Legal Affairs
2015

Nuclear Law Bulletin No. 95

Volume 2015/1

OECD
BETTER POLICIES FOR BETTER LIVES

NEA
NUCLEAR ENERGY AGENCY

Legal Affairs

Nuclear Law Bulletin
No. 95

NEA No. 7252

NUCLEAR ENERGY AGENCY
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where the governments of 34 democracies work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Commission takes part in the work of the OECD.

OECD Publishing disseminates widely the results of the Organisation's statistics gathering and research on economic, social and environmental issues, as well as the conventions, guidelines and standards agreed by its members.

NUCLEAR ENERGY AGENCY

The OECD Nuclear Energy Agency (NEA) was established on 1 February 1958. Current NEA membership consists of 31 countries: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Norway, Poland, Portugal, Russia, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Commission also takes part in the work of the Agency.

The mission of the NEA is:

- to assist its member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for a safe, environmentally friendly and economical use of nuclear energy for peaceful purposes;
- to provide authoritative assessments and to forge common understandings on key issues, as input to government decisions on nuclear energy policy and to broader OECD policy analyses in areas such as energy and sustainable development.

Specific areas of competence of the NEA include the safety and regulation of nuclear activities, radioactive waste management, radiological protection, nuclear science, economic and technical analyses of the nuclear fuel cycle, nuclear law and liability, and public information.

The NEA Data Bank provides nuclear data and computer program services for participating countries. In these and related tasks, the NEA works in close collaboration with the International Atomic Energy Agency in Vienna, with which it has a Co-operation Agreement, as well as with other international organisations in the nuclear field.

Also available in French under the title:
Bulletin de droit nucléaire n° 95

Cover photos: Diplomatic Conference to amend the Convention on Nuclear Safety, IAEA Vienna, Austria, 9 February 2015 (Dean Calma/IAEA); View of the Mochovce nuclear power plant, Slovak Republic (Szeder Làszló).

Acknowledgements

In addition to the authors of the articles, the NEA would like to thank the following individuals for their contributions to this edition of the *Nuclear Law Bulletin:* Ms L. Thiele (Canada), Ms F. Touïtou-Durand (France), Mr C. Raetzke (Germany), Ms V. Tafili (Greece), Mr Z. Zombori (Hungary), Mr Y. T. Mannully (India), Prof. K. G. Park (Korea), Ms U. Adomaityté (Lithuania), Mr M. Pospíšil (Slovak Republic), Mr A. Škraban (Slovenia), Mr C. Plaschy (Switzerland), Mr S. Fowler and Mr T. Rothschild (USA), Ms A. Durand (EC), Ms S. Rivera (IAEA) and Ms B. Bonnardel Azzarelli (WNTI).

The information submitted to the NEA by these individuals represents the opinions of the authors alone and does not purport to represent the official views or the policies of their governments or any other entity.

Table of Contents

Entry into force of the Convention on Supplementary Compensation for Nuclear Damage: Opening the umbrella

*By Ben McRae**

Introduction

There are 431 commercial nuclear power plants around the world.[1] On 14 April 2015, 193 of these power plants were covered by a nuclear liability instrument (118 power plants by the Paris Convention[2] and 75 by the Vienna Convention[3]). With the entry into force of the Convention on Supplementary Compensation for Nuclear Damage (CSC)[4] on 15 April 2015, the number of power plants covered by a nuclear liability

* Mr McRae is the Assistant General Counsel for Civilian Nuclear Programs at the United States Department of Energy (DOE). The views expressed in this article are those of the author and do not necessarily represent those of the DOE.

