



Nuclear Security:

Seoul, the Netherlands, and Beyond

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Nuclear Security: ***Seoul, the Netherlands, and Beyond***

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EXECUTIVE SUMMARY

The 2014 Nuclear Security Summit (NSS) in the Netherlands will be the third in a series of heads-of-state summits to prevent nuclear terrorism by strengthening global nuclear security. At the first summit in Washington in 2010, leaders endorsed a four-year international effort to secure all vulnerable nuclear materials worldwide. At the second summit in Seoul in 2012, leaders expanded their focus beyond protecting fissile materials to include radioactive source security and the safety and security interface at nuclear facilities. This broader definition of the nuclear security agenda provides a stable foundation for the 2014 summit to build upon.

The Netherlands summit will be the third NSS with a fourth scheduled for Washington in 2016. The agenda for 2014 has not yet been set, but participants can be expected to review the progress made since past summits and evaluate what more needs to be accomplished. NSS participants will also have the opportunity to announce a long-term vision for the nuclear security regime. This could lead to the streamlining of existing initiatives, which could provide the political impetus to unlock further progress. It is not yet known what a successor process for the NSS will look like beyond the final summit in 2016.

The nuclear industry and expert communities will hold their own parallel summits to supplement the governmental event in 2014. Similar events were held in Seoul and Washington during the previous summits. Cross-sector collaborations are critical to strengthening the nuclear security system; each sector has a unique contribution to make and a stake in preventing a nuclear or radiological terrorism incident. There needs to be regular dialogue among all stakeholder communities. Non-governmental organizations (NGOs) and the nuclear industry should be partners in the process of limiting risk, setting expectations, and communicating with the media and public on nuclear security issues.

Some of the most meaningful technical and policy initiatives to come out of the NSS process have been in the form of national and multinational commitments (“house gifts” and “gift baskets”) on highly enriched uranium (HEU) minimization, separated plutonium repatriation, and regulatory framework updates. These commitments support the priorities outlined in the official summit communiqués and offer near-term, concrete progress. They were created as a means to encourage countries to do more than the political consensus process leading up to the NSS would allow by adding projects and results to the summits. Additional house gifts and gift baskets can be expected at the 2014 summit. Some experts are encouraging participants to make pledges

that take a regional approach to nuclear security challenges and governance issues, among other recommendations.

A key hurdle in creating a more effective international nuclear security regime is the view held by many states that strengthening the regime is primarily a problem for nuclear weapon states, not a global challenge. However, to truly universalize the nuclear security agenda, ensure it remains vibrant and continues to evolve, new nuclear security leaders and champions are needed, particularly from middle powers and emerging economy nations. This is challenging because some of these countries fear the nuclear security agenda will be used to block access to nuclear technology. This is not the case. The real goal of nuclear security is to protect the public from uncontrolled releases of radiation. Developed and developing countries share an interest in creating a safe and secure future for nuclear technology. Engagement with skeptical developing countries should focus on the economic value of strengthening the global nuclear security system. A nuclear terrorism incident in any country will have widespread consequences for geopolitics and the global economy.

Another significant challenge is the largely sovereign and voluntary nature of the nuclear security regime. If the regime were designed from scratch today, it would look more like other transnational regimes, including nuclear safety, that better balance transparency with confidentiality and national sovereignty with international responsibility. Peer reviews, regular evaluations, and reporting requirements are some of the most valuable elements of the nuclear safety regime that have facilitated its improvement over time. The nuclear security regime can learn from the nuclear safety regime how to become more systemized and foster a culture of continuous improvement.

There is growing recognition that stronger governance structures are necessary in the nuclear security regime to make the national and international systems that protect nuclear materials and facilities more comprehensive and connected. Moving towards this objective should be the goal of international agencies that cover nuclear security. However, even if universalized, existing agreements still leave significant gaps, especially in implementation. There is a need to deepen and broaden today's nuclear security governance structures, but the more ambitious the proposal, the more difficult it is to gain support. One potential path forward would be for a small group of like-minded states to pursue ambitious objectives while the IAEA moves along its own universal track before eventually merging the complementary efforts.

The NSS has been very supportive of the IAEA's role in nuclear security, and the IAEA is a potential successor option when the summit process will likely end in 2016. Its member states have become somewhat more supportive of moving forward in dealing with this challenge than previously, but the IAEA needs to be significantly strengthened and overcome important political and bureaucratic challenges in order to be a successful substitute for the heads-of-state summits. The IAEA's technical capacity is unquestioned, but its ability to effectively drive a political process is still open to question.

