

Executive Summary

Hiroshima Report 2017

Evaluation of Achievement in Nuclear Disarmament, Non-Proliferation and Nuclear Security in 2016

March 2017

The prospects of eliminating nuclear weapons are still distant at best. Even more worrying, the situation regarding nuclear weapons is becoming more and more complex. The five nuclear-weapon states (NWS) under the Nuclear Non-Proliferation Treaty (NPT)—China, France, Russia, the U.K. and the U.S.— and other nuclear-armed states—India, Israel and Pakistan—have not made any definite move toward renouncing their nuclear arsenals. Non-nuclear-weapon states (NNWS) increase their frustration over such a situation, and many of them pursue to promote a legal prohibition of nuclear weapons. However, it is also a concern that the rift between proponents (many NNWS) and opponents (nuclear-weapon/armed states and nuclear umbrella states) has been further widening. On nuclear non-proliferation, while the situation surrounding the Iranian nuclear issue has moved more positively, North Korea conducted two nuclear tests and more than 20 ballistic missile flight tests in 2016, and repeated nuclear provocations. The threat persists of a new proliferator emerging on the scene. The threat of nuclear terrorism also remains a high security concern in this globalized world. Growing worldwide interest in peaceful use of nuclear energy could entail the increasing risk of nuclear proliferation as well as terrorism. While problems facing nuclear disarmament, non-proliferation and nuclear security intensify, efforts toward solving them have progressed at a snail's pace.

This report attempts to help the movement toward a world without nuclear weapons—first, by clarifying the current status of the issues and efforts surrounding nuclear disarmament, non-proliferation and nuclear security. By doing so, it aims to encourage increased debate on these issues by policy-makers, experts in and outside governments, and civil society. Furthermore, by issuing this report from Hiroshima, where a nuclear weapon was once used, it aims to help focus attention and promote further actions in various fields towards the realization of a world without nuclear weapons.

Items and Countries Surveyed in the *Hiroshima Report 2017*

Items (64)	<ul style="list-style-type: none"> ● Nuclear Disarmament: 31 ● Nuclear Non-Proliferation: 17 ● Nuclear Security: 16
Countries surveyed (36)	<ul style="list-style-type: none"> ● NWS: China, France, Russia, the U.K. and the U.S. ● Non-NPT parties: India, Israel and Pakistan ● NNWS: Australia, Austria, Belgium, Brazil, Canada, Chile, Egypt, Germany, Indonesia, Iran, Japan, Kazakhstan, South Korea, Mexico, the Netherlands, New Zealand, Nigeria, Norway, Philippines, Poland, Saudi Arabia, South Africa, Sweden, Switzerland, Syria, Turkey and UAE ● Other: North Korea *

* North Korea declared its suspension from the NPT in 1993 and its withdrawal in 2003, and conducted nuclear tests in 2006, 2009, 2013 and 2016 (twice). However, there is no agreement among the states parties on North Korea's official status.

The following is a summary of the results of surveying and evaluating countries' performances in 2016, which is also shown in graphic forms in accordance with evaluation criteria (see Part II of the *Hiroshima Report*).

1. Nuclear Disarmament

Since the end of the Cold War, the overall number of nuclear weapons has been decreasing. Still, approximately 15,395 nuclear weapons remain on the earth, and nuclear-weapon/armed states continue to modernize their nuclear arsenals. While NNWS have explored promotion of nuclear disarmament through, among others, proactive proposals on disarmament measures, little major progress was made in 2016. The U.S. and Russia have yet to commence negotiation on further reductions of their nuclear weapons. Russia was alleged to be in non-compliance with the Intermediate-Range Nuclear Forces (INF) Treaty. The entry into force of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and commencement of a Fissile Material Cut-Off Treaty (FMCT) negotiation have not yet been achieved. Declaratory or employment policies of nuclear posture, as well as nuclear strategies, of nuclear-weapon/armed states remain almost unchanged.