1. For information concerning the adherence status to nuclear liability conventions for those countries that currently have operating nuclear power plants, please see Table 1, *infra* p. 23.
2. Paris Convention on Third Party Liability in the Field of Nuclear Energy of 29 July 1960, as amended by the Additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982, including the amended version that will be established when the 2004 Protocol to Amend the Paris Convention comes into effect. Where a reference only refers to the original version or the amended version, the terms "1960 Paris Convention" and "2004 Paris Convention" are used, respectively. The current status of the Paris Convention is available at: www.oecd-nea.org/law/paris-convention-ratification.html.
3. This number refers to both the Vienna Convention on Civil Liability for Nuclear Damage (1963) IAEA Doc. INFCIRC/500, 1063 UNTS 266, and the Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage (1997), IAEA Doc. INFCIRC/566, 2241 UNTS 302. Where a reference only refers to the original version or the amended version, the terms "1963 Vienna Convention" and "1997 Vienna Convention" are used, respectively. The current status of the 1963 Vienna Convention and the 1997 Vienna Convention is available at: www.iaea.org/Publications/Documents/Conventions/liability_status.pdf and www.iaea.org/Publications/Documents/Conventions/protamend_status.pdf, respectively.
4. Convention on Supplementary Compensation for Nuclear Damage (1997), IAEA Doc. INFCIRC/567, 36 ILM 1473. For an overview of the CSC, see McRae, B. (1998), "The Compensation Convention: Path to a Global Regime for Dealing with Legal Liability and Compensation for Nuclear Damage", *Nuclear Law Bulletin*, No. 61, NEA, Paris, pp. 25-38 ("CSC I"); McRae, B. (2007), "The Convention on Supplementary Compensation for Nuclear Damage: Catalyst for a Global Nuclear Liability Regime", *Nuclear Law Bulletin*, No. 79, NEA, Paris, pp. 17-35 ("CSC II"); McRae, B. (2011), "The Convention on Supplementary Compensation for Nuclear Damage (CSC) and harmonisation of nuclear liability law within the European Union", *Nuclear Law Bulletin*, No. 87, NEA, Paris, pp. 73-86 ("CSC III"). For a detailed discussion and authoritative interpretation of the CSC and its provisions, see IAEA (1997), "The 1997 Vienna Convention on Civil Liability for Nuclear Damage and the 1997 Convention on Supplementary Compensation for Nuclear Damage – Explanatory Texts", IAEA International Law Series No. 3 STI/PUB/1279 ("Explanatory Texts"). The current status of the CSC is available at: www.iaea.org/Publications/Documents/Conventions/supcomp_status.pdf.

instrument increased to 340. Thus, the entry into force of the CSC marked a major milestone towards the establishment of a global nuclear liability regime.

This article discusses several events that have promoted progress towards a global nuclear liability regime and then addresses several questions that may arise as countries consider actions necessary to achieve such a regime.

Progress towards a global nuclear liability regime

Adoption of the enhanced conventions

Following Chernobyl, the international community engaged in a comprehensive review of nuclear liability law, including the then existing nuclear liability instruments and possible improvements thereto.[5] This review examined the nuclear liability principles[6] that had been developed in the 1960's and confirmed their continuing value as providing a much more effective means of assuring prompt and equitable compensation for nuclear damage than normal tort law. In addition, these discussions resulted in the development of several enhancements to the principles, including (1) measures to increase the amount of assured compensation,[7] (2) an expanded definition of nuclear damage to cover damage categories such as environmental damage and economic loss[8] and (3) an expanded jurisdictional provision to grant a country exclusive jurisdiction over claims arising from an incident in its exclusive economic zone (EEZ), as well as its territory and territorial sea.[9] These enhancements were incorporated into the CSC, the 1997 Vienna Convention and the 2004 Paris Convention (the enhanced conventions). Specifically, the International Atomic Energy Agency (IAEA) member states participated in a Diplomatic Conference in 1997 under the auspices of the IAEA and adopted both the CSC and the 1997 Vienna Convention. Thereafter, under the auspices of the Nuclear Energy Agency (NEA), the members of the Paris Convention and the Brussels Supplementary Convention[10] discussed the enhancements in the context of those two conventions and, in 2004, adopted the 2004 Paris Convention that incorporated the enhancements and the 2004 Brussels Supplementary Convention that reflected

