 2016)
- Issued a governmental regulation on security of the transport of radioactive materials (2016)
- Received an IPPAS mission (2016)

Participation in Joint Statements

- Security of Radioactive Sources (2012)
- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Nuclear Security Training and Support Centers (2012, 2014)
- Forensics in Nuclear Security (2014, 2016)
- Comprehensive Approach to Nuclear Security (2014, 2016)
- Certified Training (2016)
- National Nuclear Detection Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Consolidated Reporting (2016)
- HEU Minimization (2016)

CPPNM: 1986

CPPNM/A: 2010

ICSANT: 2014

GICNT: No

ISRAEL

NSS Participant since 2010

WEAPONS USABLE MATERIAL

Progress on Nuclear and Radiological Security

- Completed repatriation of US-origin HEU fuel from Soreq research reactor (2012, 2014)
- Implemented comprehensive nuclear security system for the protection of nuclear materials (2014)
- Conducted a physical protection assessment at Soreq in 2013 (2014)
- Replaced HEU-fueled research reactor at Soreq (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Implemented Megaports Initiative (2012, 2014)
- Established a national nuclear forensics laboratory at Soreq (2016)

Progress on Education and Training Initiatives

- Conducted an exercise to simulate responding to a RDD (2012)
- Hosted GICNT workshop on nuclear forensics (2014)
- Collaborated with Canada to establish procedures and best practices for nuclear forensics (2014)
- Hosted a joint workshop with the United States on human reliability and insider threats (2014, 2016)
- Conducted an exercise simulating a terrorist attack on a nuclear research reactor (2016)

Progress on Governance Structures and Processes

- Implemented comprehensive export control legislation (2012, 2014)
- Joined the IAEA Response and Assistance Network (2016)
- Developed procedure on intervention in the case of nuclear terrorism (2016)

Participation in Joint Statements

- Countering Nuclear Smuggling (2012, 2014, 2016)
- Nuclear Information Security (2014)
- Strengthening Nuclear Security Implementation (2014)
- Maritime Supply Chain Security (2014, 2016)
- Nuclear Training and Support Centers (2014, 2016)
- National Nuclear Detection Architecture (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Forensics in Nuclear Security (2016)
- Insider Threat Mitigation (2016)
- Security of High Activity Radioactive Sources (2016)
- Promoting Full and Universal Implementation of UNSCR 1540 (2016)

CPPNM: 2002

CPPNM/A: 2012

ICSANT: 2006 (signed)

GICNT: Yes

ITALY

NSS Participant since 2010

WEAPONS USABLE MATERIAL

Progress on Nuclear and Radiological Security

- Repatriated excess HEU and plutonium to the United States (2012, 2014, 2016)

Progress on Counter Nuclear and Radiological Smuggling

- Implemented Megaports Initiative (2010, 2012)
- Enhanced nuclear materials transport security (2012)
- Improved early warning radiation network (2014)
- Equipped two ports with mobile detection systems (2014)

Progress on Education and Training Initiatives

- Established a school for nuclear security (2010, 2012, 2014, 2016)
- Held IAEA workshops on border monitoring (2012)
- Conducted a table-top exercise on responding to an RDD incident (2012)
- Hosted the response and mitigation working group and nuclear forensics working group to address the intersections in responding to nuclear and radiological events (2014)
- Created two master's courses on CBRNe (2014, 2016)

Progress on Governance Structures and Processes

- Developed a national nuclear security plan to combat illicit trafficking (2012)
- Upgraded its institutional framework on nuclear safety and radiation protection (2014)
- Enacted legislation for protecting critical infrastructure (2014)

Participation in Joint Statements

- Global Partnership (2012)
- Nuclear Training and Support Centers (2012, 2014, 2016)
- Security of Radioactive Sources/Enhancing Radiological Security/High Activity Radioactive Sources (2012, 2014, 2016)
- Strengthening Nuclear Security Implementation (2014)
- Nuclear Information Security (2012, 2014)
- Counter Nuclear Smuggling (2012, 2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)

CPPNM: 1991

CPPNM/A: 2015

ICSANT: 2016

GICNT: Yes

JAPAN

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Re-evaluated vulnerabilities at nuclear facilities (2012)
- Upgraded equipment at facilities to operate under severe conditions (2012)
- Enhanced cyber security at nuclear facilities (2012)
- Shipped HEU fuel in Material Testing Reactor to the United States (2012)
- Contributed to strengthening the physical protection of nuclear material in Kazakhstan (2012)
- Repatriated US-origin HEU (2012, 2014)
- Converting the Kyoto University Critical Assembly to LEU with US assistance (2012, 2016)
- Introduced a system to enhance the security of radioactive isotopes (2014)
- Removed all HEU and separated plutonium from the Fast Critical Assembly (2014, 2016)

Progress on Counter Nuclear and Radiological Smuggling

- Established a bilateral nuclear security working group with the United States to work on nuclear forensics (2010, 2012, 2014, 2016)
- Incorporated transportation security based on INFCIRC 225/Rev 5 (2016)

Progress on Education and Training Initiatives

- Established the Integrated Comprehensive Support Center for Non-proliferation and Nuclear Security (2010)
- Hosted various workshops and trainings on nuclear security (some in collaboration with organizations such as WINS), including tabletop exercises on transport security, and trainings on nuclear security regulations (2010, 2012, 2014, 2016)
- Hosted training courses and exercises on physical protection of nuclear facilities and to counter cyber attacks at nuclear facilities (2010, 2012, 2014, 2016)
- Hosted an IPPAS workshop in 2013 (2012)
- Hosted the GICNT Plenary Meeting in 2017 (2016)
- Introduced a system to determine the trustworthiness of personnel (2016)

Progress on Governance Structures and Processes

- Established an independent nuclear regulatory agency (2012)
- Established the Committee on Nuclear Security (2014)
- Implemented new export controls on information security related items and technologies (2014)
- Received an IPPAS mission in 2015 (2014)
- Adopted a code of conduct on Nuclear Security Culture (2016)

JAPAN (cont')

NSS Participant since 2010

Participation in Joint Statements

- Global Partnership (2012)
- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Security of Radioactive Sources/Enhancing Radiological Security (2012, 2014)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- Nuclear Training and Support Centers (2012, 2014, 2016)
- Transport Security (2012, 2014, 2016)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Maritime Transport Good Practice Guide (2016)
- Road Transport Good Practice Guide (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Consolidated Reporting (2016)
- Cyber Security (2016)
- Insider Threat Mitigation (2016)
- Nuclear Terrorism Preparedness and Response (2016)

CPPNM: 1998

CPPNM/A: 2014

ICSANT: 2007

GICNT: Yes

JORDAN

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- None

Progress on Counter Nuclear and Radiological Smuggling

- Created a Counter Nuclear Smuggling Team (2012, 2014)
- Signed an action plan with the United States to combat nuclear and radiological smuggling (2016)

Progress on Education and Training Initiatives

- Opened a regional secretariat for EU CBRN-Center of Excellence (2012)
- Hosted international workshops on countering nuclear smuggling (2014, 2016)
- Organized a regional workshop on international legal instruments with Canada (2016)
- Organized an inter-Arab nuclear detection and response exercise (2016)
- Hosted a joint exercise to improve capabilities to detect and interdict nuclear and radiological materials under Interpol's Project Stone (2016)

Progress on Governance Structures and Processes

- Committed to Strengthening Nuclear Security Implementation per INFCIRC 869 (2016)
- Received an IAEA Nuclear Security Peer Review Mission (2016)

Participation in Joint Statements

- Countering Nuclear Smuggling (2012, 2014, 2016)
- Nuclear Training and Support Centers (2012, 2016)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Insider Threat Mitigation (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Cyber Security (2016)

CPPNM: 2009

CPPNM/A: 2009

ICSANT: 2016

GICNT: Yes

KAZAKHSTAN

NSS Participant since 2010

WEAPONS USABLE MATERIAL

Progress on Nuclear and Radiological Security

- Converted a research reactor from using HEU to LEU fuel (2010, 2012, 2014, 2016)
- Secured 10 tons of HEU and 3 tons of plutonium (2012)
- Strengthened nuclear security measures at the former nuclear test site Semipalatinsk (2012)
- Repatriated HEU to Russia (2012, 2014)
- Upgraded physical protection at several sites (2016)
- Completed construction of the LEU fuel bank storage facility (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Installed specialized radiation equipment at Astana airport (2012)
- Implemented Second Line of Defense program (2014)
- Created a national register of ionizing radiation sources (2014)
- Established an identification center for nuclear and radioactive materials (2016)

Progress on Education and Training Initiatives

- Developed the Kazakhstan Regional Training Center for accounting, control and physical protection of nuclear materials and facilities (2010, 2012)
- Established a Nuclear Security Training Center in 2017 (2010, 2012, 2014, 2016)
- Participated in GICNT and Global Partnership activities (2010, 2016)
- Conducted seminars, training courses, and table-top exercises on nuclear security, safeguards, transport security, and nuclear forensics (2014, 2016)
- Held a round table on problems of HEU minimization (2016)

Progress on Governance Structures and Processes

- Developed legislation for export controls (2012)
- Joined the Global Partnership (2012)
- Implemented the Code of Conduct (2014)
- Developed a database on the characteristics and methods for defining the origins of nuclear materials (2014)
- Revised the law to include a state system of nuclear security (2016)

KAZAKHSTAN (cont')

NSS Participant since 2010

Participation in Joint Statements

- Global Partnership (2012)
- Trilateral Cooperation at Semipalatinsk (2012)
- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Nuclear Training and Support Centers (2012, 2014, 2016)
- Security of Radioactive Sources/Enhancing Radiological Security/High Activity Radioactive Sources (2012, 2014, 2016)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Maritime Supply Chain Security (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Comprehensive Approach to Nuclear Security (2014, 2016)
- Rail Transport Good Practice Guide (2016)
- Certified Training (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Consolidated Reporting (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Cyber Security (2016)
- Transport Security (2016)
- Insider Threat Mitigation (2016)

CPPNM: 2005

CPPNM/A: 2011

ICSANT: 2008

GICNT: Yes

LITHUANIA

NSS Participant since 2012

Progress on Nuclear and Radiological Security

- Implemented best practices on safety and security of nuclear facilities (2012)
- Revised regulations on physical security in line with IAEA recommendations (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Signed an action plan on combating illicit trafficking of nuclear and radioactive materials with the United States (2012, 2014)
- Installed radiation detectors to counter illicit trafficking of nuclear and radioactive materials at a seaport (2016)

Progress on Education and Training Initiatives

- Established a Nuclear Security Center of Excellence (2012)
- Conducted national and regional nuclear security training courses and exercises (2014)
- Hosted a seminar on nuclear security with Japan (2014)

Progress on Governance Structures and Processes

- Updated legal codes to enhance control over radioactive materials (2012)
- Passed a resolution to enhance its physical protection of nuclear materials and facilities (2012, 2014)
- Passed new national legislation and guidelines on radioactive material security (2016)
- Received IPPAS mission (2016)

