



Report of the Nuclear Safety and Security Group

The G7 Nuclear Safety and Security Group (NSSG), established at the Kananaskis Summit in 2002 and responsible to Leaders, provides technically informed policy advice on issues that could impact safety and security in the peaceful use of nuclear energy, in close collaboration with multilateral organizations. We remain committed to achieving and maintaining high levels of nuclear safety and security globally to ensure the responsible use of nuclear energy, through both our ongoing collective and individual efforts.

Coordination with other G7 Working Groups

In January 2018, for the first time, the NSSG held joint sessions with the G7 Non-Proliferation Directors Group (NPDG) and the Global Partnership Nuclear and Radiological Security Working Group (NRSWG) to reinforce linkages between the Groups and ensure there are no overlaps. The meetings focused on how best to work together to advance common nuclear safety, security and non-proliferation objectives, as well as helping contextualize policy priorities with wider programming considerations. The Groups were able to achieve greater coordination on priorities, notably their joint commitment to safety, security and non-proliferation, and how these three areas underpin the continued access by all States to the peaceful use of nuclear energy and the universal ratification and implementation of international nuclear safety and security legal instruments.

The NSSG will continue to work together with the NPDG and NRWSG in future meetings to identify actions and tailored assistance that can be undertaken to further our joint goals. The NSSG will collaborate with the NRSWG to include offers of G7 support when undertaking targeted demarches where appropriate, and will work with the NPDG to identify practical examples of how safety, security and non-proliferation related activities have enabled access to the peaceful uses of nuclear energy.

Chernobyl Projects

The NSSG continues to follow progress on the ongoing projects at the Chernobyl site to which G7 members have made significant contributions, notably the New Safe Confinement (NSC) which will enclose the original shelter containing the destroyed reactor and its radioactive components, and the Interim Spent Fuel storage facility (ISF-2) which will house more than 20,000 spent fuel assemblies discharged from the Chernobyl nuclear power plant.

The NSSG welcomes the reports from the European Bank for Reconstruction and Development (EBRD) and recognises the complex challenges, notably unexpectedly high levels of radiation, that continue to delay project completion. The G7 continues to rely on the EBRD to provide effective management and engagement with Ukrainian stakeholders to ensure the projects are completed within the agreed timelines and approved cost estimates, with no need for additional contributions.



We look forward to the completion of the NSC and its handover to Ukraine, planned for December 2018, which will mark a major milestone in efforts to convert the Chernobyl area to an environmentally safe and stable zone. In addition, the NSSG request steps be taken to mitigate the risks of further delays in the ISF-2 project and expect retrieval and treatment of spent fuel assemblies to be started before the end of 2018 and final project completion by the end of 2019.

The NSSG stresses the importance of the Ukrainian Government adopting the required institutional and financial measures to ensure the efficient and successful operation of the NSC and ISF-2. It calls upon partners to pay the outstanding pledges.

Independence of the Ukrainian nuclear regulator

We note with concern that, in April 2018, the Ukrainian parliament did not approve the draft legislation aiming to restore the independence of the nuclear regulator, State Nuclear Regulatory Inspectorate of Ukraine, regarding licencing and inspections. The NSSG strongly urges this matter to be addressed at the earliest opportunity.

Enhancing Safety, Security and Safeguards in Embarking Countries

Robust implementation by all States of the highest standards of nuclear safety, security and non-proliferation is vital to ensuring the continued and responsible use of nuclear energy worldwide. It is crucial that countries who are considering nuclear to be part of their energy mix, for example to reduce their greenhouse gas emissions, continuously strengthen nuclear safety, security and safeguards and develop a sound nuclear governance that takes into account their interfaces and specificities. The NSSG will continue to explore means to support these efforts, including through sharing of best practices and experience in embarking countries. The NSSG encourages the International Atomic Energy Agency (IAEA) to continue to consistently integrate safety, security and safeguards considerations into their standards and guidance, capacity-building and peer review activities, where applicable.

The NSSG, while recognizing that it is the responsibility of each country to ensure the safety and security of their nuclear facilities, stresses the role of all stakeholders, including industry, involved in nuclear cooperation and trade in promoting nuclear safety and security. This should include assistance with the development of the infrastructure necessary for recipient states according to the highest standards of safety and security. In this regard, the NSSG calls upon all nuclear supplier states to take appropriate measures prior to agreeing to supply a nuclear power plant to assure themselves that recipient States have in place a robust domestic nuclear safety, security and non-proliferation infrastructure, in line with international best practice as set out in IAEA safety standards and security guidance documents. To benefit from international cooperation and to assure the implementation of the best standards for the development of their national nuclear program, the NSSG also underlines that recipient states should host IAEA peer review



missions at each of the main development steps of their program and implement the corresponding recommendations.