5. See Explanatory Texts, supra note 4, sections 1.6, 3.1 and 3.2.
6. The nuclear liability principles include: (1) channelling all legal liability for nuclear damage exclusively to the operator; (2) imposing liability on the operator without the need to demonstrate fault, negligence or intent; (3) granting exclusive jurisdiction to the courts of the country where a nuclear incident occurs; (4) permitting liability to be limited in amount and in time; and (5) compensating damage without any discrimination based upon nationality, domicile or residence. For a more detailed discussion of the nuclear liability principles, see, Explanatory Texts, supra note 4, at sections 1.3 and 1.4. See also NEA, Revised text of the *Exposé des Motifs* of the Paris Convention, approved by the OECD Council on 16 November 1982, paras. 14-37, 43-47 and 54-59; CSC I, supra note 4, p. 28; CSC II, supra note 4, pp. 18-19; and CSC III, supra note 4, p. 77.
7. See Explanatory Texts, supra note 4, sections 2.4 and 3.6.
8. Ibid., sections. 2.3 and 3.5.4.
9. Ibid., sections 2.9 and 3.9.1.
10. Convention Supplementary to the [Paris Convention], concluded in Brussels, 31 January 1963, as amended by the Additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982, 1041 UNTS 358, including the amended version that will be established when the 2004 Protocol to Amend the Brussels Convention comes into effect. Where a reference only refers to the original version or the amended version, the terms "1963 Brussels Supplementary Convention" and "2004 Brussels Supplementary Convention" are used, respectively. The current status of the Brussels Supplementary Convention is available at www.oecd-nea.org/law/brussels-convention-ratification.html.

the increased amount of compensation required by the 2004 Paris Convention and the establishment of an international fund under the CSC.

IAEA Action Plan on Nuclear Safety

Following the accident at the Fukushima Daiichi Nuclear Power Station ("Fukushima accident"), the IAEA member states identified a number of actions that would promote the safe and secure use of nuclear energy. Specifically, the IAEA Action Plan on Nuclear Safety[11] includes establishment of a global nuclear liability regime as an action to improve the effectiveness of the international legal framework. The Plan recommends that IAEA member states work towards establishing a global nuclear liability regime that addresses the concerns of all countries that might be affected by a nuclear accident with a view to providing appropriate compensation for nuclear damage. The plan also requests the IAEA International Nuclear Liability Experts Group (INLEX)[12] to recommend actions to facilitate establishment of a global nuclear liability regime.

The commitment of the IAEA member states to establishing a global nuclear liability regime has continued. During the 59th IAEA General Conference in September 2015, the IAEA member states adopted a resolution[13] that, among other things: encourages member states to work towards establishment of a global nuclear liability regime; notes that the Paris Convention, the Vienna Convention, the Brussels Supplementary Convention, the Joint Protocol[14] and the CSC can provide the basis for establishing a global regime based on the nuclear liability principles; stresses the importance of having effective and coherent nuclear liability mechanisms in place at the national and global levels; recognises that the nuclear liability principles, including strict liability, should apply to nuclear incidents; and notes that the nuclear liability principles can benefit from the enhancements relating to a broader definition of nuclear damage, expanded jurisdiction and increased compensation, and from the best practices recommended by INLEX.[15]

INLEX recommendations

In response to the IAEA Action Plan, INLEX held a special session in December 2011, at which the INLEX members discussed a number of recommendations to facilitate achievement of a global nuclear liability regime. These discussions continued at the 12th regular meeting in May 2012 and resulted in the adoption of several

11. The Action Plan was approved by the IAEA Board of Governors on 13 September 2011, and endorsed by the IAEA General Conference during its 55th regular session on 22 September 2011, and is available at: www.iaea.org/sites/default/files/actionplanns.pdf.
12. INLEX was established by the IAEA Director-General in September 2003 to: (a) explore and advise on nuclear liability issues; (b) enhance global adherence by nuclear and non-nuclear states to an effective nuclear liability regime; and (c) assist in the development and strengthening of the national nuclear liability legal frameworks in IAEA member states. For more detail on INLEX, see IAEA (2013), "International Expert Group on Nuclear Liability (INLEX)", http://ola.iaea.org/ola/inlex-group.html (accessed 22 May 2015).
13. IAEA (2015), "Measures to strengthen international cooperation in nuclear, radiation, transport and waste safety", IAEA Doc. GC(59)/RES/9 ("Safety Resolution"), available at: www.iaea.org/About/Policy/GC/GC59/GC59Resolutions/English/gc59res-9_en.pdf..
14. Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention (1988) ("Joint Protocol"), IAEA Doc. INFCIRC/402, 1672 UNTS 293. The current status of the Joint Protocol is available at: www.iaea.org/Publications/Documents/Conventions/jointprot_status.pdf.
15. See Safety Resolution, supra note 13, paragraphs (ee), (ff), (gg), (23), (24) and (25).