The 2016 UN General Assembly (UNGA) adopted the resolution on convening in 2017 a UN conference to negotiate a legally binding instrument to prohibit nuclear weapons. However, the voting behavior on this resolution revealed that the rift among NWS, NNWS allying with the U.S. (nuclear umbrella states), and other NNWS, over those issues has been deepening.

(1) The status of nuclear forces (estimates)

- Approximately 15,395 nuclear weapons still exist on the earth. The pace of their reduction has been slowing down.

(2) Commitment to achieve a world without nuclear weapons

- The Open-Ended Working Group on Taking Forward Multilateral Nuclear Disarmament Negotiations (OEWG) was held.
- Based on the recommendation of the OEWG, at the 2016 UNGA, the resolution titled “Taking forward multilateral nuclear disarmament negotiations” was adopted, in which the UNGA “[d]ecides to convene in 2017 a United Nations conference to negotiate a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination.” Most of nuclear-armed/umbrella states voted against it, and rest of them abstained.
- On the Japan-led UNGA Resolution titled “United action towards the total elimination of nuclear weapons,” the U.S. voted in favor as one of co-sponsors; France and the U.K. abstained; and China and Russia voted against the resolution in 2016.

(3) Reduction of nuclear weapons

- Russia and the U.S. keep implementing the New Strategic Arms Reduction Treaty (New START). However, they could not commence negotiation on further reduction of their nuclear arsenals.
- An extension of an expiry date of the New START, which the U.S. reportedly contemplated, was not realized.
- Russia was alleged to have violated the INF Treaty, while it denied.
- Nuclear-weapon/armed states continue to promote or contemplate modernization of their respective nuclear arsenals. In particular, North Korea conducted two nuclear tests and more than 20 ballistic missile flight tests, and mentioned a success of miniaturizing nuclear warheads.

(4) Diminishing the role and significance of nuclear weapons in the national security strategies and policies

- The U.S. reportedly contemplated a possibility to declare a no-first-use of nuclear weapons, but could not adopt such a policy due to opposing opinions.

- There have been few significant changes in nuclear policies regarding: the role and significance of nuclear weapons; a “sole purpose” or no first use; negative security assurances; and extended deterrence.

- North Korea repeated to threaten a first use of nuclear weapons vis-à-vis Japan, the U.S. and South Korea.

- Russia and the U.S. demonstrated their nuclear deterrent power through military exercises and flight patrols in Europe.

(5) De-alerting or measures for maximizing decision time to authorize the use of nuclear weapons

- There have been few significant changes in NWS’s policies on their alert status. Russian and U.S. strategic nuclear forces are considered to remain on high alert status.

(6) CTBT

- Among the 44 states listed in Annex 2 of the CTBT, whose ratification is a prerequisite for the treaty’s entry into force, five states (China, Egypt, Iran, Israel and the U.S.) have signed but not ratified, and three (India, North Korea and Pakistan) have not even signed.

- Aiming to, inter alia, promote CTBT’s entry into force, UNSCR 2310 was adopted on September 23, which was led by the U.S..

- The 20 Years CTBT Ministerial Meeting in June and the Eighth Ministerial Meeting of the Friends of the CTBT in September were convened.

- North Korea conducted the fourth nuclear test in January and the fifth one in September.

(7) FMCT

- In the 2016 session of the Conference on Disarmament (CD), negotiation of an FMCT could not be commenced yet again, due to Pakistan’s strong objection.

- The UNGA resolution, requesting the UN Secretary-General to establish a high-level FMCT expert preparatory group in Geneva in 2017 and 2018, was adopted.

- China, India, Israel, Pakistan and North Korea have yet to declare a moratorium on production of fissile material for nuclear weapons.

(8) Transparency in nuclear forces, fissile material for nuclear weapons, and nuclear strategy/doctrine

- The U.S. declassified the number of nuclear weapons stockpiles (excluding those waiting for dismantlement), and that of dismantled nuclear weapons.