The 2014 NSS will need to provide a clear explanation of what has been achieved over the last four years and where the regime is heading. It also could create a foundation for engaging coun-

tries beyond the 53 current participants. Multinational commitments provide one avenue for creating alliances among like-minded countries eager to test creative ideas for strengthening the regime. These projects can outlive the NSS process, involve countries beyond NSS participants, and demonstrate new concepts and principles. They can help create new norms and best practices that can be widely implemented to protect global nuclear and radiological materials and safeguard the future use of nuclear technology.

RECOMMENDATIONS

Nuclear Security: From Seoul to the Netherlands

- *Leadership of the summit host government is critical.* The hosts of future summits need to be clear about their obligations and expectations. In addition to the Sherpa and sous-Sherpa, a dedicated staff is necessary to address summit planning issues. Strength of purpose and a commitment to clear results must be demonstrated by all government participants.
- *Defining the scope is essential.* The 2010 NSS limited the scope of the summit to HEU and plutonium, but the 2012 NSS expanded the agenda to include radiological material and the nuclear safety and security interface at facilities. This expanded platform provides a stable foundation for the nuclear security agenda going forward and issues relevant to a larger number of countries inside and outside of the NSS process, especially those that do not possess any fissile material.
- *The summit vision should be ambitious, but near-term products should be concrete and measurable.* President Obama's four-year goal provided a broad vision for the future to catalyze the attention of heads-of-state at the summits. With the four-year effort ending, a new vision is needed. However, step-by-step progress also remains important. House gifts and gift baskets provide a means of combining ambitious vision with tangible, near-term action.
- *Patiently manage different country perspectives while maintaining focus.* Different countries have different threat perspectives and visions for the future. This fact needs to be accommodated in order to have agreement on the official documents. It is not an excuse for inaction.
- *Determine and prioritize the summit's goals.* If the goal is to build consensus around nuclear security issues, focus should be on negotiating the strongest possible consensus communiqué. If the goal is to achieve as many concrete actions and demonstrable programs as possible, then it is better to focus on developing house gifts and gift baskets around ideas where consensus is not required.
- *Include all stakeholders.* NGOs and the nuclear industry should be partners in the process of measuring risk and setting expectations for nuclear security. Globally inclusive forums, particularly those organized by the IAEA, should be used to help engage the full scope of

countries.

- *Engage often with journalists in the lead up to the summit.* The issue of nuclear security is not well understood by most journalists and is often confused with nonproliferation and nuclear safety. Journalists are important both for communicating news and translating highly technical information into understandable language for a non-technical audience. The NSS host country should use nuclear security related events already taking place around the world to educate journalists on the substance of the issue and why it is important. This will help them understand the significance of the summit and its outcomes. Organizers at the 2012 NSS held formal briefings, screened movies, and launched an official website. They even commissioned a Korean pop star to perform an official 2012 NSS theme song. An understanding of the issues must be developed in advance of the summit since once journalists are on the ground their attention will be mainly directed to the actions of the leaders.
- *Avoid providing overly technical information to the public and media.* Communication outputs must be digestible to those not steeped in the technical details of this issue to be effective. Journalists are telling the story of the summit to the public and they cannot do this with only technical materials. Summit accomplishments need to be placed in a societal context that conveys why this issue, which does not normally drive headlines, warrants personal attention from world leaders.

Technical and Policy Initiatives within the NSS

- *Report on progress toward meeting HEU commitments.* Several countries signed joint statements to initiate collaborative research projects focused on transitioning away from civil uses of HEU. Though these projects will likely not be completed before the 2014 summit, progress reports should be provided at the event on achievements to date.
- *Bring the 2005 Convention on the Physical Protection of Nuclear Material (CPPNM) amendment into force.* Full implementation of the existing elements of the international nuclear security regime has been a core focus of the summit process. Leaders should ensure that their governments complete all necessary national procedures for approving the 2005 amendment prior to the 2014 NSS to meet one of the basic goals of the Seoul Communiqué.
- *Better align plutonium production with its use.* An internationally recognized hard cap on global plutonium separation is unlikely to gain universal support, but production management processes can be improved. National strategies for matching plutonium use with its production to avoid further stockpile accumulations should be pursued.
- *Increase the barriers to radiological terrorism.* Radioactive sources are vital to the operation of medical industrial sectors around the world. However, these sources are not adequately protected and local law enforcement personnel may be unaware of their existence in their jurisdiction or how to most effectively respond if a threat arises. The

U.S. National Nuclear Security Administration (NNSA) offers a range of physical barrier upgrades and training programs that can help radioactive source holders and law enforcement officials enhance their preparedness to fend off radiological security threats.