In addition, the NSSG takes note of the importance of the activities of the World Association of Nuclear Operators (WANO) and calls for the application of the Nuclear Power Plant and Reactor Exporters' Principles of Conduct (NuPOC), a voluntary code of conduct developed by the world's leading nuclear power plant vendors.

Legal Frameworks for Nuclear Safety and Security

The universal strengthening of the legal frameworks for nuclear safety and security remains a key focus of the NSSG agenda. The NSSG underlines the continuing need to support the implementation of international legal instruments and Conventions for nuclear safety and security, and commits to continue to play a role in this regard by advocating for their universal ratification and fulfilment of related obligations, in consultation with relevant international organizations and bodies. The NSSG calls upon the IAEA to continue to promote the importance of these instruments and Conventions, through their capacity building activities such as regional workshops, as well as in the development of Integrated Nuclear Security Support Plans and Technical Cooperation projects with IAEA Member States.

The NSSG undertook targeted demarches to encourage States to accede to the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* (Joint Convention) in light of the upcoming 6th Review Meeting of the Joint Convention. We congratulate Mexico and Serbia on their recent accession to the Joint Convention. The NSSG calls upon all States to become Contracting Parties to the Joint Convention, which covers the management of not only spent fuel but also radioactive waste resulting from all civilian applications in industries such as oil and gas, construction, research and medicine.

The 6th Review Meeting of the Joint Convention provides a valuable opportunity for Contracting Parties to undertake peer reviews and exchange good practices to improve nuclear safety both domestically and internationally. The NSSG encourages all Contracting Parties to participate and play an active role in the 6th Review Meeting which will take place on May 21 – June 1, 2018, and assures that G7 members will provide their full support to ensure a successful outcome of the Review Meeting.

The NSSG noted the positive outcomes of the 7th Review Meeting of the Convention on Nuclear Safety and the adoption of measures to improve its effectiveness and efficiency. The NSSG has considered and agreed to support G7 member proposals to the Open-Ended Working Group (OEWG) of the 6th Review Meeting of the Joint Convention as appropriate.

In 2018, the NSSG will conduct outreach to selected States with a view to promote the universalization and implementation of key nuclear security legal instruments, and complement other ongoing efforts to strengthen the global nuclear security architecture and maintain momentum in this regard. These demarches will focus on States that have



yet to join the *Convention on the Physical Protection of Nuclear Material (CPPNM)*, its 2005 Amendment, and the *International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT)*. The demarches will also provide guidance on means of obtaining support for the ratification and implementation of the Conventions.

The NSSG reaffirms the importance of establishing a global nuclear liability regime addressing the concerns of all states that could be affected by a nuclear accident by providing appropriate compensation for nuclear damage. The NSSG encourages all states to join an international nuclear liability instrument as a step toward establishing such a global regime.

Transparency and confidence-building measures

The NSSG found regrettable the lack of conclusion by the International Independent Scientific Commission on the origin of the detectable amounts of Ruthenium-106 over Europe in September and October 2017. However, we welcome the fruitful and transparent technical exchanges between the European organizations in charge of environmental monitoring. The Group agreed that it is essential to learn lessons from the incident, in order to be better prepared should a similar situation occur in the future. We underscore the importance of transparency in maintaining trust between authorities, the public and the international community in the context of nuclear related incidents that may occur on any State's territory. In this regard, we encourage initiatives that can lead to better information sharing practices and confidence-building within the international community. With this objective in mind, a workshop supported by the NSSG will be organized in 2018 to share views on how to improve international cooperation and transparency in the context of future incidents that may occur.

Industry Engagement in Nuclear Safety, Security and Non-Proliferation

As part of this year's presidency, the NSSG considered means of better engagement with industry. The Nuclear Industry Steering Group on Security (NISGS), the World Institute for Nuclear Security (WINS) and the World Association of Nuclear Operators (WANO) contributed to a constructive exchange of views on how governments and regulators can leverage the insight and operating experience of industry to strengthen nuclear safety and security, including through sharing of best practices and supporting safety and security integration into emerging technologies (e.g. small modular reactors).

The NSSG recognizes the important role of the nuclear industry in implementing nuclear safety and security and will continue efforts towards greater collaboration and identifying means of integrating industry perspectives into domestic policy development and international standards and guidance.