Participation in Joint Statements

- Countering Nuclear Smuggling (2012, 2014, 2016)
- Nuclear Training and Support Centers (2012, 2014, 2016)
- Implementation of UNSCR 1540 (2014)
- Strengthening Nuclear Security Implementation (2014)
- Security of High Activity Radioactive Sources/Enhancing Radiological Security (2014, 2016)
- Maritime Supply Chain Security (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)

CPPNM: 1993

CPPNM/A: 2009

ICSANT: 2007

GICNT: Yes

MALAYSIA

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Upgraded physical protection for nuclear irradiators with the United States (2014)

Progress on Counter Nuclear and Radiological Smuggling

- Expanded Megaports Initiative (2012)
- Joined the International Catalogue of Sealed Radioactive Sources and Devices (2014)
- Developed a high-level strategy to counter nuclear smuggling (2014, 2016)
- Developed a nuclear security detection laboratory (2016)

Progress on Education and Training Initiatives

- Established a NSSC (2012)
- Conducted joint nuclear security exercises with Thailand (2016)
- Organized a domestic training program on radiological security (2016)

Progress on Governance Structures and Processes

- Passed new export control law to prevent the export or transshipment of WMD materials (2010, 2012)
- Received an IAEA expert mission on nuclear forensics (2012, 2016)
- Implemented the Malaysia State System of Accounting and Control of Nuclear Material (2014)
- Enacted the Prevention of Terrorism Act (2016)
- Received an IPPAS mission (2016)
- Received the International Nuclear Security Advisory Service (2016)

Participation in Joint Statements

- Security of Radioactive Sources (2012)
- Nuclear Security Training and Support Centers (2012)
- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- Forensics in Nuclear Security (2014)
- Comprehensive Approach to Nuclear Security (2014, 2016)

CPPNM: Non-Party

CPPNM/A: Non-Party

ICSANT: 2005 (signed)

GICNT: Yes

MEXICO

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Converted an HEU research reactor (2010, 2012)
- Repatriated its HEU fuel to the United States (2010, 2012)
- Secured Category 1 and 2 radioactive sources with US support (2014)
- Implemented physical protections based on INFCIRC/225/Rev 5 (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Established dual-use export control system (2012)
- Implemented Megaports Initiative at four ports (2012)
- Signed a radiation monitoring agreement with Canada (2014)

Progress on Education and Training Initiatives

- Hosted regional events related to the physical protection of nuclear materials (2012, 2014, 2016)
- Hosted a Plenary Session, workshop, and field training exercise on nuclear detection for GICNT (2012, 2014, 2016)
- Organized a regional workshop for Central America on the safety and security of radiological sources in medical facilities in cooperation with Canada (2014)
- Hosted a national training course on the physical protection of nuclear materials and facilities and materials in transport (2014, 2016)
- Cooperated with the United States on training specialists in export controls and the identification of sensitive materials (2014, 2016)

Progress on Governance Structures and Processes

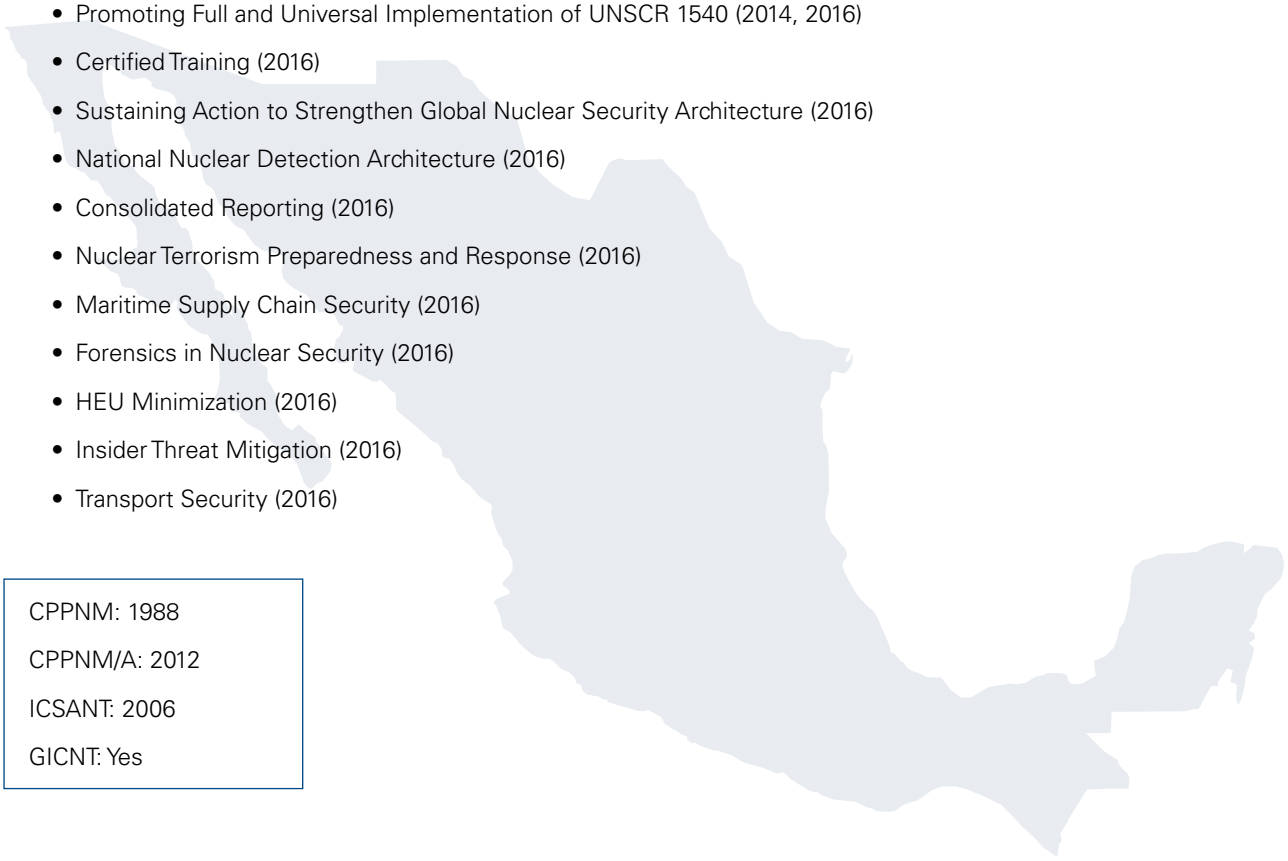
- Joined the Global Partnership (2012)
- Received an IRRS mission (2012)
- Established a National Integrated Security System to counter international terrorism threats (2012)
- Created an Export Controls Committee (2012, 2014)
- Implemented regulations for the transport of nuclear and radioactive materials (2016)
- Modified law to criminalize infractions related to radioactive materials (2016)
- Received an IPPAS mission (2016)

MEXICO (cont')

NSS Participant since 2010

Participation in Joint Statements

- Nuclear Training and Support Centers (2012, 2014, 2016)
- Nuclear Information Security (2012, 2014)
- Countries free of HEU (2014)
- Strengthening Nuclear Security Implementation (2014)
- Comprehensive Approach to Nuclear Security (2014, 2016)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Certified Training (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- National Nuclear Detection Architecture (2016)
- Consolidated Reporting (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Maritime Supply Chain Security (2016)
- Forensics in Nuclear Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)



CPPNM: 1988

CPPNM/A: 2012

ICSANT: 2006

GICNT: Yes

MOROCCO

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Strengthened physical protection at research reactors and facilities using highly radioactive sources (2012, 2014)

Progress on Counter Nuclear and Radiological Smuggling

- Enhanced border control and national capacity to detect illicit trafficking (2012)
- Established accounting system for nuclear material and national register for radioactive sources (2012)
- Equipped customs-controlled borders and exit-entry points with radiation detectors (2016)

Progress on Education and Training Initiatives

- Chaired the GICNT working group on response and mitigation and drafted the framework for responding to nuclear terrorism (2012)
- Hosted a regional meeting on the outcomes of the 2010 NSS for 26 African countries (2012)
- Hosted regional workshops on nuclear security culture and nuclear smuggling prevention (2012, 2014)
- Continued activities through its National NSSC established in 2010 (2012, 2014, 2016)
- Organized the ConvEx 3 with the IAEA in 2013 (2014)
- Organized a GICNT radiological emergency management exercise and a maritime transport security exercise with Spain (2014, 2016)
- Established a regional Center of Excellence for African countries on the Atlantic coast (2014, 2016)
- Organized the final meeting of the Inter Arab Nuclear Detection and Response Exercise (2016)

Progress on Governance Structures and Processes

- Adopted a comprehensive action plan with Spain and the IAEA to strengthen bilateral cooperation in nuclear security (2012)
- Created an action plan for new export and import control laws (2012, 2014)
- Initiated HRP to enhance safety and security (2014)
- Adopted a law to establish a framework for licensing and inspection of nuclear and radiological facilities (2014)
- Developed its national INNSP (2014)
- Established the Moroccan Agency on Nuclear and Radiological Safety and Security (2016)

MOROCCO

NSS Participant since 2010

Participation in Joint Statements

- Nuclear Security Summit Outreach Effort (2012)
- Nuclear Training and Support Centers (2012, 2014, 2016)
- Contributions of GICNT to Enhancing Nuclear Security (2012, 2014, 2016)
- Security of Radioactive Sources/Enhancing Radiological Security High Activity Radioactive Sources (2012, 2014, 2016)
- National Legislation Implementation Kit (2014)
- Nuclear Information Security (2014)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- National Nuclear Detection Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)

CPPNM: 2002

CPPNM/A: 2015

ICSANT: 2010

GICNT: Yes

NETHERLANDS

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Converted all reactors to use LEU (2012, 2014)
- Replaced HEU with LEU for the production of medical radioisotopes (2012, 2014, 2016)
- Improved security measures at three Dutch industry operators (2014, 2016)

Progress on Counter Nuclear and Radiological Smuggling

- Developed a comprehensive program to foster cooperation among nuclear and forensics institutes worldwide (2014)

Progress on Education and Training Initiatives

- Established a Center of Excellence (2012)
- Co-chaired the Global Partnership working group on new partners (2012)
- Developed best practices for radiological crime scene management, nuclear forensics, and cyber forensics (2012)
- Chaired the GICNT nuclear detection working group (2012)
- Organized international tabletop exercises on nuclear forensics and preventing nuclear terrorism (2012, 2014)
- Developed a master's program in nuclear security (2012, 2014, 2016)
- Conducted several force-on-force exercises involving all nuclear sites (2014)
- Organized a meeting of nuclear industry and institution CEOs with the IAEA and WINS (2014)
- Hosted three regional training courses on physical protection, security culture, DBT, protection against sabotage (2014, 2016)
- Hosted the GICNT 10th anniversary meeting (2016)

Progress on Governance Structures and Processes

- Updated domestic regulatory structures to better address nuclear terrorism (2012)
- Strengthened role of nuclear industry and NGOs in nuclear security (2012)
- Received a follow-up IPPAS mission (2012)
- Mandated the use of a DBT concept on cyber terrorism for the nuclear sector (2012, 2014)
- Hosted the third NSS in The Hague (2014)
- Strengthened domestic rules on physical protection requirements (2014, 2016)
- Updated its DBT, to include cyber security (2014, 2016)
- Implemented mandatory reporting of cyber incidents in the nuclear sector (2016)
- Implemented INFCIRC 225/Rev 5 (2016)