- *Encourage the use of technologies that do not use high-activity radioactive sources whenever possible.* National policies should favor the use of alternative technologies over those relying on high-activity radioactive sources whenever possible. Summit participants could present demonstration projects of such technologies as house gifts at the 2014 NSS.
- *Hold annual dialogues for international nuclear regulators.* The first international nuclear regulators' conference was held in December 2012. This event was a good first step. However, to truly improve regulator performance across borders through best practice exchanges, it should be made more interactive and held on a regular basis. A pledge to take the lead in regularizing the event and enhancing its agenda could be offered as a gift basket at the 2014 NSS.
- *Explore regional approaches to nuclear security advancement.* The NSS has concentrated on consensus-based communiqués but regional groupings may be better suited for delivering near-term results. New nuclear power development is largely concentrated in regional clusters. These countries and their neighbors share similar cultures and have direct interests in the nuclear security practices of states on their borders. Encouraging region-wide dialogues among these states could build confidence in national programs, prepare for emergency response, and counter nuclear smuggling.
- *Create regional radiological security zones.* States should consider working with other nations in their region to generate new ideas about radiological tracking, disposal, and physical security. They should pursue region-wide implementation of measures they determine are best suited to their circumstances. Assistance from outside the region, such as from the NNSA, could help make these zones a reality.
- *Develop new EU guidance or a directive on nuclear security.* The EU completed and published reports on the results of the nuclear safety and security stress tests conducted in the aftermath of the Fukushima accident. The EU should consider offering a gift basket at the 2014 NSS that provides details on how the lessons learned will be integrated into EU guidance or a new directive and what lessons may be applicable to other countries and regions.

Perspectives on Nuclear Security: Emerging Economies and the Non-Aligned Movement

- *Encourage prioritization of nuclear and radiological security by all states.* Not all states have nuclear facilities, materials, or experience with terrorism, but this does not make them immune to the global economic impacts of a nuclear terrorist event. This economic stake should be emphasized.

- *Analyze the global economic impacts of nuclear and radiological terrorism.* A robust economic analysis on the global consequences of nuclear and radiological terrorism is needed to demonstrate the stake that all countries have in prevention. Studies to date have been largely focused on the impacts of an event on Western capitals and trading ports and most of these are classified. It would be beneficial to have a public analysis of the impact on a non-Western nation.
- *Be clear about the goals of nuclear security.* Some developing nations are concerned that the focus on nuclear security will deny them access to nuclear technology. However, the purpose of nuclear security is to protect the public from uncontrolled releases of radiation stemming from misuse, not to limit technology access. NSS documents have made this point, but it must continue to be emphasized that strong nuclear security is vital to the peaceful use of nuclear technologies by all responsible states and actors.
- *Increase IAEA regular budget allocations for nuclear security and technical assistance.* Large portions of the IAEA's nuclear security and technical assistance programs are funded by voluntary contributions outside of its regular budgeting process. Both programs would benefit from more stable funding from the regular budget. A political compromise should be sought to raise both programs' regular budget allocations.

Building Future Cooperation between Industry, Experts, and Government

- *Take a more comprehensive approach to global nuclear security governance.* There are significant gaps in the national efforts and international instruments that make up the global nuclear security regime. A more comprehensive approach that emphasizes cohesion, transparency, and accountability is needed. An international nuclear security framework agreement is one way to unify the regime and better align national actions with international responsibilities.
- *Consult with the nuclear industry on new governance policies.* Nuclear industry actors play a vital role in global security. Their input and participation in the creation of new policy frameworks is key to ensuring that proposed policy solutions are practical and will result in the outcomes that policy makers intend.
- *Publicize nuclear security principles in action.* Companies that are taking their nuclear security responsibilities seriously should make their actions more widely known to build confidence among the public. The 2014 NSS offers an opportunity for companies to present how they put nuclear security principles into action. The World Institute for Nuclear Security (WINS) could help companies package this information as part of an industry gift basket for the summit.
- *Issue a nuclear industry joint statement on nuclear security.* The 2014 nuclear industry summit offers companies an opportunity to share best practices, initiate dialogue on challenges, and showcase their progress in the field of nuclear security. The lessons learned from this event and the working group activities that precede it should be captured in a

joint statement issued by industry at the conclusion of their summit.

- *Commit to join WINS.* While WINS' membership continues to grow, there are still actors not represented. Participants at the 2014 industry summit should commit to joining WINS. This pledge could be included in a joint statement to demonstrate a commitment to long-term, continued engagement on nuclear security.
- *Encourage industry groups to take a more active role in nuclear security.* Groups such as World Association of Nuclear Operations (WANO), World Nuclear Association (WNA), and WINS are well positioned to lead industry-wide efforts to improve nuclear security. They could facilitate new dialogues on information sharing and transparency and encourage broader acceptance and implementation of Carnegie Endowment for International Peace's (CEIP) Principles of Conduct for Nuclear Exporters.
- *Create regional nuclear security working groups of industry actors.* Industry summit organizers should consider creating regional working groups in the run-up to 2014. These groups may be better suited to develop practical solutions to specific challenges that regions at different stages of nuclear program development are facing than groups organized by topics. All working groups should be encouraged to produce sustainable commitments for the 2014 NSS that demonstrate industry's resolve to keep nuclear materials and facilities secure.