Cybersecurity

With the increased use of digital technology in instrumentation and control systems at nuclear facilities, cybersecurity must be addressed to maintain both the safety and security



of facilities and materials contained therein. The NSSG stresses the importance of building on IAEA guidance in the cybersecurity domain in order to ensure that the security practices continue to keep pace with the rapidly evolving technology and associated vulnerabilities, such as those related to the supply chain.

In April 2018, the NSSG held the first ever nuclear cyber security side meeting, where G7 counterparts shared their experiences in establishing national strategies and frameworks for cybersecurity at nuclear facilities, and identified challenges and best practices and means of future engagement on this topic. Based on proposals from this meeting, the NSSG commits to foster more collaboration among the G7 on nuclear-related cybersecurity issues. Side meeting participants noted the value of discussing these matters, and recommended that the NSSG hold future exchanges on cybersecurity matters in support of the NSSG's mandate. This also addresses wider G7 commitments to tackle cybersecurity threats, as identified by the G7 Foreign and Security Ministers in April 2018.

Radioactive Source Management

Radioactive source management is a vivid example of how the implementation of a robust safety and security framework enables access to the peaceful uses of nuclear energy. The NSSG welcomed the approval in September 2017 of the IAEA Guidance on the Management of Disused Radioactive Sources. The NSSG shared information on their legislative frameworks for radioactive source management and the particular challenges related to orphan and disused sources, as well as measures being taken by manufacturers of high-activity radioactive sources to provide support and management options to end-users, including repatriation of sources and recycling options. The NSSG discussed the benefits, opportunities and challenges of alternative non-radioactive technologies in order to provide clear, unbiased guidance to end users considering their application.

The NSSG supports the coordinating role of the IAEA in helping requesting Member States strengthen the physical security of radioactive sources, providing necessary safety and security training, and ensuring that appropriate regulatory frameworks are in place to enable countries to responsibly obtain, manage, transport and dispose of high-activity radioactive sources.

Nuclear Safety and Security Culture

The NSSG underlined the importance of transparency as a practice adopted by both regulators and operators alike in helping foster greater nuclear safety and security culture while recognizing and appreciating nuances in the practice of transparency between both areas, such as the need to protect sensitive information to enhance nuclear security. As such, it was noted that while nuclear safety culture is more developed than nuclear security culture, efforts should continue to foster a stronger nuclear security culture among all stakeholders so that there can indeed be a common framework and culture that encompasses both.



In this regard, the NSSG welcomed the IAEA's completion of the pilot phase of its International School for Nuclear and Radiological Leadership for Safety, and encourages the IAEA to further incorporate a security culture element. Similarly, the NSSG commended the Organization for Economic Cooperation and Development Nuclear Energy Agency (OECD-NEA) for its organization of a first of its kind, country-specific Safety Culture Forum in January 2018, in cooperation with WANO. The NSSG commits to continue coordinated activities to promote a culture of nuclear safety and security worldwide.

Gender Equality and Equity in Nuclear Safety and Security

Under its G7 presidency, Canada has included women's empowerment and gender equality as a key cross-cutting theme to advance domestic and international priorities. The NSSG identified gender equality as a key consideration in strengthening efforts to meet current and future workforce challenges, as well as positively impacting innovation, safety and security culture, and helping ensure higher sustainability of these efforts overall.

In this vein, the NSSG welcomes the OECD-NEA's efforts towards women's empowerment including its organization of the International Mentoring Workshop on Science and Engineering held in Japan in July 2017, and encourages WINS' progress in their efforts to identify barriers to women's increased participation in nuclear security with the aim to helping States better address those barriers and encourage more equality in this sector.

The NSSG commits to improving gender equality in nuclear safety and security, including through ensuring better gender-balanced participation in nuclear-related events, and supporting efforts to identify and address barriers to increased participation by women in the nuclear sector.

Environmental Remediation Account for Central Asia

The NSSG continues to follow progress on the projects for environmental remediation of uranium legacy sites in Central Asia, to be funded through the Environmental Remediation Account for Central Asia established by the EBRD. The Group welcomes the establishment of the Strategic Master Plan under the leadership of the IAEA, as well as the framework agreements between the EBRD and the recipient States (Kyrgyzstan, Tajikistan and Uzbekistan) which include requirements for peer reviews and ratification of the Joint Convention. The NSSG takes note of the expected resolution at the UN General Assembly in 2018, which will be led by Kyrgyzstan and will update UN resolution 68/218 adopted in December 2013, as well as plans to organize a pledging conference in November 2018. This will be a decisive moment for the implementation of the EU led international program covering the remediation of seven priority sites in Central Asia.

Ottawa, May 2018