NETHERLANDS (cont')

NSS Participant since 2010

Participation in Joint Statements

- Minimization of HEU and the Reliable Supply of Medical Radioisotopes (2012)
- Global Partnership (2012)
- Nuclear Information Security (2012, 2014)
- Nuclear Training and Support Centers (2012, 2014, 2016)
- Contributions of GICNT to Enhancing Nuclear Security (2012, 2014, 2016)
- National Legislation Implementation Kit (2014)
- Strengthening Nuclear Security Implementation (2014)
- Countering Nuclear Smuggling (2014, 2016)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Maritime Supply Chain Security (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Enhancing Radiological Security/High Activity Radioactive Sources (2014, 2016)
- Certified Training (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Consolidated Reporting (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)

CPPNM: 1991

CPPNM/A: 2011

ICSANT: 2010

GICNT: Yes

NEW ZEALAND

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Supported the repatriation of HEU from Uzbekistan (2014)
- Hosted an ad hoc IAEA inspection to verify nuclear material holdings (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Installed radiological monitoring equipment at a Ukraine airport (2010, 2012)
- Secured orphan radioactive sources in Cambodia in cooperation with Australia (2012)
- Provided mobile radiation detection capabilities to countries in Latin America (2012)

Progress on Education and Training Initiatives

- Supported a workshop in Australia on nuclear incident information flows (2012)
- Conducted a model tabletop exercise to test and improve national radiological and nuclear security systems in response to terrorism threats in 2011 (2012)
- Supported WINS workshop in the Philippines on securing high-activity radioactive sources (2012)
- Supported a GICNT workshop on nuclear security and forensics and a workshop on the security of radioactive sources in Malaysia (2012, 2014)
- Supported WINS to develop an online nuclear security qualification program (2014)
- Conducted a number of assessments and exercises to test domestic readiness for emergencies and other events involving radioactive materials (2014)
- Hosted nuclear security tabletop exercise under the auspices of PSI for 21 countries (2014, 2016)

Progress on Governance Structures and Processes

- Implemented the revised Code of Conduct (2012)
- Revised national practice on nuclear information security (2014)
- Enacted the Radiation Safety Act which deals with the safety and security of nuclear and radioactive material (2016)
- Implemented a code of practice for the security of radioactive material in accordance with INFCIRC/869 (2016)
- Received an IPPAS mission (2016)

NEW ZEALAND (cont')

NSS Participant since 2010

Participation in Joint Statements

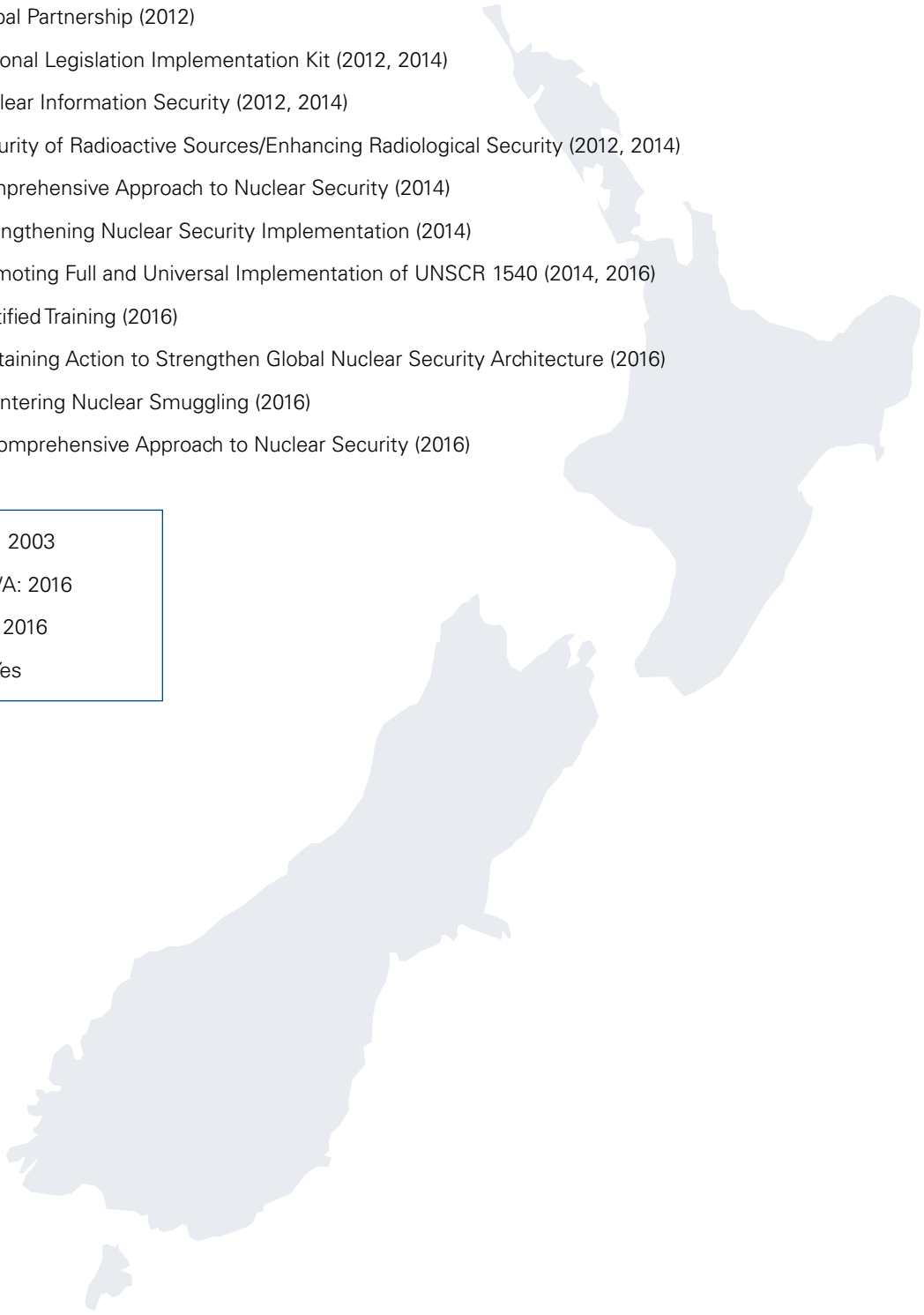
- Global Partnership (2012)
- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Security of Radioactive Sources/Enhancing Radiological Security (2012, 2014)
- Comprehensive Approach to Nuclear Security (2014)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Certified Training (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Countering Nuclear Smuggling (2016)
- A Comprehensive Approach to Nuclear Security (2016)

CPPNM: 2003

CPPNM/A: 2016

ICSANT: 2016

GICNT: Yes



NIGERIA

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Improved physical protections with Cobalt-60 and radiological waste (2012)
- Converted a research reactor from HEU to LEU with cooperation from the United States, China, IAEA (2012, 2016)
- Developed a program for search and security of orphan and legacy radioactive sources (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Secured orphaned radioactive sources (2012)
- Installed additional radiation and portal monitors at airports, seaports, and strategic ports of entry (2012, 2014, 2016)
- Restricted the import and export of radioactive sources to ports where there are detection capabilities (2014)

Progress on Education and Training Initiatives

- Coordinated master's degree and professional programs in nuclear security (2012)
- Hosted a meeting and workshop for ECOWAS ambassadors on nuclear security (2012)
- Established a NSSC to serve sub-Saharan Africa (2012, 2016)
- Implemented a HRP for nuclear industry in cooperation with the United States (2016)
- Conducted exercises through the Search and Secure program (2016)

Progress on Governance Structures and Processes

- Passed the updated Nuclear Safety, Security, and Safeguards Bill (2012, 2014, 2016)
- Established a State System of Accounting for and Control of Nuclear Materials (2014)
- Created an interministerial technical committee on legacy radioactive sources (2014)
- Received an IRRS (2014)
- Reviewed and updated its DBT (2016)

Participation in Joint Statements

- Nuclear Security Summit Outreach Effort (2012)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Forensics in Nuclear Security (2016)
- HEU Minimization (2016)
- Nuclear Training and Support Centers (2016)
- Insider Threat Mitigation (2016)
- A Comprehensive Approach to Nuclear Security (2016)

CPPNM: 2007

CPPNM/A: 2007

ICSANT: 2012

GICNT: Yes

NORWAY

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Dismantled five Soviet era nuclear submarines and removed 251 highly radioactive sources from lighthouses in Russia (2012, 2014, 2016)
- Secured and consolidated spent nuclear fuel and radioactive materials (2012, 2014)
- Conducted a comprehensive review of nuclear and radiological security at facilities (2014)
- Implemented information security measures at two research reactors (2014)
- Phased out the use of high-activity sources in blood irradiators at hospitals (2014, 2016)
- Replaced all cesium-137 Category 1 radioactive sources with X-ray technology (2016)
- Contributed to the IAEA's LEU fuel bank in Kazakhstan (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Partnered with Kazakhstan and the United States to install radiation detection sensors at borders in Central Asia (2010, 2012)
- Strengthened Ukraine's capacity to counter nuclear smuggling through the provision of equipment and training (2016)
- Initiated a collaborative project with Slovakia to improve border control against nuclear smuggling (2016)

Progress on Education and Training Initiatives

- Established a master's program in nuclear security at the University of Oslo in cooperation with other European universities (2012, 2014)
- Hosted international meetings on HEU minimization (2012, 2016)
- Hosted an illicit trafficking conference in Moldova to facilitate projects to prevent proliferation of nuclear and radiological material (2014)
- Hosted a WINS workshop on enhancing radiological security (2016)

Progress on Governance Structures and Processes

- Promoted additional measures for the FMCT (2014)
- Received an IPPAS mission (2016)

NORWAY (cont')

NSS Participant since 2010

Participation in Joint Statements

- Global Partnership (2012)
- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Strengthening Nuclear Security Implementation (2014)
- Security of Radioactive Sources/Enhancing Radiological Security/High Activity Radioactive Sources (2012, 2014, 2016)
- Implementation of UNSCR 1540 (2014, 2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Forensics in Nuclear Security (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)
- Certified Training (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Consolidated Reporting (2016)

CPPNM: 1985

CPPNM/A: 2009

ICSANT: 2014

GICNT: Yes

PAKISTAN

NSS Participant since 2010

WEAPONS USABLE MATERIAL

Progress on Nuclear and Radiological Security

- Conducted comprehensive stress tests of nuclear power plants (2012)
- Implemented a Nuclear Security Action Plan with the IAEA (2014)
- Upgraded physical protection of a nuclear power plant in collaboration with the IAEA (2014)
- Upgraded security at facilities with Category 1 radioactive sources with the IAEA (2014, 2016)
- Enhanced security systems and measures at civilian nuclear power plants and research reactors in collaboration with the IAEA (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Deployed special nuclear material portals on key exit and entry points to counter the illicit trafficking of nuclear and radioactive materials (2012, 2014, 2016)