(9) Verifications of nuclear weapons reductions

- 26 countries participate in the International Partnership for Nuclear Disarmament Verification (IPNDV) launched by the U.S., and the third (in Tokyo) and fourth (in Dubai) plenaries held in 2016.

(10) Irreversibility

- Russia and the U.S. continue to dismantle or convert,

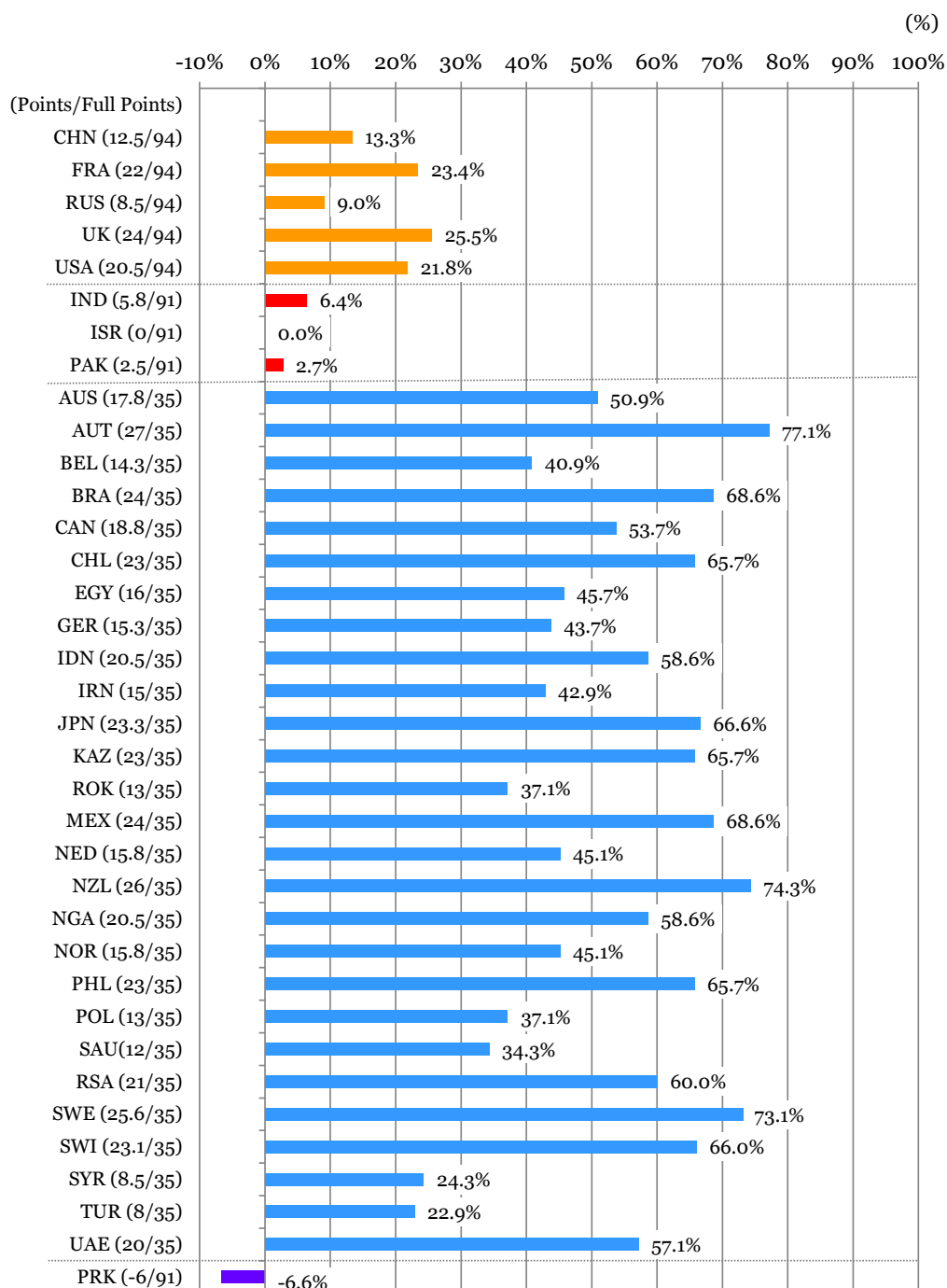
to some extent, their strategic delivery vehicles, nuclear warheads, and fissile material declared excess for military purposes.