The Nuclear Safety/Security Interface

- *Bring together nuclear safety and security regulators.* Performance-based regulation could help improve the overall safety and security at nuclear facilities. National safety and security regulators should engage each other and their international peers to explore the pros and cons of this approach and to generate new ideas on how this could be accomplished.
- *Investigate methods for broadening the impact of IAEA IPPAS missions.* International Physical Protection Advisory Service (IPPAS) missions are important and useful, but their mechanisms for peer review and information sharing are limited because they are done at the request of states and results are confidential. To broaden the benefits of these missions, the IAEA could offer them to states as well as the option to share lessons learned from the missions.
- *Encourage voluntary reporting on nuclear security activities.* States should establish a new norm, in the absence of formal requirements, to regularly report to the IAEA on their nuclear security efforts. These reports could include guidance on how widely the information should be shared.
- *Support voluntary peer reviews of nuclear security reporting.* States could commit to voluntarily engaging in dialogues with other countries, such as at the NSS or among regional groups, about their nuclear security practices. Though not legally required to supply in-

formation, states could demonstrate a commitment to global nuclear security progress and best practice exchanges by answering questions posed by their peers.

- *Report on how to balance confidentiality and transparency in nuclear security information sharing.* A nuclear security center of excellence, WINS, or a group of countries could offer a gift basket at the 2014 NSS on the appropriate balance of confidentiality and transparency in nuclear security in regard to regular evaluations, peer reviews, and reporting. A technical group could determine what information could be safely shared and its findings tested with computer modeling on an artificial facility. The results could be shared with participants at the 2014 NSS.

Innovating Global Nuclear Security Governance

- *Encourage small groups of states to test nuclear security governance concepts.* Universality is necessary to fully realize strong nuclear security governance objectives, but waiting for all states to move forward together is a recipe for inaction. Instead, encouraging small groups of like-minded states to lead by example and undertake proof-of-concept nuclear security governance projects could help jump-start the process and establish a path toward more ambitious goals. The results of these efforts could be shared and promoted through the IAEA to facilitate long-term universalization.
- *Ensure involvement by top-level nuclear industry executives.* Chief officers should be familiar with their company's nuclear security policies and whether they are being properly implemented. Without top-level attention, nuclear security is unlikely to be highly prioritized within the company structure. These executives should provide assurances to national regulators that security at their facilities is being properly attended to so regulators can confidently carry that message to the international level.
- *Expand on the 2012 national progress reports.* The national progress reports submitted for the 2012 NSS were an important step toward greater nuclear security information sharing. States were free to share whatever they chose about their progress in implementing the summit's objectives, and these reports were posted online. To strengthen their quality and utility, future progress reports could have a common format or be subject to a question and answer exchange with NSS peers. Such dialogue could help introduce peer review into the nuclear security regime.
- *Create a nuclear security statement of principles.* The NSS process lacks a long-term vision. The 2014 NSS could begin to define an end point with a statement of principles for nuclear security; it could even be a restatement of the IAEA's Fundamentals of Nuclear Security. This political document could take many forms, such as a gift basket offered by a few NSS participants or an annex to the communiqué that is open to signature from all states. A target of 25 initial signatories should be sought to help lay the foundation of a document that outlives the NSS process. The statement could facilitate continued innovation in nuclear security and become the core of an international framework convention.

- *Look for governance models outside of the nuclear field.* The twenty-first century governance challenges facing the nuclear security regime are not unique. Other businesses and fields are grappling with similar transnational issues and pursuing innovative ways to deal with them. Nuclear security stakeholders should look for adaptable governance models from fields as diverse as health, aviation, finance, and information technology.
- *Use voluntary regimes to improve performance.* NSS participants should be considering alternative structures that create strong incentives for better regime-wide performance. Financial, reputational, and accreditation incentives have been used in other industries to raise performance above legal mandates.

Maintaining Political Momentum

- *Maintain a high-level political process.* The convening of the NSS process reflects the importance of adding a political dimension to the largely technical issue of nuclear security. Both elements—technical services and political involvement—are necessary to compel progress into the future. If the NSS ends, a forum that continues to foster high-level political support will remain necessary.
- *Offer a nuclear security governance gift basket in 2014.* While not all states may be willing to continue to devote high-level attention to nuclear security, those states that prioritize the issue could offer a nuclear security governance-focused gift basket in 2014. This could establish an informal structure for cooperation among a core group of states willing to lead on this issue. As IAEA members, they could report to the full membership on their efforts to provide input into the broader global system.



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