Progress on Education and Training Initiatives

- Established a Center of Excellence (2012, 2014)
- Established National Institute of Safety and Security for facilitating national and regional training courses on nuclear security (2012, 2014)
- Hosted an annual meeting of the International Network of Nuclear Support Centers (2016)

Progress on Governance Structures and Processes

- Renewed its 2006 Nuclear Security Action Plan in 2011 and revised its export controls list to include nuclear related technologies (2012)
- Established an inter-agency effort and management system to better coordinate emergency response to potential nuclear and radiological disasters (2012, 2014, 2016)

Participation in Joint Statements

- Nuclear Security Training and Support Centers (2012, 2014)

CPPNM: 2000

CPPNM/A: 2016

ICSANT: Non-Party

GICNT: Yes

PHILIPPINES

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Established the Philippines Nuclear Research Institute (PNRI) to search for and secure radioactive sources (2012)
- Implemented security upgrades in 10 medical facilities with high risk materials (2012, 2014)
- Completed a project on the conditioning of spent high activity radioactive sources with South Africa and the IAEA (2014)
- Cooperated with the United States to install additional security upgrades in hospitals and the PNRI facilities with Category 1 radiological sources (2016)
- Upgraded the PNRI perimeter fence to improve the physical protection at the radioactive waste facility (2016)
- Installed a physical protection system at the Philippines research reactor (2016)
- Recovered partial radiation sources from scrapped radiation equipment (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Expanded the Megaport Initiative to additional ports (2010, 2012)
- Installed monitoring equipment for detection and response (2012)
- Received four mobile detection vans to enhance capabilities for countering nuclear smuggling (2016)

Progress on Education and Training Initiatives

- Conducted trainings on Commodity Identification Training, trainings for the national police first responders, and outreach to universities (2012)
- Hosted the third review meeting of the Radiological Security Partnerships (2012)
- Opened the regional secretariat of the CBRN centers of excellence (2012)
- Hosted IAEA international forum on effective border controls workshop (2012)
- Establishing a National NSSC through the PNRI (2014, 2016)
- Conducted radiological security incident response training for the Philippine National Police (2016)
- Cooperated with the EU to develop a training center at PNRI to train first responders in the field of nuclear detection and response (2016)
- Organized a national workshop on the 2005 CPPNM/A with the IAEA (2016)

Progress on Governance Structures and Processes

- Signed a Memorandum of Agreement with the Philippine National Police for Radiological Security Incident Response and training (2010)
- Developed regulations on the security of radioactive sources, and Security Requirements for the Transport of Radioactive Material based on the IAEA Nuclear Security Series (2012, 2014)
- Joined the Global Partnership (2016)

PHILIPPINES (cont')

NSS Participant since 2010

Participation in Joint Statements

- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Counter Nuclear Smuggling (2012, 2014)
- Security of Radioactive Sources/High Activity Radioactive Sources (2012, 2016)
- Comprehensive Approach to Nuclear Security (2014)
- Strengthening Nuclear Security Implementation (2014)
- Implementation of UNSCR 1540 (2014, 2016)
- Nuclear Training and Support Centers (2014, 2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Forensics in Nuclear Security (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Transport Security (2016)
- A Comprehensive Approach to Nuclear Security (2016)

CPPNM: 1981

CPPNM/A: Non-Party

ICSANT: 2005 (signed)

GICNT: Yes

POLAND

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Removed spent HEU nuclear fuel from research reactors (2012, 2014, 2016)
- Converted the MARIA reactor to LEU (2012, 2016)
- Repatriated HEU fuel to Russia (2012, 2016)
- Converted EVA research reactor (2012, 2016)
- Strengthened security at a radioactive waste disposal site (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Established a system of accounting and control of nuclear materials and a registry of radioactive sources (2012)
- Modernized radiation detection equipment at ports of entry (2012, 2014)
- Improved the technical infrastructure at border-crossing points (2016)

Progress on Education and Training Initiatives

- Hosted regional seminars for Central and Eastern European countries to promote nuclear security improvements (2012)
- Hosted NSS Law Enforcement Counter Nuclear Smuggling Conference with INTERPOL (2012)
- Held a national workshop on DBT implementation (2014)
- Supported training exercises on nuclear safety and radiological protection with the IAEA (2014)
- Conducted a Polish-Ukrainian scenario-based exercise (2014)
- Conducted operational exercise PATROL 2015 (2016)
- Conducted training exercises for Polish border guards in cooperation with the United States (2016)

Progress on Governance Structures and Processes

- Amended national law to improve nuclear security (2012)
- Adopted the National Anti-Terrorist Program, including objectives related to strengthening nuclear security against terrorist threats (2014, 2016)
- Adopted a National Plan for Management of Radioactive Waste and Spent Nuclear Fuel (2016)
- Received an IPPAS mission (2016)
- Received an IRRS mission (2016)
- Updated regulations related to its DBT (2016)

POLAND (cont')

NSS Participant since 2010

Participation in Joint Statements

- Global Partnership (2012)
- Nuclear Security Summit Outreach Effort (2012)
- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Security of High Activity Radioactive Sources/Radioactive Sources (2012, 2016)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSC 1540 (2014, 2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Consolidated Reporting (2016)

CPPNM: 1983

CPPNM/A: 2007

ICSANT: 2010

GICNT: Yes

REPUBLIC OF KOREA

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Developing high-density LEU fuel to replace HEU fuel in research reactors as part of a joint project (2012, 2014, 2016)
- Conducted regular cyber security inspections and reviews (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Launched a pilot program on real time tracking of radiological materials in Vietnam (2012, 2014, 2016)
- Developed a national nuclear forensics system (2014)
- Developed domestic radiation source location tracking system (2016)

Progress on Education and Training Initiatives

- Hosted a GICNT exercise and plenary session (2010, 2012)
- Hosted a regional exercise on nuclear forensics with the IAEA (2012)
- Hosted an international workshop on nuclear material tracking and detection system with WINS (2012)
- Established a Center of Excellence (2012, 2014)
- Launched the International Nuclear Non-proliferation and Security Academy (2012, 2014, 2016)
- Hosted a workshop on IPPAS (2014)
- Hosted training on nuclear security and workshops on nuclear security culture (2014)
- Hosted a conference on cyber security (2014)
- Hosted a regional workshop on computer security for nuclear facilities (2016)

Progress on Governance Structures and Processes

- Hosted second NSS in Seoul (2012)
- Established a Nuclear Safety and Security Commission (2012)
- Received an IPPAS mission (2012, 2014)
- Launched an online portal to facilitate effective controls on nuclear technology and sensitive information (2014)
- Incorporated INFCIRC/225/Rev 5 into its national regulations (2014, 2016)
- Established the legal and administrative framework for the security of Category 1 and 2 radioactive sources as provided in the Code of Conduct (2016)
- Updated its DBT to include cyber threats (2016)

REPUBLIC OF KOREA (cont')

NSS Participant since 2010

Participation in Joint Statements

- Global Partnership (2012)
- Nuclear Security Summit Outreach Effort (2012)
- Transport Security (2012, 2014)
- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Nuclear Training and Support Centers (2012, 2014, 2016)
- High-Density Fuel Development/and LEU Fuel Development (2012, 2014, 2016)
- Security of High Activity Radioactive Sources/Radioactive Sources/Enhancing Radiological Security (2012, 2014, 2016)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- GICNT (2014)
- Countries Free of HEU (2014)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Air Transport Good Practice Guide (2016)
- Road Transport Good Practice Guide (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)
- Contributions of GICNT to Enhancing Nuclear Security (2016)

CPPNM: 1982

CPPNM/A: 2014

ICSANT: 2014

GICNT: Yes

ROMANIA

NSS Participant since 2012

Progress on Nuclear and Radiological Security

- Upgraded physical protection at the Research Institute for Physics and Nuclear Engineering (2012)
- Converted research reactor from using HEU to LEU (2012, 2014)
- Repatriated HEU and LEU to Russia (2012, 2014)
- Upgraded physical protection for radioactive sources at hospitals and research institutes (2012, 2014, 2016)

Progress on Counter Nuclear and Radiological Smuggling

- Implemented Megaports Initiative (2012)
- Upgraded radiation monitoring equipment with US and EU assistance (2012)
- Installed radiological detection portals at border points and at Romania's national airport (2016)

Progress on Education and Training Initiatives

- Hosted a joint exercise with Norway to improve radiological emergency protection and intervention (2012)
- Organized an exercise at a nuclear power plant to evaluate national response to terrorism threats (2014)
- Organized an exercise responding to a shooting incident at a medical center with radiological sources (2014)
- Organized national training courses in computer and information security for nuclear facilities (2014)
- Held a nuclear security training seminar with support of the IAEA (2014)

Progress on Governance Structures and Processes

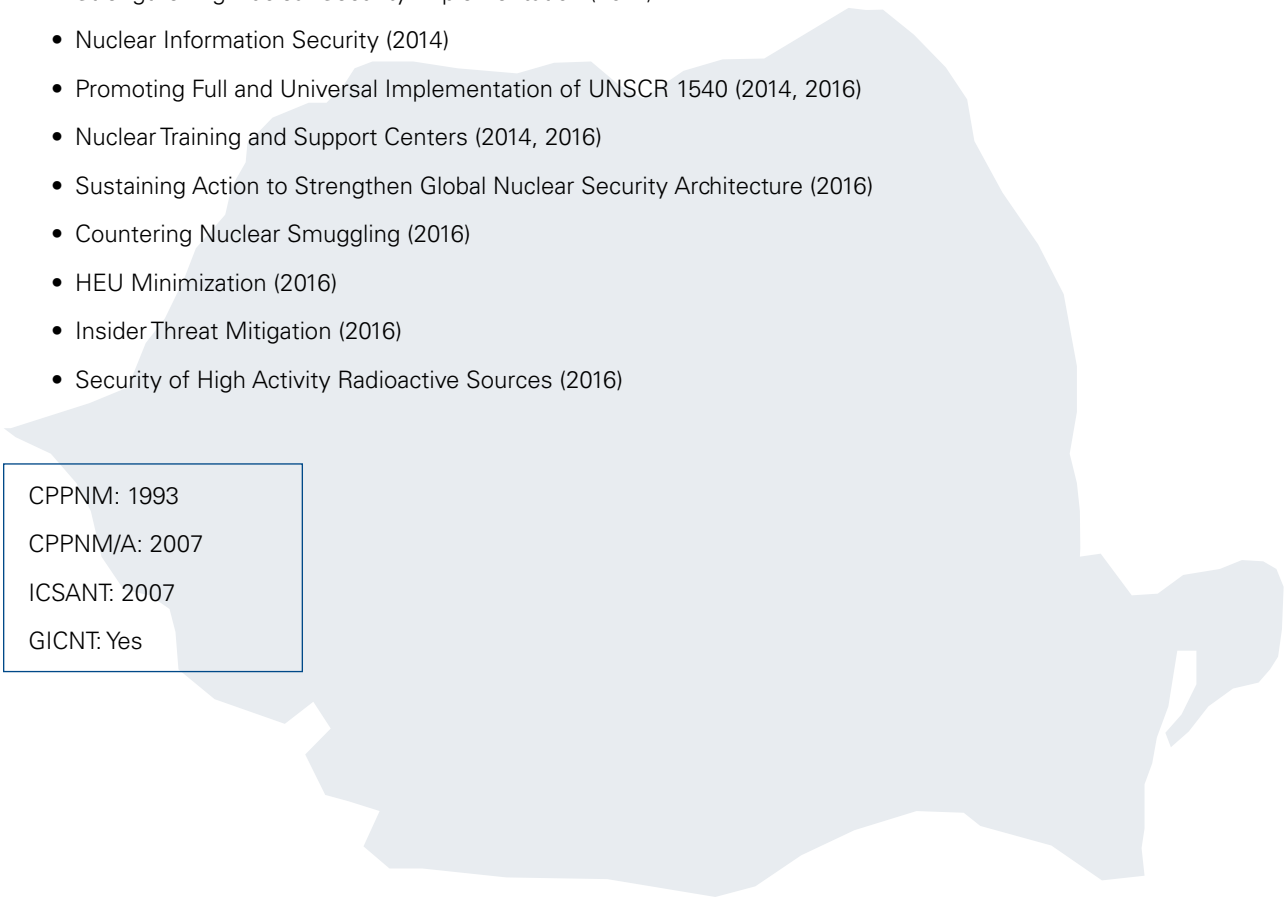
- Received an IPPAS mission (2012, 2014)
- Received an INNServ mission (2014)
- Established a framework and national operations center for the responsible and safe management of radioactive waste (2014)
- Developed a DBT (2014)
- Updated national practices and regulatory frameworks to reflect requirements of the latest IAEA guidance (2014, 2016)