- Russia, criticizing the U.S. behavior, suspended implementation of the Russian-U.S. Plutonium Management and Disposition Agreement (PMDA).

(11) Disarmament and non-proliferation education and cooperation with civil society

- Japan and other western countries proactively conducted disarmament and non-proliferation education, and cooperated with civil society.
- U.S. President Barack Obama visited Hiroshima in the first visit by a sitting U.S. president to the cities which suffered from the atomic bombings.

Nuclear Disarmament

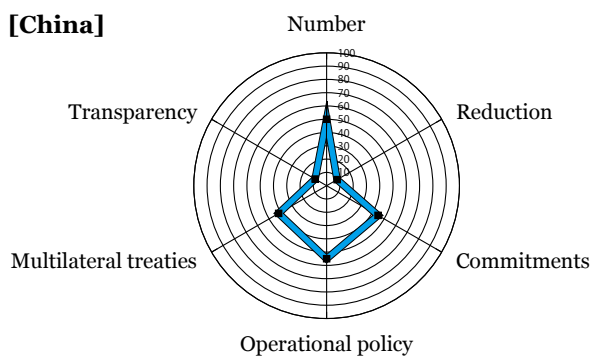


6-Point Nuclear Disarmament Radar Charts (NWS)

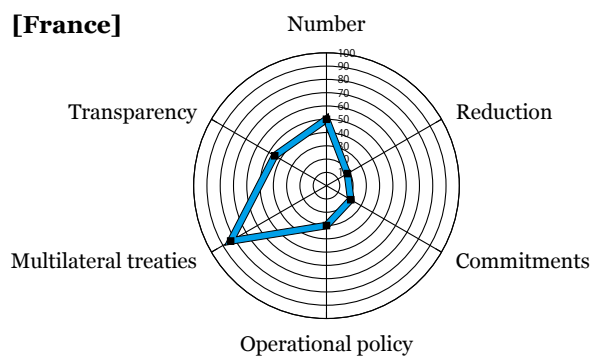
The following radar charts aim to illustrate where NWS stand in different aspects of nuclear disarmament. For this purpose, the 12 issues used for nuclear disarmament evaluation were grouped into six aspects. According to the radar charts, China is required to improve its efforts for nuclear weapons reduction and transparency. To a lesser extent, France could be more transparent regarding its nuclear weapons-related issues. Russia and the U.S. are urged toward further reductions of their nuclear arsenals. The performances of the U.K. are relatively well balanced.

Aspects	Issues
Number	Number of Nuclear weapons
Reduction	Reduction of Nuclear weapons
Commitments	Commitments to achieving a world without nuclear weapons
	Disarmament and non-proliferation education and cooperation with the civil society
	Hiroshima Peace Memorial Ceremony
Operational policy	Diminishing roles and significance of nuclear weapons in the national security strategies and policies
	De-alerting, or measures for maximizing decision time to authorize the use of nuclear weapons
Multilateral treaties	Comprehensive Nuclear-Test-Ban Treaty (CTBT)
	Fissile Material Cut-Off Treaty (FMCT)
Transparency	Transparency regarding nuclear forces, fissile material for nuclear weapons, and nuclear strategy/doctrine
	Verifications of nuclear weapons reductions
	Irreversibility

