

INITIATIVE ON NUCLEAR SECURITY, GOVERNANCE AND GEOPOLITICS (INSG)

NUCLEAR SECURITY AND EMERGING TECHNOLOGIES: THE IMPACT OF CYBER AND
ARTIFICIAL INTELLIGENCE & SECURITY AGAINST EMP

March 22, 2018
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Seoul, South Korea

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What is the INSG?

Initiative that brings together multinational experts from key countries to effectively address the critical and evolving nuclear challenges of the 21st Century.

It's key goals are to:

- Strengthen the overall nuclear governance system
- Assess the international security and geopolitical implications of global nuclear technology trends and related developments
- Sustain and further build the vital relationship between governments, the nuclear industry and the expert community that is necessary to achieve progress

The Evolution of INSG

The INGS is an evolution of the Nuclear Security Governance Experts Group (NSGEG), an influential international NGO group that provided *realistic solutions to address weaknesses and gaps in the global nuclear security system*. It was an instrument that:

- Expanded the Nuclear Security Summit's scope to embrace nuclear governance as a core issue.
- Helped create the NSS' Nuclear Security Implementation Initiative, INFCIRC/869
- Developed more than 50 recommendations for improving nuclear security and supported the creation of 5 Priorities for the Global Nuclear Security.
- Engaged actively with the Centers of Excellence of Japan and South Korea, government officials and NSS Sherpas, and the nuclear industry.



5 PRIORITIES FOR GLOBAL NUCLEAR SECURITY

The 2016 Nuclear Security Summit (NSS) must result in **bold, new actions** that advance global nuclear security objectives, create a mechanism for continuous and measurable progress, and provide opportunities and incentives for all stakeholders to participate. To achieve these goals, international experts and organizations agree that world leaders must act on five priorities.

- 1 MAKE THE GLOBAL NUCLEAR SECURITY REGIME COMPREHENSIVE.**
 - Commit to fully implement all elements of the existing nuclear security regime.
 - Demonstrate effective security for all nuclear materials—civilian and military—against all plausible threats.
- 2 SHARE INFORMATION TO BUILD GLOBAL CONFIDENCE.**
 - Identify and exchange non-sensitive data about security practices, standards, and implementation.
 - Accept regular peer reviews of security instruments and practices.
- 3 IMPLEMENT MEASURABLE BEST PRACTICES AND STANDARDS.**
 - Develop common international security performance objectives and standards and demonstrate implementation.
 - Make available best security practices from all nations and regions for implementation in any country.
- 4 CREATE A SUSTAINABLE MECHANISM FOR CONTINUOUS PROGRESS.**
 - Establish an integrated mechanism that ensures continued high-level attention and drives new nuclear security commitments and resources after the NSS' end.
 - Continue the NSS practice of promoting essential roles for the IAEA, other international organizations, the nuclear industry, and global experts.
- 5 OFFER PLANS FOR ELIMINATING CIVIL HEU AND REDUCING PLUTONIUM.**
 - Announce a time-bound roadmap for eliminating the use of civil highly-enriched uranium.
 - Propose actions to reduce plutonium stockpiles and balance supply and demand.

5priorities.org | twitter.com/FMWG | facebook.com/FMWGorg



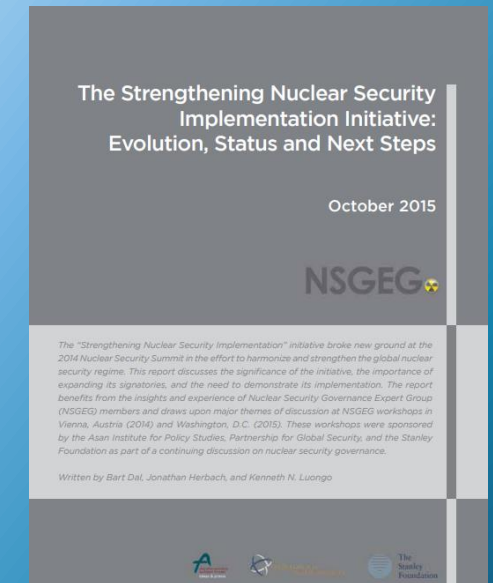
IAEA
Atoms for Peace

Information Circular **INFCIRC/869**
Date: 22 October 2014
General Distribution
Original: English