ROMANIA (cont')

NSS Participant since 2012

Participation in Joint Statements

- National Legislation Implementation Kit (2014)
- Countries Free of HEU (2014)
- Forensics in Nuclear Security (2014)
- Strengthening Nuclear Security Implementation (2014)
- Nuclear Information Security (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Nuclear Training and Support Centers (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Countering Nuclear Smuggling (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)
- Security of High Activity Radioactive Sources (2016)



CPPNM: 1993

CPPNM/A: 2007

ICSANT: 2007

GICNT: Yes

RUSSIA

NSS Participant since 2010

(but did not attend 2016 NSS)

WEAPONS USABLE MATERIAL

Progress on Nuclear and Radiological Security

- Ended plutonium production (2010)
- Converted excess military HEU to LEU (2012)
- Assessed feasibility of converting 6 research reactors to use LEU and converted one reactor (2012)
- Restricted export of nuclear fuel to LEU (2012)
- Restricted imports of medical isotopes to those produced with LEU (2012)
- Received Russian-origin HEU from 12 countries (2012, 2014)
- Developing new high-density LEU fuel for the conversion of reactors (2014)

Progress on Counter Nuclear and Radiological Smuggling

- Established a national register of radioactive sources (2012)
- Installed radiation monitoring equipment at every border crossing (2012)
- Established a prototype system for the prevention of illicit trafficking in radioactive materials in the Murmansk Region (2012)
- Established an automated system for real time tracking of nuclear and radiological materials in transit (2014)

Progress on Education and Training Initiatives

- Hosted a workshop on nuclear security culture with the IAEA (2012)
- Hosted an exercise on new nuclear technology in emergency response efforts (2012)
- Co-chaired the GICNT (2012, 2014)
- Hosted GICNT exercises on transport security and countering nuclear terrorism (2012, 2014)
- Held training sessions for international participants on radiation detection, material accountancy, and security culture (2012, 2014)
- Hosted nuclear forensics international technical working group meeting (2014)
- Held annual workshops on information security (2014)
- Conducted courses and workshops on physical protection (2014)
- Conducted an exercise on nuclear detection (2014)

Progress on Governance Structures and Processes

- Signed PMDA (2010)
- Passed a federal law on radioactive waste management (2012)
- Approved regulations on accounting and control of nuclear and radioactive materials and waste (2012, 2014)
- Developed guidelines for nuclear security culture (2012, 2014)

Participation in Joint Statements

- Global Partnership (2012)
- Trilateral Cooperation at the Former Semipalatinsk Test Site (2012)
- GICNT (2012, 2014)

CPPNM: 1983

CPPNM/A: 2008

ICSANT: 2007

GICNT: Yes

SAUDI ARABIA

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- None

Progress on Counter Nuclear and Radiological Smuggling

- None

Progress on Education and Training Initiatives

- Established a Center of Excellence (2012)
- Held regional training courses with the IAEA (2012)
- Organized a joint meeting on nuclear security between border control experts from Yemen and Saudi Arabia (2016)
- Organized a workshop with Japan on the development of human resources in security and nuclear safety and safeguards (2016)
- Organized a national workshop for protection from the risks of CBRN materials in cooperation with UNICRI (2016)
- Organized workshops on nuclear security, safeguards, and capacity building with the IAEA (2016)
- Contributed $10 million to the IAEA for a new center to combat nuclear terrorism (2016)

Progress on Governance Structures and Processes

- Signed the Convention for Practical Coordination between the IAEA and Naif University (2016)

Participation in Joint Statements

- None

CPPNM: 2009

CPPNM/A: 2011

ICSANT: 2007

GICNT: Yes

SINGAPORE

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- None

Progress on Counter Nuclear and Radiological Smuggling

- Implemented Megaports Initiative (2012)
- Enforced a licensing regime for the import, export, possession, handling, transport, use and storage of radioactive material (2014)
- Established a national nuclear forensics laboratory (2014, 2016)
- Established a border laboratory equipped with nuclear detection and analysis tools (2016)

Progress on Education and Training Initiatives

- Hosted a workshop on procedures for a nuclear or radiological emergency with the IAEA (2012)
- Hosted a workshop on nuclear forensics with the United States and the EU (2012)
- Hosted an international export control conference on nuclear detection and forensics (2012)
- Organized two workshops with INTERPOL's Radiological and Nuclear Terrorism Prevention Unit (2012, 2014)
- Hosted two PSI exercises (2014)
- Organized a regional workshop on nuclear law (2016)

Progress on Governance Structures and Processes

- Introduced new legislation on export controls and cyber security (2014)
- Established an interagency working group to assess nuclear security measures, conduct inspections, and make recommendations to further improve security at storage sites (2016)
- Established a Cyber Security Agency (2016)

Participation in Joint Statements

- Security of High Activity Radioactive Sources/Radioactive Sources (2012, 2016)
- National Legislation Implementation Kit (2014)
- Comprehensive Approach to Nuclear Security (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- National Nuclear Detection Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Forensics in Nuclear Security (2016)
- HEU Minimization (2016)
- In Larger Security: A Comprehensive Approach to Nuclear Security (2016)

CPPNM: 2014

CPPNM/A: 2014

ICSANT: 2017

GICNT: Yes

SOUTH AFRICA

NSS Participant since 2010

WEAPONS USABLE MATERIAL

Progress on Nuclear and Radiological Security

- Converted Mo-99 production from HEU to LEU (2012)
- Converted nuclear research reactor from HEU to LEU (2012)
- Repatriated US-origin HEU and spent fuel (2012, 2014)
- Developed a mobile hot cell facility with the IAEA to provide developing countries with safe and secure storage for high activity radioactive sources (2014)
- Recovered disused and orphan radioactive sources throughout Africa and some non-African countries (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Established a nuclear forensics capability (2014, 2016)

Progress on Education and Training Initiatives

- Established a NSSC (2012, 2014, 2016)
- Held a national workshop on DBT maintenance and review (2014)
- Held a regional training course on nuclear security detection architecture (2014)
- Hosted several nuclear security workshops including on physical protection (2014, 2016)

Progress on Governance Structures and Processes

- Implemented the IAEA Nuclear Security Culture Self-Assessment Tool (2012)
- Received an INNR mission (2012, 2014)
- Received an INServ mission on border monitoring (2014)
- Received an EPREV mission (2014)

Participation in Joint Statements

- Comprehensive Approach to Nuclear Security (2014)
- In Larger Security: A Comprehensive Approach to Nuclear Security (2016)

CPPNM: 2007

CPPNM/A: Non-Party

ICSANT: 2007

GICNT: Yes

SPAIN

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Worked with Morocco to enhance Morocco's domestic nuclear and radiological security (2012)
- Constructed a centralized storage facility for spent fuel and high-level waste (2014)

Progress on Counter Nuclear and Radiological Smuggling

- Expanded the Megaports Initiative to two ports (2012, 2014)
- Launched a nuclear forensics taskforce (2012, 2014)
- Installed radiation detection systems at four harbors (2014)

Progress on Education and Training Initiatives

- Served as IAG coordinator for the GICNT (2012)
- Organized GICNT radiological emergency management exercise with Morocco (2012)
- Organized 24 courses on CBRN emergencies (2012)
- Held international seminar on physical protection (2014)
- Held a seminar on physical protection of radioactive sources with Latin American countries (2014)
- Held a national course analyzing the vulnerability of nuclear power plants (2014)
- Organized an awareness raising seminar on nuclear security with the Netherlands and the United States (2016)
- Organized a joint exercise with Morocco and the IAEA (2016)
- Organized a national exercise on security in land transportation of spent fuel (2016)
- Organized the Second International Regulators conference on nuclear security with the United States (2016)
- Organized an international workshop on nuclear security culture with the IAEA (2016)

Progress on Governance Structures and Processes

- Updated regulations to respond to illicit nuclear trafficking (2012)
- Adopted an action plan with Morocco on CBRN risk mitigation (2012)
- Developed a National Assessment of its DBT (2012, 2014)
- Joined the Global Partnership (2016)
- Amended and updated its regulations for the physical protection of nuclear materials and facilities, adapting it to cyber and insider threats (2016)

SPAIN (cont')

NSS Participant since 2010

Participation in Joint Statements

- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Contributions of the GICNT to Enhancing Nuclear Security (2012, 2014, 2016)
- Security of High Activity Radioactive Sources/Radioactive Sources (2012, 2016)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Maritime Supply Chain Security (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Nuclear Training and Support Centers (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Cyber Security (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)

CPPNM: 1991

CPPNM/A: 2007

ICSANT: 2007

GICNT: Yes

SWEDEN

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Repatriated separated plutonium to the United States (2012, 2014)
- Strengthened physical protection at nuclear facilities (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Supported anti-smuggling efforts in Russia, Ukraine, Georgia, and Moldova (2012)

Progress on Education and Training Initiatives

- Hosted second INTERPOL Radiological and Nuclear Trafficking Terrorism conference (2012)
- Organized regional conference on illicit trafficking for states in the Black Sea region (2014)
- Organized a conference for states in the Black Sea region on the implementation of NSS commitments and objectives (2016)
- Held conferences to strengthen regional networks and interactions (2016)

Progress on Governance Structures and Processes

- Received an IPPAS mission and requested a follow up mission (2010, 2012, 2014)
- Formed a national physical protection coordination group to share information and best practices (2014)
- Reviewed protection of nuclear facilities and transportation (2014)
- Revised guidelines on information security (2014)
- Updated national security framework for protection of nuclear facilities (2014)