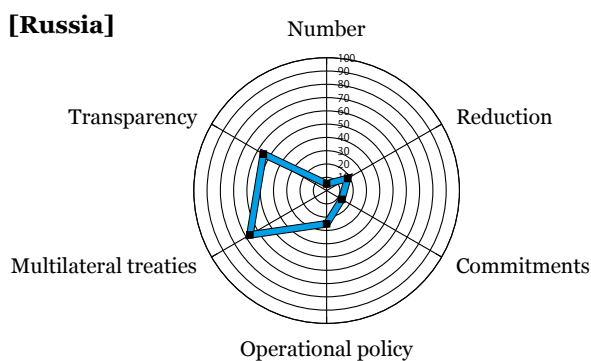
[China]



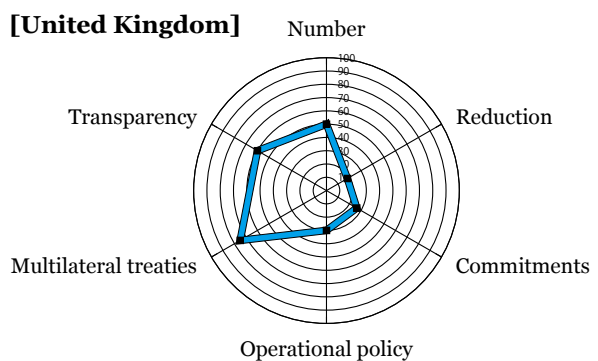
[France]



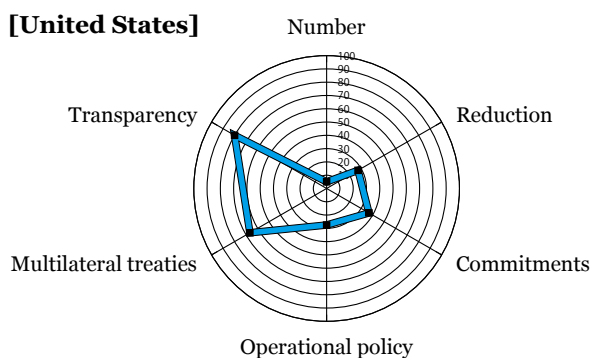
[Russia]



[United Kingdom]



[United States]



2. Nuclear Non-Proliferation

As of December 2016, 191 countries (including the Holy See and Palestine) have acceded to the Nuclear Non-Proliferation Treaty (NPT). However, three nuclear-armed states—India, Israel and Pakistan—remain outside and are less likely to join the Treaty in the near future. North Korea declared its withdrawal from the NPT twice, announced its possession of nuclear weapons, and conducted nuclear test explosions five times. One of the most significant developments was that Iran continued to implement the Joint Comprehensive Plan of Action (JCPOA).

The number of countries that accept the IAEA safeguards under the IAEA Additional Protocols has increased steadily. In addition, Iran applied provisional application of the Additional Protocol. On export controls, most members of the Nuclear Suppliers Group (NSG) have solid export controls in place. On the other hand, there are concerns that North Korea and Iran are continuing illicit trafficking and procurement activities for nuclear- and missile-related developments.

(1) Acceptance and compliance with the nuclear non-proliferation obligations

- North Korea has failed to respond to the UN Security Council's decisions; rather, it conducted two nuclear tests and more than 20 ballistic missile flight tests; it has not undertaken return to the NPT. Six-Party Talks could not be convened even in 2016.
- Iran and E3/EU+3 concluded the JCPOA in July 2015, whose "implementation day" was set, and met, in January 2016. Iran has duly implemented the agreement during 2016.