Communication Received from the Netherlands Concerning the Strengthening of Nuclear Security Implementation

Joint Statement on Strengthening Nuclear Security Implementation

1. The Secretariat has received a note verbale from the Permanent Mission of the Kingdom of the Netherlands, dated 9 October 2014, in which the Permanent Mission on behalf of the Governments of Algeria, Armenia, Australia, Belgium, Canada, Chile, Czech Republic, Denmark, Finland, France, Georgia, Germany, Hungary, Israel, Italy, Japan, Kazakhstan, Lithuania, Mexico, Morocco, the Netherlands, New Zealand, Norway, Philippines, Poland, the Republic of Korea, Romania, Spain, Sweden, Turkey, Ukraine, United Arab Emirates, the United Kingdom, the United States of America and Viet Nam, requested that the Secretariat bring the note verbale and its attachment to the attention of all IAEA Member States.
2. In light of this request, the text of the note verbale, as well as the attachment thereto, are hereby reproduced for the information of all Member States.



The Strengthening Nuclear Security Implementation Initiative: Evolution, Status and Next Steps

October 2015

NSGEG

The "Strengthening Nuclear Security Implementation" initiative broke new ground at the 2014 Nuclear Security Summit in the effort to harmonize and strengthen the global nuclear security regime. This report discusses the significance of the initiative, the importance of expanding its signatories, and the need to demonstrate its implementation. The report benefits from the insights and experience of Nuclear Security Governance Experts Group (NSGEG) members and draws upon major themes of discussion at NSGEG workshops in Vienna, Austria (2014) and Washington, D.C. (2015). These workshops were sponsored by the Aarn Institute for Policy Studies, Partnership for Global Security, and the Stanley Foundation as part of a continuing discussion on nuclear security governance.

Written by Bart Dal, Jonathan Herbach, and Kenneth N. Luongo

Aarn Institute for Policy Studies, Partnership for Global Security, The Stanley Foundation



International Nuclear Security Peer Reviews

Making the IAEA IPPAS General and Sustainable

November 2016

NSGEG

This report reviews the critical elements of a generalized and sustainable peer review system and provides recommendations that, if implemented, will strengthen the International Atomic Energy Agency (IAEA) International Physical Protection Advisory Service (IPPAS) and place the international peer review in a new relation with the national assessments of operators' compliance with their licenses of operation. A nexus of international peer reviews, national assessment, and active participation of the nuclear industry and other operators should be the goal to ensure optimal performance of each stakeholder. Recommendations focus on actions that member states could consider to enable the IAEA to lead generalized and sustainable international nuclear security peer reviews modeled after the present IPPAS system.

Anita Nilsson, John Bernhard, and Caroline Jorant

Aarn Institute for Policy Studies, Partnership for Global Security, The Stanley Foundation