Participation in Joint Statements

- Global Partnership (2012)
- Nuclear Information Security (2012, 2014)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- Security of High Activity Radioactive Sources/Radioactive Sources/Enhancing Radiological Security (2012, 2014, 2016)
- National Legislation Implementation Kit (2014)
- Countries Free of HEU (2014)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Nuclear Training and Support Centers (2014, 2016)

SWEDEN (cont')

NSS Participant since 2010

- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- Consolidated Reporting (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)

CPPNM: 1980

CPPNM/A: 2012

ICSANT: 2014

GICNT: Yes

SWITZERLAND

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Repatriated separated plutonium (2014, 2016)
- Removed HEU (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Established a national registry of radioactive sources for Category 1 and 2 (2014)

Progress on Education and Training Initiatives

- Conducted trainings on radiological and nuclear security (2012, 2014)
- Conducted crisis management exercises (2014)
- Organized a training activity for information security officers and safety officers at nuclear power plants (2014)
- Developed a nuclear security culture program based on IAEA guidance (2014, 2016)

Progress on Governance Structures and Processes

- Implemented Code of Conduct (2012)
- Adopted a strategy for cyber risks (2012, 2014)
- Strengthened its legal and regulatory framework for physical protection (2014)
- Updated its DBT (2014)
- Created a platform for cooperation with France on physical protection and security of nuclear installations and materials (2014)
- Requested an IPPAS mission for 2018 (2016)

Participation in Joint Statements

- Global Partnership (2012)
- Nuclear Information Security (2012, 2014)
- Security of High Activity Radioactive Sources/Radioactive Sources (2012, 2016)
- National Legislation Implementation Kit (2014)
- Forensics in Nuclear Security (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Cyber Security (2016)

CPPNM: 1987

CPPNM/A: 2008

ICSANT: 2008

GICNT: Yes

THAILAND

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Upgraded physical protection system at a research reactor and a waste storage facility (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Implemented the Megaports Initiative (2012)
- Established a nuclear forensics center (2012)
- Expanded the use of radiation monitoring systems (2012)
- Initiated a Project on Border Monitoring Activities with the EU and the United States (2016)
- Implemented a new program for the tracking and management of dual-use items (2016)

Progress on Education and Training Initiatives

- Held a national workshop on PSI with other countries (2012)
- Hosted an international conference on safety, security, and safeguards in nuclear energy (2012)
- Established a regional network of nuclear regulators for information sharing (2012)
- Hosted the ASEAN regional forum workshop on nuclear forensics (2012, 2014)
- Established a nuclear and radiation technical support center (2012, 2014)
- Organized annual training and drill exercises for nuclear incidents (2012, 2014, 2016)
- Established a Center of Excellence for Nuclear Forensics (2014)
- Hosted a PSI bilateral table-top exercise with the United States (2014)
- Hosted an NSS Sherpa meeting (2014)
- Developed a course on nuclear safety, security, safeguards management (2014)

Progress on Governance Structures and Processes

- Adopted new nuclear and radiological emergency plan (2012)
- Implemented new regulations on physical protection (2012, 2014, 2016)
- Developed guidelines for transit and transshipment for nuclear and radiological materials (2016)
- Issued requirements for export of dual-use items (2016)

THAILAND (cont')

NSS Participant since 2010

Participation in Joint Statements

- Nuclear Information Security (2012)
- Nuclear Security Summit Outreach Effort (2012)
- Security of High Activity Radioactive Sources/Radioactive Sources (2012, 2016)
- Certified Training (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Countering Nuclear Smuggling (2016)
- Consolidated Reporting (2016)
- Nuclear Terrorism Preparedness and Response (2016)
- Forensics in Nuclear Security (2016)
- Nuclear Training and Support Centers (2016)
- Insider Threat Migration (2016)
- In Larger Security: A Comprehensive Approach to Nuclear Security (2016)
- Transport Security (2016)

CPPNM: Non-Party

CPPNM/A: Non-Party

ICSANT: 2005 (signed)

GICNT: Yes

TURKEY

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Developed a physical protection program for research facilities (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Equipped organized crime units with radiation dose rate meters (2012)
- Signed a cooperative agreement with Iran to prevent nuclear trafficking (2012)

Progress on Education and Training Initiatives

- Established the Ankara Nuclear Research and Training Center (2010)
- Hosted workshops on illicit trafficking in cooperation with the Global Initiative Study Network and Skdeniz University (2010, 2012)
- Hosted commodity identification training program (2012)
- Organized an IAEA national workshop on physical protection for nuclear newcomers (2014)
- Organized an international conference for cooperation on counter nuclear smuggling (2014)
- Hosted a training course on nuclear security detection architecture (2016)
- Organized a national workshop on the "Nuclear Security Plan" (2016)

Progress on Governance Structures and Processes

- Updated domestic legislation on physical protection (2012)
- Received a follow-up IPPAS mission (2012)
- Received an INIR mission (2014)
- Established a working group to discuss nuclear security issues for nuclear power plants (2014)
- Updated its DBT (2016)

Participation in Joint Statements

- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- Nuclear Security Training and Support Centers (2014)
- Countries Free of HEU (2014)
- Enhancing Radiological Security (2014)
- Forensics in Nuclear Security (2014)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Cyber Security (2016)

CPPNM: 1985

CPPNM/A: 2015

ICSANT: 2012

GICNT: Yes

UKRAINE

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Repatriated all HEU to Russia (2010, 2012)
- Completed conversion of 15 reactors to LEU (2010, 2012)
- Established a trilateral Swedish-Norwegian-Ukrainian Initiative to upgrade security at a nuclear power plant (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Established the radioactive detection system to secure border crossing points and all main airports (2012)
- Upgraded equipment to better identify bulk-form nuclear materials (2012)
- Continued installation of radiation detectors, training, and exercises at borders to counter nuclear smuggling (2016)
- Created regional network of nuclear forensics expertise (2016)
- Worked with the United States to develop nuclear forensics library data, materials, and attribution techniques (2016)

Progress on Education and Training Initiatives

- Conducted training courses in physical protection for nuclear industry operators (2012)
- Developed courses on physical security and accounting of nuclear materials (2012)

Progress on Governance Structures and Processes

- Established a new State Nuclear Inspectorate to monitor compliance with new nuclear security regulations (2012)
- Received an INSSP (2012, 2016)
- Revised national legislation on physical protection to incorporate IAEA recommendations (2016)
- Approved national DBT and guidance for an improved physical protection of nuclear materials (2016)

Participation in Joint Statements

- Nuclear Security Training and Support Centers (2012)
- Global Partnership (2012)
- Comprehensive Approach to Nuclear Security (2014)
- Countries Free of HEU (2014)
- Strengthening Nuclear Security Implementation (2014)
- Nuclear Information Security (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Cyber Security (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- Countering Nuclear Smuggling (2016)

CPPNM: 1993

CPPNM/A: 2008

ICSANT: 2007

GICNT: Yes

UNITED ARAB EMIRATES

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- None

Progress on Counter Nuclear and Radiological Smuggling

- Implemented Megaports Initiative (2010, 2012)

Progress on Education and Training Initiatives

- Hosted a regional seminar on the Implementation of Legislation of Nuclear Security, Safety and Safeguards (2012)
- Hosted a national workshop on radioactive source security (2012)
- Hosted a GICNT plenary meeting (2012)
- Established the Gulf Nuclear Energy Infrastructure Institute to train on nuclear security, safety, and safeguards with the United States (2012, 2014)
- Hosted an international conference with the IAEA on the safety and security of radioactive sources (2014)
- Hosted a national workshop on cyber security (2014)
- Held a workshop to develop curriculum for nuclear security education programs with the United States (2014)
- Hosted a national workshop on IPPAS in 2015 (2016)
- Hosted the Inter-Arab nuclear detection and response exercise entitled FALCON (2016)
- Hosted workshops on nuclear transport security and cyber security with the IAEA (2016)
- Hosted a regional training course on nuclear forensics (2016)

Progress on Governance Structures and Processes

- Received an INIR mission and an IRRS mission in 2011 (2010)
- Issued new nuclear security regulations on Physical Protection of Nuclear Material and Nuclear Facilities (2012)
- Strengthened import and export laws preventing the financing of nuclear trafficking (2012)
- Implemented specific regulation for the security of radioactive sources (2012)
- Established a regulatory infrastructure for radioactive material management (2012)
- Issued an Information Protection Program for the protection of sensitive nuclear information in 2013 (2012)
- Issued a new regulatory guide on Identification and Maintenance of Target Sets and Timeline Analysis (2012)
- Implemented an INSSP (2014)
- Issued a law to control and increase the security of UAE ports, borders, and free zones (2014)
- Issued a new regulatory guide on Cyber Security at Nuclear Facilities (2014)
- Issued a new regulatory guide on Response and Contingency Plans of Nuclear Facilities in 2015 (2014)

UNITED ARAB EMIRATES (cont')

NSS Participant since 2010

- Received an ISSAS mission (2014, 2016)
- Issued a new regulatory guide on Physical Protection for Transportation of Nuclear Material (2016)
- Updated regulations on Physical Protection of Nuclear Material and Nuclear Facilities (2016)
- Updated regulations on the export and import control of nuclear material (2016)
- Received an IPPAS mission (2016)
- Received an EPREV mission (2016)
- Updated Information Protection Program for the protection of sensitive nuclear information in 2018 (2016)

Participation in Joint Statements

- Nuclear Information Security (2012, 2014)
- Security of Radioactive Sources/Enhancing Radiological Security (2012, 2014)
- Nuclear Security Training and Support Centers (2012, 2014)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- National Legislation Implementation Kit (2014)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Maritime Supply Chain Security (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- Cyber Security (2016)

CPPNM: 2003

CPPNM/A: 2009

ICSANT: 2008

GICNT: Yes

UNITED KINGDOM

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Continued to support radiological and nuclear security projects internationally (2010, 2012, 2014, 2016)
- Upgraded physical protection at seven sites in Russia (2012)
- Assisted in developing centralized storage for radioactive sources in Ukraine (2012)
- Continued to support projects to minimize and repatriate HEU in Kazakhstan and Uzbekistan (2012, 2014)
- Provided a ship to move excess plutonium from Germany and Switzerland to the United States (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Developed new technologies for detecting radiological and nuclear material (2012)
- Improved border monitoring in Ukraine and Kazakhstan (2014)
- Developed border and in-country detection infrastructure (2016)

Progress on Education and Training Initiatives

- Developed nuclear curriculum for industry (2012)
- Supported regional workshops to raise awareness of the CPPNM/A in Senegal and Kenya (2012)
- Developed multilateral master's program in nuclear security with other European nations (2012, 2014)
- Hosted two ITWG conferences on nuclear forensics (2014)
- Chaired Global Partnership Working Group for Centers of Excellence (2014)
- Hosted workshops on the fundamentals of nuclear security (2014)
- Developed nuclear security training courses (2014)
- Hosted GICNT's symposium, table-top exercise, and workshop on nuclear forensics and detection (2014, 2016)
- Hosted a workshop to develop good practice in responding to radiological and nuclear emergencies (2016)
- Hosted two workshops to develop best practices to enhance supply chain security and the transportation of nuclear material by sea (2016)
- Hosted regional conferences and response exercises to counter nuclear smuggling in the Black Sea region (2016)

Progress on Governance Structures and Processes

- Established the Office of Nuclear Regulation (2012)
- Implemented new national strategic framework to prepare for nuclear emergencies (2012)
- Updated regulations for nuclear safety, security, safeguards, and transport (2012, 2016)
- Established a Global Partnership working group on radiological and nuclear security (2016)

UNITED KINGDOM (cont.)