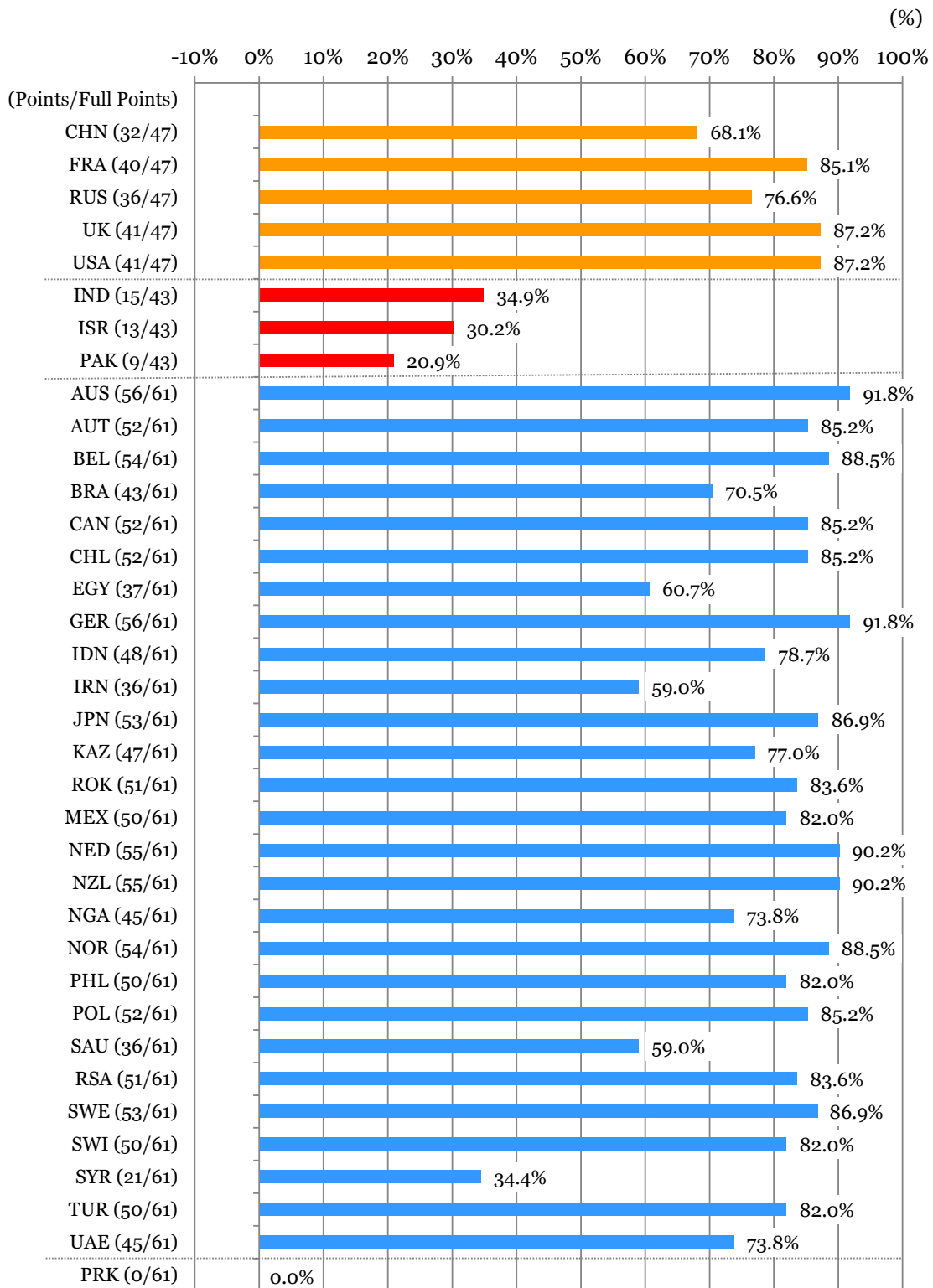
(2) IAEA safeguards

- As of 2016, 122 NPT NNWS have ratified the IAEA Additional Protocols.
- Some countries argue that the conclusion of an Additional Protocol should be voluntary, not obligatory.
- Iran has accepted verification and monitoring by the IAEA. Iran also continues to provisionally apply the Additional Protocol.
- The IAEA continued to contemplate a state-level concept (SLC) for its safeguards. It implemented state-level safeguards approaches for 54 states under integrated safeguards during 2015.