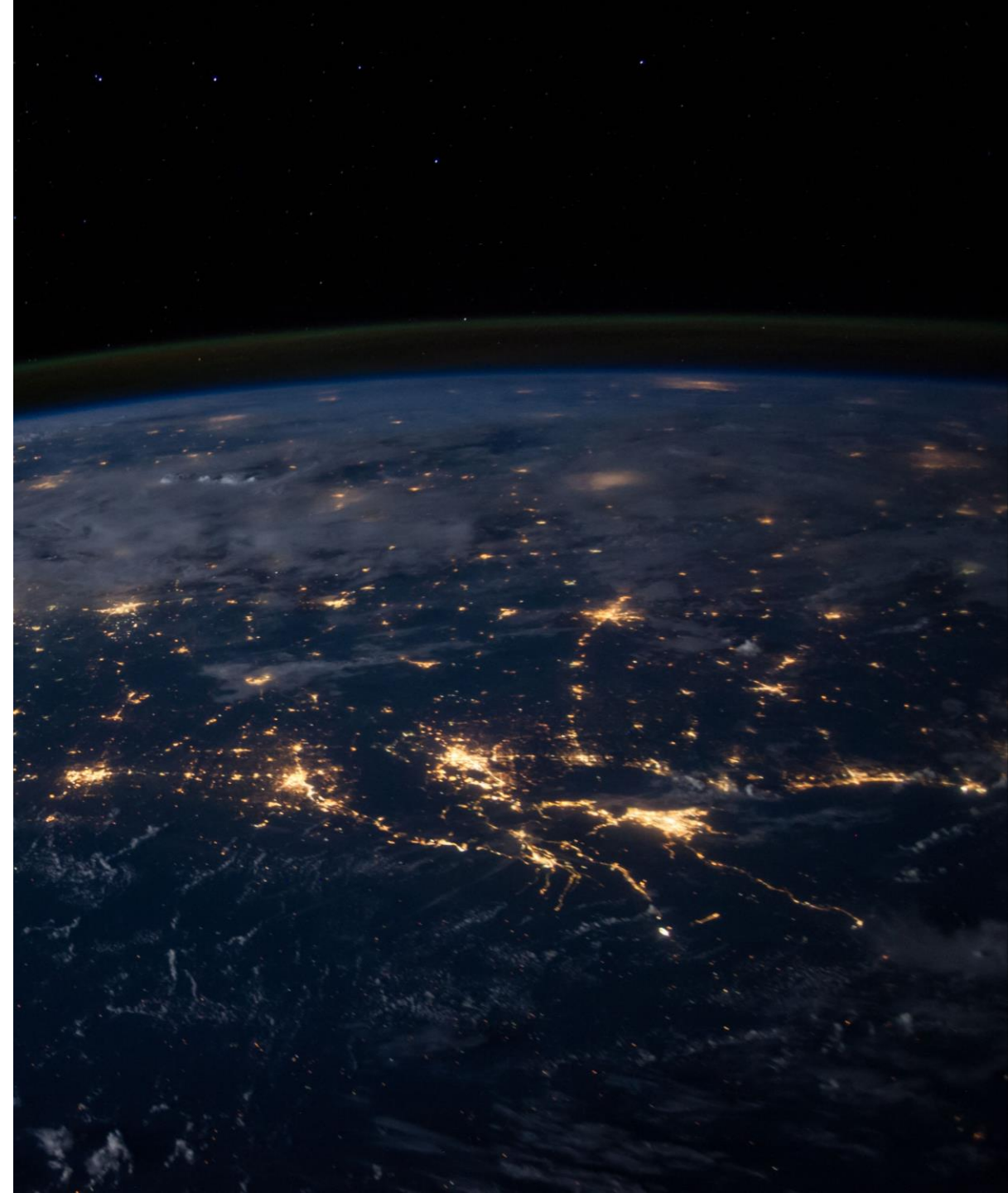
INSG Objectives

Strengthen Nuclear Governance

- Improve nuclear security transparency, information sharing, peer review, and related confidence building activities
- Create common international nuclear security standards
- Generate additional support for IAEA INFCIRC/869
- Promote and further develop activities to strengthen and close gap between the nuclear security and safeguards regimes

Respond to the Challenges Posed by Emerging Disruptive Technologies

- Identify policy responses and collaborations to address new stresses created by emerging disruptive technologies such as cyber, AI, materials science and 3D printing, EMP, bio-nano, and robotics on nuclear infrastructure and governance.



INSG Objectives

Improve Nuclear Geopolitics in the 21st Century

- Understand how a new era of great power rivalry impacts the evolution of nuclear power and global security - politically, technologically, and economically.
- Evaluate how the evolution of new nuclear suppliers, particularly China and Russia, impacts non-proliferation, nuclear security, and global security objectives.
- Identify a role for traditional nuclear suppliers including ROK in ensuring the maintenance and expansion of strong security and non-proliferation standards in response to new challenges.
- Develop new relationships and coalitions that focus on the serious implications of nuclear geopolitics and strengthen leadership and collaboration among key governments and institutions to effectively respond to them.
- Propose policies that promote safe, secure and safeguarded nuclear energy to meet climate goals and global security objectives.

Nuclear Governance and Emerging Technologies: Workshop Objectives

- Discuss the challenges posed by cyber technologies and the emergence of artificial intelligence for civil nuclear facilities and their security
- Address new stresses created by these emerging disruptive technologies on the existing governance regime
- Identify a path forward for continued engagement and understanding of the nuclear policy responses that may be needed to address the challenges posed by the global technology evolution
- Assess the threat posed by EMP and response to it