recommendations.[16] These INLEX Recommendations encourage countries with nuclear installations to adhere to one or more of the enhanced liability instruments and adopt national laws that are consistent with the enhanced nuclear liability principles[17] and that incorporate the best practices identified by INLEX. The INLEX Recommendations also encourage countries with nuclear installations to establish treaty relations with as many other countries as practical with a view to ultimately achieving universal participation in a global nuclear liability regime that establishes treaty relations among all countries. The INLEX Recommendations note that the CSC establishes treaty relations among countries that belong to the Paris Convention or the Vienna Convention as well as countries that belong to neither convention and that the CSC is compatible with the Joint Protocol. The INLEX Recommendations further note that the CSC requires national law to be consistent with the enhanced nuclear liability principles and contains features to promote appropriate compensation, including an international fund to supplement the amount of compensation available for nuclear damage.

The INLEX Recommendations also encourage countries with no nuclear installations to give serious consideration to adhering to a global nuclear liability regime. This recommendation recognises that a primary factor for a country in deciding whether to join a global regime is the extent to which such a regime affords benefits to victims of nuclear damage in that country, especially if the country has no nuclear installations.

To make a global nuclear liability regime more attractive to all countries, the INLEX recommendations contain several best practices to ensure adequate funds are available to compensate all victims of a nuclear incident, without discrimination. In general, these best practices encourage countries with nuclear installations to: (1) establish compensation and financial security amounts significantly higher than the minimum amounts required under the existing nuclear liability instruments; (2) undertake regular reviews of the adequacy of compensation and financial security amounts to ensure they reflect current conditions; (3) be prepared to set up appropriate funding mechanisms in cases where the amount of damage exceeds the available compensation and financial security amounts; (4) provide compensation for latent injuries; and (5) ensure that compensation is available in the case of an incident directly due to a grave natural disaster of an exceptional character. In addition, the INLEX Recommendations encourage countries to ensure that all claims for nuclear damage are dealt with in a single forum in a prompt, equitable and non-discriminatory manner with minimal litigation.

Joint statement

The United States and France have the two largest nuclear power programmes in the world. Both countries share the IAEA Action Plan's objective of establishing a global nuclear liability regime but they have focused on different approaches to achieve this objective. France has focused on an approach based on the 2004 Paris Convention together with the 2004 Brussels Supplementary Convention, the 1997 Vienna Convention and the Joint Protocol. The United States has focused on an approach

16. INLEX (2012), "Recommendations on how to facilitate achievement of a global nuclear liability regime, as requested by the IAEA Action Plan on Nuclear Safety" (INLEX Recommendations), available at: http://ola.iaea.org/ola/documents/ActionPlan.pdf, pp. 3-4.
17. The enhanced nuclear liability principles are the nuclear liability principles plus the enhancements incorporated into the CSC, the 1997 Vienna Convention and the 2004 Paris Convention that increase the amount of compensation available, expand the definition of nuclear damage and grant a country exclusive jurisdiction over an accident that occurs in its EEZ, as well as its territory and territorial sea.

based on the CSC. In order to find common ground, France and the United States set up a working group to identify a joint path towards a global nuclear liability regime. The working group had a mandate to review and identify the similarities, the differences and any potential conflicts among the key existing nuclear liability instruments and to examine the conditions allowing these instruments to form the basis for a global nuclear liability regime. After over a year of direct and in-depth discussions, the working group found great overall similarity among the existing nuclear liability instruments and national laws in countries with nuclear power plants, with a few nonessential differences in implementing details. The working group found that the CSC, the 2004 Paris Convention and the 1997 Vienna Convention incorporated the enhanced nuclear liability principles and contained sufficient flexibility to permit a country to implement these instruments in a manner consistent with the best practices identified by INLEX. The working group further found that membership in the Joint Protocol and the Paris Convention or the Vienna Convention is consistent with membership in the CSC and that there should be no obstacle in principle for a country to belong to the CSC and to the Paris Convention or the Vienna Convention, as well as the Joint Protocol.[18]