(3) Implementing appropriate export controls on nuclear-related items and technologies

- Most members of the Nuclear Suppliers Group (NSG) have solid export controls in place, including establishment of legislative measures and other relevant national implementation systems.
- North Korea and Iran are a concern in terms of continued illicit trafficking and procurement of nuclear-related items.
- Japan-India Nuclear Cooperation Agreement was signed. On civil nuclear cooperation with India as a non-party to the NPT, some countries seek to promote proactively while others contemplate cooperation, subject to implementing additional nuclear disarmament and non-proliferation measures.
- China has been criticized because its export of nuclear power reactors to Pakistan may constitute a violation of the NSG guidelines.

Nuclear Non-Proliferation



3. Nuclear Security

The most prominent event related to nuclear security in 2016 was in March, which was led by former U.S. President Barack Obama's initiative. The process of the summit visualized each country's efforts to prevent nuclear terrorism and to continue to follow the joint statements of the multilateral "basket proposal", in a moderate way. It attracts much attention that the states are still making continuous efforts to strengthen nuclear security measures, although the series of such security summits came to an end. Also, in March, simultaneous terrorist attacks occurred in Belgium, and police investigation after the incidents revealed the devastating fact that the terrorists had also sought to attack nuclear facilities. In terms of nuclear security, this case made a huge impact on the international community. In December, the second IAEA International conference on Nuclear Security was held in Vienna, and the agency took the lead on multilateral efforts to deal with nuclear security issues. In this sense, international efforts on nuclear security reached an important stage in the year 2016.

(1) The amount of fissile material usable for weapons

- Most of the surveyed countries have been conducting nuclear fuel cycle related activities. Also, it has been assumed that a certain level of "attractive" fissile material is still stored in more than one third of the surveyed countries.

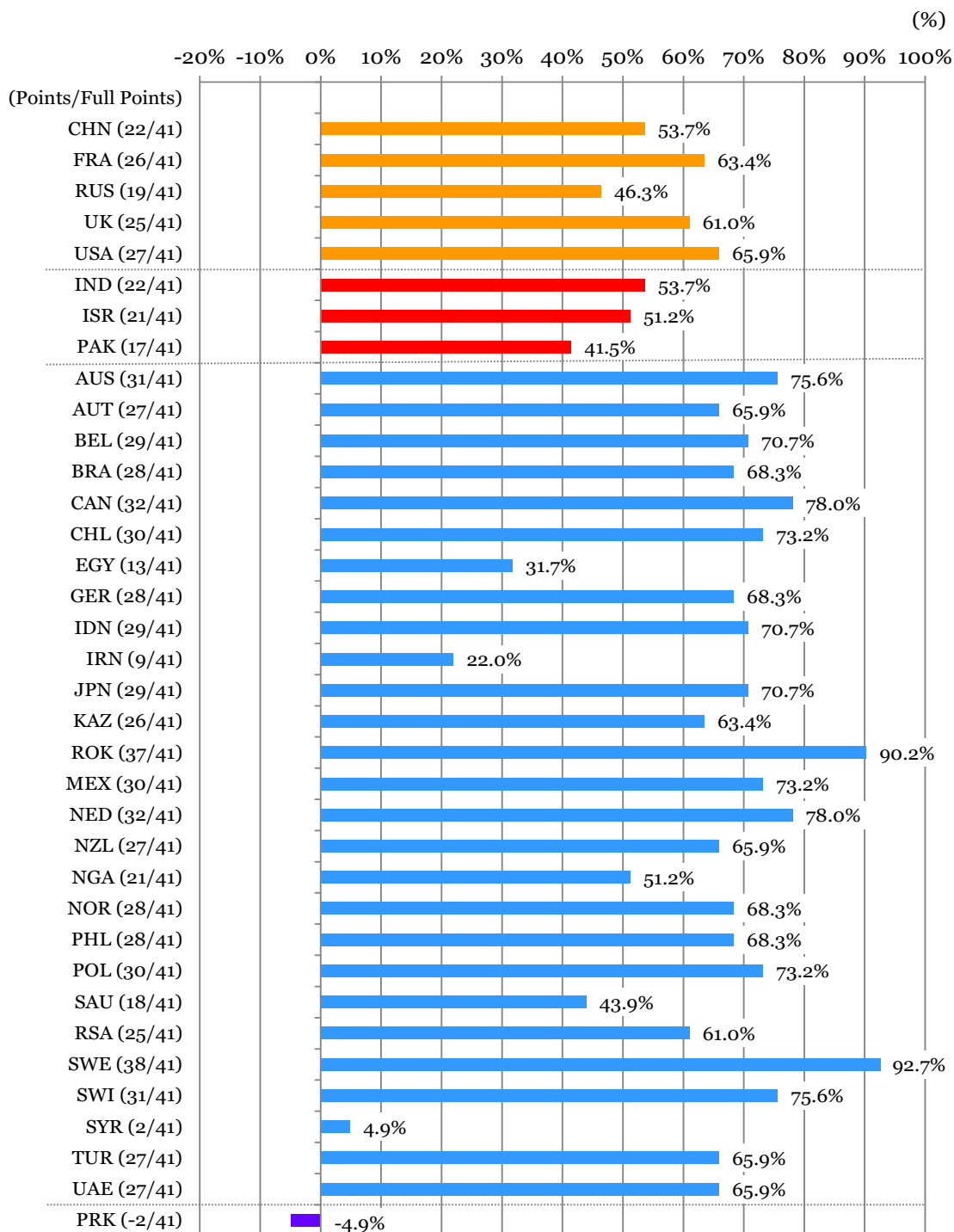
(2) Status of accession to nuclear security- and safety-related conventions, participation in nuclear security-related initiatives, and application to domestic systems