NSS Participant since 2010

Participation in Joint Statements

- Global Partnership (2012)
- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Transport Security (2012, 2014)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- Nuclear Training and Support Training Centers (2012, 2014, 2016)
- Nuclear Terrorism Preparedness and Response (2012, 2016)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Maritime Supply Chain Security (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Security of High Activity Radioactive Sources/Enhancing Radiological Security (2014, 2016)
- Maritime Transport Good Practice Guide (2016)
- Rail Transport Good Practice Guide (2016)
- Certified Training (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Consolidated Reporting (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)
- Contributions of GICNT to Enhancing Nuclear Security (2016)

CPPNM: 1991

CPPNM/A: 2010

ICSANT: 2009

GICNT: Yes

UNITED STATES

NSS Participant since 2010

WEAPONS USABLE MATERIAL

Progress on Nuclear and Radiological Security

- Received separated plutonium from various countries (2010, 2012, 2014)
- Converting 6 remaining HEU-fueled reactors and conducting R&D to enable quicker conversions (2010, 2012, 2014, 2016)
- Assisted with the removal of HEU from 10 countries (2010, 2012, 2014, 2016)
- Enhanced radiological security in 34 countries (2010, 2012, 2014, 2016)
- Converted HEU to LEU (2012)
- Assisted Russia in converting HEU to LEU (2012)
- Urged Mo-99 industry to use LEU (2012)
- Removed all Category 1 and 2 material at Lawrence Livermore National Laboratory (2012, 2014)
- Downblended Russian HEU fuel (2012, 2014)
- Upgraded physical protection at more than 240 domestic facilities and incorporated security by design features at new buildings with sensitive materials (2012, 2014)
- Enhanced force-on-force and performance testing for domestic facilities (2012, 2014)
- Contributed to the development of new research reactor fuels (2012, 2014)
- Completed zero-based security assessments at all NNSA facilities (2012, 2014)
- Recovered domestic radiological sources and repatriated US origin sources (2014, 2016)
- Consolidated the number of domestic sites with weapons-usable materials (2014, 2016)
- Established a pilot production line for high-density LEU fuel (2016)
- Inspected nuclear power plants to verify compliance with cyber security plans (2016)
- Replacing cesium blood irradiators at medical facilities with alternative technology (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Developed new neutron detection technologies (2010)
- Launched an international effort to develop a nuclear forensics library, exercises, and common lexicons (2010, 2014)
- Updated database of US nuclear materials and developed a process for foreign partners to query the US library (2012, 2014)
- Equipped more than 80 sites worldwide with radiation detection systems (2014, 2016)
- Equipping federal operators at ports of entry and in land, air, and sea pathways with radiation detection systems (2014, 2016)

Progress on Education and Training Initiatives

- Hosted workshop on nuclear security as chair of Global Partnership (2012)
- Hosted the first international nuclear regulators conference on nuclear security (2012)
- Trained primary responders in radiological alarm response (2012)
- Strengthened HRP evaluations (2012)

UNITED STATES (cont.)

NSS Participant since 2010

- Established a U.S.-Japan nuclear security working group and conducted security by design peer reviews at processing facilities (2012, 2014)
- Hosted a nuclear forensics methodology workshop for international participants with the IAEA (2012, 2014)
- Hosted table top exercises on nuclear security (2012, 2014)
- Conducted exercises to increase nuclear response preparedness (2012, 2014)
- Held domestic exercises to increase nuclear preparedness, response, recovery, resilience (2012, 2014)
- Conducted trainings in nuclear detection techniques (2012, 2014, 2016)
- Facilitated WINS workshops, best practice guides, and outreach activities (2012, 2014, 2016)
- Co-chaired GICNT (2012, 2014, 2016)
- Hosted a GICNT exercise on countering the financing of nuclear terrorism (2014)
- Hosted a GICNT nuclear detection workshop with Germany and an experts meeting on developing national-level nuclear forensics programs (2014)
- Hosted a workshop on best practices in countering nuclear smuggling with the EU (2014)
- Conducted force-on-force and performance testing for US facilities (2014)
- Held a P-3 expert-level security information exchange about protecting sites with significant amounts of weapons-usable materials (2014, 2016)
- Provided training and equipment to Centers of Excellence and Nuclear Security Support Centers (2014, 2016)
- Facilitated a multilateral exercise on national nuclear forensics libraries (2014, 2016)
- Hosted expert-level security information exchanges (2016)
- Conducted more than 300 nuclear and radiological security workshops (2016)
- Conducted 12 counter terrorism table top exercises (2016)

Progress on Governance Structures and Processes

- Signed PMDA (2010)
- Hosted first and fourth NSS in Washington, D.C. (2010, 2016)
- Supported extension of the Global Partnership (2010)
- Passed law to phase out production of medical isotopes using HEU over a 7-year period (2012)
- Developed regulations regarding physical protection of radiological by-product materials (2012)
- Developed a strategic plan for the Global Nuclear Detection Architecture (2014)
- Created a cyber security directorate and issued industry regulations (2014)
- Received an IPPAS mission (2014)
- Updated DBT to include new physical protection, information security, and accountancy measures based on vulnerability assessments (2014)
- Developed a strategic plan for the Global Nuclear Detection Architecture (2014)
- Updating physical protection regulations and taking into consideration IAEA INFCIRC225/Rev5 (2014)
- Published regulations governing the security of military materials and associated annual budgets (2014)

UNITED STATES (cont.)

NSS Participant since 2010

- Establishing a material attractiveness approach to better inform national graded security regulations in consultation with regulators around the world (2014, 2016)
- Developed and implemented regulations for the protection of Category 1 and Category 2 quantities of radioactive material, including new inspection and enforcement requirements (2014, 2016)
- Drafted a Memorandum of Understanding OU to enhance cooperation among US agencies on radioactive materials transport (2016)

Participation in Joint Statements

- Minimization of HEU and the Reliable Supply of Medical Radioisotopes (2012)
- Global Partnership (2012)
- Trilateral Cooperation at the Former Semipalatinsk Test Site (2012)
- Nuclear Security Summit Outreach Effort (2012)
- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Transport Security (2012, 2014)
- Multinational Cooperation on High-Density LEU Fuel Development (2012, 2014)
- Countering Nuclear Smuggling (2012, 2014, 2016)
- Nuclear Training and Support Training Centers (2012, 2014, 2016)
- GICNT (2012, 2014)
- Nuclear Terrorism Preparedness and Response (2012, 2016)
- Strengthening Nuclear Security Implementation (2014)
- Promoting Full and Universal Implementation of UNSCR 1540 (2014, 2016)
- Maritime Supply Chain Security (2014, 2016)
- Forensics in Nuclear Security (2014, 2016)
- Security of High Activity Radioactive Sources/ Enhancing Radiological Security (2014, 2016)
- Air Transport Good Practice Guide (2016)
- Maritime Transport Good Practice Guide (2016)
- Road Transport Good Practice Guide (2016)
- Certified Training (2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- LEU Fuel Bank (2016)
- National Nuclear Detection Architecture (2016)
- Consolidated Reporting (2016)
- Cyber Security (2016)
- HEU Minimization (2016)
- Insider Threat Mitigation (2016)
- Transport Security (2016)
- INTERPOL and the United States of America on Cooperation to Combat the Illicit Trafficking of Nuclear and Radiological Material (2016)
- Contributions of GICNT to Enhancing Nuclear Security (2016)
- EU-US Nuclear Forensics International Technical Working Group (2016)
- EU-US HEU Exchange (2016)
- US-Japan Cooperation (2016)
- US and Kazakhstan Cooperation in the Sphere of Nuclear Nonproliferation and Nuclear Security (2016)
- US and the Kingdom of the Netherlands on the Scenario Based Policy Discussion Apex Gold (2016)
- US-China Joint Statement on Nuclear Security Cooperation (2016)
- High-Density Fuel Development (2016)

CPPNM: 1982

CPPNM/A: 2015

ICSANT: 2015

GICNT: Yes

VIETNAM

NSS Participant since 2010

Progress on Nuclear and Radiological Security

- Converted research reactor to LEU (2010, 2012)
- Repatriated HEU to Russia (2012, 2014)
- Upgraded physical security for its nuclear facility and facilities with Category 1 sources (2012, 2014, 2016)
- Upgraded security at spent fuel storage facilities (2016)

Progress on Counter Nuclear and Radiological Smuggling

- Implemented a pilot program for tracking radioactive sources with Republic of Korea (2012, 2014)
- Implemented the Megaports Initiative (2012, 2014, 2016)
- Deployed radiation detection monitors at international port and seaports (2012, 2014, 2016)
- Established a radioactive source registry and tracking system (2012, 2016)

Progress on Education and Training Initiatives

- Organized several national workshops on border security with the IAEA (2014)
- Held national workshop on information security with the United States on INFCIRC 225/Rev 5 (2014)
- Organized a national seminar on regulatory framework for nuclear security (2016)
- Organized three seminars on nuclear security culture (2016)
- Organized multiple training courses for first responders with the IAEA (2016)
- Organized the International Workshop on Combatting Illicit Trafficking of Nuclear Materials (2016)

Progress on Governance Structures and Processes

- Strengthened legal and regulatory framework (2012)
- Developed the INSSP (2012, 2014)
- Developed its DBT methodology (2014)
- Established an integrated nuclear security network between the customs authority and the nuclear regulatory body (2016)
- Created a national early warning and response network (2016)
- Joined the PSI (2016)
- Received an IPPAS mission (2016)

Participation in Joint Statements

- National Legislation Implementation Kit (2012, 2014)
- Nuclear Information Security (2012, 2014)
- Countries Free of HEU (2014)
- Strengthening Nuclear Security Implementation (2014)
- Nuclear Training and Support Centers (2014, 2016)
- A Comprehensive Approach to Nuclear Security (2014, 2016)
- Sustaining Action to Strengthen Global Nuclear Security Architecture (2016)
- National Nuclear Detection Architecture (2016)

CPPNM: 2012
CPPNM/A: 2012
ICSANT: 2016
GICNT: Yes

Nuclear Security Summit Action Plans: A Brief Update

Leaders at the 2016 NSS recognized that continuous improvement is necessary to strengthen and maintain the global nuclear security architecture. In addition to creating a contact group for summit participants to remain engaged with the work of the summits, states endorsed action plans for five international organizations to continue enhancing nuclear security in specific areas.

The following provides a brief overview of each action plan and an update on some of the work undertaken by each of the five organizations to advance the goals of the action plans. These updates are not exhaustive.