- Most of the surveyed countries have acceded to treaties and conventions on nuclear security and safety. Countries of proliferation concern, such as Iran, North Korea and Syria, have failed to achieve substantive progress on joining those treaties and conventions.
- Convention on the Physical Protection of Nuclear Material (CPPNM) Amendment successfully entered into force in 2016. Implementing the provisions of the Amendment, and further promoting among un-ratified state parties, would be the immediate tasks.
- Implementing INFCIRC/225/Rev.5 is a key for strengthening nuclear security. Although information disclosure on this subject has been limited among the countries with advanced civil nuclear programs, in many cases it was confirmed that domestic implementation was continuously undertaken.
- Countries of proliferation concern have neither joined the several treaties on nuclear security and safety nor applied INFCIRC/225/Rev.5 to their national security systems. In some cases, there are negative trends on disclosing relevant information and transparency improvement. With the end of Nuclear Security Summit Process, concerns are rising over the issue of transparency of those countries.

(3) Efforts to maintain and improve the highest level of nuclear security

- Efforts for minimizing Highly Enriched Uranium (HEU) in civilian use have achieved some positive results and continued to be further promoted under, among others, the Global Threat Reduction Initiative (GTRI).
- The number of countries with advanced civil nuclear programs, which have accepted, or are scheduled to accept, the IAEA's advisory services, such as International Physical Protection Advisory Service (IPPAS) reviewing and recommending nuclear security of the recipients, has increased.
- The Nuclear Forensics International Technical Working Group (ITWG) on illegal transfer of nuclear materials and the Global Initiative to Combat Nuclear Terrorism (GICNT) Nuclear Forensics Working Group (NFWG) have conducted numerous workshops and tabletop exercises. These efforts have led to support for the development of nuclear forensics capability of member countries.
- In response to increased awareness about the importance of nuclear security capacity building and international cooperation in this area, many states with advanced civil nuclear programs have established, or are establishing, Centers of Excellence (COE) for nuclear security training. Cooperation is promoted among the COEs in the same region and the International Network for Nuclear Security Training and Support Centres (NSSC Network), has been assuming a key role in facilitating further exchange of information and best practices between those COEs.

Nuclear Security



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