International Atomic Energy Agency (IAEA)

The IAEA Action Plan was the most comprehensive, reflecting the central role that the agency plays in developing nuclear security guidance and providing assistance with implementation to states. The IAEA Action Plan included tasks such as enhancing coordination between the five action plans, encouraging ratification and full implementation of the CPPNM, and continuing to develop guidance on nuclear security and transport security. The action plan also called for the IAEA to assist in minimization of HEU and promote the use of non-HEU technologies for applications such as medical isotope production. Other elements included assisting states in maintaining nuclear forensics capabilities, enhancing nuclear security culture, and developing guidance for information and cyber security.

The IAEA reported in 2017 that, since the 2016 summit, it had assisted states in providing nuclear security assistance for eight major public events and made more than 150 pieces of equipment for detection available to these states. The IAEA also piloted a new training course on establishing control systems for nuclear security during storage, use, and movement and revised its guidance on physical protection. IAEA trainings that support Action Plan objectives covered an array of issues, including a transport security meeting for 57 states, nuclear security culture workshops in nine states, six national DBT workshops, eight workshops on radiological crime science management, and sent expert missions to four states to discuss nuclear forensics. Moreover, since 2016, the IAEA has developed an additional 10 e-learning courses on nuclear security. Finally, three states received IPPAS missions and an additional 10 requested missions for 2017-2018.

The IAEA's Action Plan also touched on the importance of maintaining high-level attention and momentum on nuclear security. To that end, the IAEA hosted its second ministerial level conference on nuclear security in December 2016 and adopted a new three-year nuclear security plan in 2017. The ministerial conference emphasized the importance of CPPNM adherence and reported on the IAEA's progress on advancing consensus guidance on nuclear security, including assistance for states in strengthening computer security. The IAEA aims to complete its computer security guidance for nuclear facilities in the 2018-2021 period. The IAEA also reported that it is analyzing feedback from its IPPAS missions in order to increase effectiveness and develop best practices.

United Nations (UN)

The UN Action Plan focused primarily on strengthening implementation and achieving universality for international legal frameworks that are the foundation for the global nuclear security architecture. The Action Plan called on the UN to step up efforts to implement UNSCR 1540, including assistance to states to enhance reporting and outreach to non-reporting states. It also called for a high-level meeting of states parties to review ICSANT in 2017, and encouraged non-state parties to ratify the treaty. The Action Plan also called on the UN and its member states to pledge additional resources, share information on best practices for nuclear and radiological security, and advocate for reviews of implementation of instruments relating to nuclear and radiological security.

In accordance with the Action Plan, the UN hosted a meeting in December 2017 marking the 10th anniversary

since ICSANT entered into force. Participants shared information on national models for implementing ICSANT and meeting the treaty's obligations. The UN Office on Drugs and Crime (UNODC) hosted the gathering and reiterated that a priority area for the body is universalizing effective implementation of the treaty and sharing best practices. The conference findings also urged states to consider and support opportunities at the national level to foster better cooperation amongst stakeholders for meeting the intent of the treaty. UNODC is also creating an e-learning framework to support international legal architecture for combating CBRN terrorism and reviews legislation from member states upon request to ensure conformity with treaties, including ICSANT. The UN Security Council also passed a resolution in 2016 that built upon UNSCR 1540, including provisions encouraging states to seek assistance to implement commitments under the resolution.

Interpol

The Interpol Action Plan called for the organization to facilitate exchange of information with law enforcement on nuclear-related threats, including access to Interpol's databases. The Action Plan also called on Interpol to enhance capacity to support multinational investigations, identify and share best practices, and conduct training exercises on nuclear-related threats.

Interpol's Radiological and Nuclear Terrorism Prevention Unit has engaged in a number of activities in support of its NSS Action Plan. Interpol has three projects in particular, Operation Conduit, Project Geiger, and Project Stone, that relate to the plan's objectives. Operation Conduit is focused on improving operations at airports and seaports and improving coordination amongst law enforcement for nuclear material smuggling investigations. Project Geiger collates information on illicit trafficking of nuclear and radiological materials and provides analysis on risks and trends. Project Stone is aimed at improving nuclear and radiological detection and interdiction capabilities at select countries: Ukraine, Jordan, Mexico, Colombia, and Peru. Project Stone also assists states in developing counter nuclear smuggling teams. Interpol runs general training courses and exercises on investigations, counter nuclear smuggling, and table-top exercises that are designed to bring together and facilitate cooperation across agencies and forces.

Global Initiative to Combat Nuclear Terrorism (GICNT)

The GICNT was created in 2006 by the United States and Russia to strengthen capacities to prevent, detect, and respond to nuclear terrorism. It is a voluntary multilateral initiative currently comprised of 88 member states. The GICNT has three working groups focused on nuclear detection, nuclear forensics, and response and mitigation.

The GICNT Action Plan focused on activities that build capacity in member states, foster cooperation between GICNT partners, conduct on scenario-based discussions and exercises, and encourage coordination and collaboration between the GICNT and other relevant organization.

Since the conclusion of the summit process, the GICNT has held more than 10 exercises and workshops across the three areas of focus: nuclear forensics, nuclear detection, and response and mitigation. Several workshops included cooperation with other initiatives tasked with action plans at the 2016 NSS. Canada worked with the UN and the Slovak Republic on "Vigilant Marmot," to address challenges in adopting and updating national nuclear security legal frameworks. In collaboration with Interpol, Romania hosted "Olympus" in October 2016, to promote collaboration and communication between law enforcement and nuclear detection and forensics experts. At the 2017 plenary, Finland, the incoming coordinator of the Implementation and Assessment Group, recommended that the GICNT adopt thematic focuses on radioactive sources security, sustainability, and legal frameworks. Finland called on working group chairs to include these elements in their planning for 2017-2019. Finland also recommended that the working groups focus on activities that promote regional approaches to nuclear security and improve implementation sharing by developing better systemic practices.

Global Partnership Against the Spread of Weapons of Mass Destruction

The Global Partnership Against the Spread of Weapons of Mass Destruction was a G-8 initiative formed in 2002 that has subsequently expanded to 29 partner states. Initially it focused on securing and eliminating weapons usable material and WMDs in former Soviet states. The Global Partnership's activities included dismantling nuclear submarines, fissile material disposition, and engagement with scientists that worked on WMD programs. It has subsequently expanded in scope to address a range of WMD threats in states beyond the former Soviet Union.

The Global Partnership Action Plan focused on coordinating funding for strengthening nuclear and radiological security at the national level by focusing on human reliability programs, implementation of INFCIRC/225/Rev5, nuclear forensics, and disposition and conversion of nuclear materials. The Global Partnership committed to raise additional funding for response capabilities, expand its membership, and strengthen its program for matching donor countries with assistance projects.

The Global Partnership's working groups focus on different elements of the action plans. The Center of Excellence working group has supported projects, including strengthening nuclear security culture by increasing cooperation between centers and assisting with programs to reduce insider threats. Partner countries have also funded trainings, upgrades for radioactive source security and security upgrades at nuclear sites, and assisted states in establishing forensic databases through the nuclear and radiological working group.

ADDITIONAL RESOURCES

Previous Nuclear Security Summit Assessments

- "The 2010 Nuclear Security Summit: A Status Update," An Arms Control Association and Partnership for Global Security Report, by Robert Golan-Vilella, Michelle Marchesano, and Sarah Williams, April 2011, **https://armscontrol.org/system/files/Status_Report_April_11_2011_WEB.pdf**

- "The Nuclear Security Summit: Assessment of National Commitments," An Arms Control Association and Partnership for Global Security Report, by Michelle Cann, Kelsey Davenport, and Margaret Balza, March 2012, **https://armscontrol.org/files/ACA_NSS_Report_2012.pdf**

- "The Nuclear Security Summit: Progress Report," An Arms Control Association and Partnership for Global Security Report, by Michelle Cann, Kelsey Davenport, and Sarah Williams, July 2013, **https://armscontrol.org/files/Nuclear_Security_Summit_Report_2013.pdf**

- "The Nuclear Security Summit: Assessment of Joint Statements," An Arms Control Association and Partnership for Global Security Report, by Michelle Cann, Kelsey Davenport, and Sarah Williams, March 2014, **https://www.armscontrol.org/files/ACA_NSS_Report_2014_FINAL.pdf**

- "The Nuclear Security Summit: Assessment of Joint Statements," An Arms Control Association and Partnership for Global Security Report, by Michelle Cann, Kelsey Davenport, and Jenna Parker, March 2015, **https://www.armscontrol.org/files/ACA_NSS_Report_2015.pdf**

- "The Nuclear Security Summit: Accomplishments of the Process," An Arms Control Association and Partnership for Global Security Report, by Michelle Cann, Kelsey Davenport, and Jenna Parker, March 2016, **https://www.armscontrol.org/files/The-Nuclear-Security-Summits-Accomplishments-of-the-Process.pdf**

Nuclear Security Summit Websites

- April 12-13, 2010, Washington, D.C.: **http://www.nss2016.org/past-summits/2010**

- March 26-27, 2012, Seoul: **http://www.nss2016.org/past-summits/2012**

- March 24-25, 2014, The Hague: **http://www.nss2016.org/past-summits/2014**

- March 31-April 1, 2016, Washington, D.C.: **http://www.nss2016.org/**

Nuclear Security Contact Group

- **http://www.nscontactgroup.org/**

The Arms Control Association (ACA), founded in 1971, is a national nonpartisan membership organization dedicated to promoting public understanding of and support for effective arms control policies. Through its public education and media programs and its magazine, Arms Control Today (ACT), ACA provides policy-makers, the press and the interested public with authoritative information, analysis and commentary on arms control proposals, negotiations and agreements, and related national security issues. In addition to the regular press briefings ACA holds on major arms control developments, the Association's staff provides commentary and analysis on a broad spectrum of issues for journalists and scholars both in the United States and abroad.

The Fissile Materials Working Group (FMWG) is a non-governmental coalition of over 80 civil society organizations from around the world working to provide actionable policy solutions to keep the world safe from nuclear terrorism. Since September 2017, it has been hosted by the Center for Arms Control and Non-Proliferation, a national nonpartisan, non-profit dedicated to enhancing peace and security through expert policy analysis and thought-provoking research.

Arms Control Association

FMWG fissile materials working group

The 2016 Nuclear Security Summit brought to a close President Barack Obama's high-level initiative to reduce the risk of nuclear terrorism and secure weapons-usable nuclear materials. The four biannual summits from 2010-2016 played a significant role in bringing high-level political attention to the threat posed by vulnerable nuclear and radiological materials around the world and strengthening the global nuclear security regime.

As part of the summit process, states were encouraged to make national commitments, known as house gifts, to take specific actions to strengthen nuclear security. Building on this concept, the 2012 summit began the tradition of offering multilateral joint statements, known as gift baskets, in which groups of states came together to address key gaps in the nuclear security architecture. The national commitments and joint statements resulted in some of the most tangible and innovative nuclear security improvements over the course of the summit process.

This report offers a comprehensive assessment of the national commitments states undertook as part of the summit process. While these commitments represent significant advances, effective nuclear security requires continuous improvement to address gaps and new threats. States must continue to build on the accomplishments of the summit process to minimize the risk of nuclear terrorism.

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