The discussions within the working group culminated in the development of the Joint Statement on Civil Liability for Nuclear Damage (Joint Statement)[19] that was signed on 28 August 2013 by United States Secretary of Energy Ernest Moniz and French Minister of Ecology, Sustainable Development, and Energy Philip Martin. The Joint Statement reflects the views of the United States and France that their approaches to achieving a global nuclear liability regime are complementary and that a global nuclear liability regime that does not include the United States, France and other countries with significant nuclear power programmes would not make sense.

The Joint Statement recognises the importance of the enhanced nuclear liability principles including channelling all liability for nuclear damage to the operator on the basis of strict liability. The Joint Statement acknowledges that the Joint Protocol was developed to link the Paris Convention and the Vienna Convention and has resulted in treaty relations among a number of countries, which provide a contribution to the development of a global nuclear liability regime, and that France views a system based on the 2004 Paris Convention together with the 2004 Brussels Supplementary Convention, the 1997 Vienna Convention and the Joint Protocol as providing an appropriate basis for the compensation of nuclear damage. The Joint Statement also acknowledges that the CSC was designed to provide a basis for establishing a global nuclear liability regime by allowing adherence by countries that adhere to the Paris Convention or the Vienna Convention, including those countries that are linked by the Joint Protocol, and by countries with national laws that fully comply with the nuclear liability principles embodied in the Annex to the CSC and that the United States views the CSC as the only existing international nuclear liability instrument to which the United States can adhere.

The Joint Statement commits France and the United States to: (1) promote efforts to achieve a global nuclear liability regime based on treaty relations among France, the United States and other countries that might be affected by a nuclear accident; (2) co-ordinate their actions to encourage adherence to the enhanced international

18. McRae, B. and Florence Touïtou-Durand (2013), "France-US Joint Statement on Liability for Nuclear Damage", presentation, Workshop on Nuclear Damages, Liability Issues and Compensation Schemes, NEA, Paris, 10-11 December.
19. United States and France (2013), "Joint Statement on Liability for Nuclear Damage", available at: http://energy.gov/sites/prod/files/2013/08/f2/Joint%20Statement%20Signed_0.pdf.

nuclear liability instruments, with an initial step being the entry into force of the CSC; and (3) urge countries to adopt national laws that incorporate the enhanced nuclear liability principles and certain best practices. The best practices include: (1) establishing liability limits and financial security requirements sufficiently high to make adequate funds available to compensate all victims of a nuclear accident, without discrimination; (2) making compensation available for nuclear damage wherever suffered; (3) covering an accident directly due to a grave natural disaster; (4) making compensation for latent injuries available for a period of at least 30 years; and (5) providing for all claims for nuclear damage to be dealt with in a single forum by one court, in a prompt, equitable and non-discriminatory manner, with a minimum of litigation.

United Arab Emirates (UAE)

The UAE joined the CSC on 7 July 2014.[20] The UAE, which already was a member of the 1997 Vienna Convention and the Joint Protocol, was able to join the CSC with minimal effort and no changes to its national law. The ratification of the CSC by the UAE highlights how the CSC can serve as an umbrella instrument that accommodates countries that belong to the Vienna Convention or the Paris Convention, as well as countries that belong to neither convention. In addition, the UAE has set an example for other countries that are developing nuclear power programmes. By joining the CSC, the UAE has shown that membership in a global nuclear liability regime is an important element of a responsible approach for developing a safe and secure nuclear power programme.[21]

Canada

Canada signed the CSC in 2013 and enacted a new nuclear liability law[22] in February 2015 that will permit Canada to join the CSC once implanting regulations are in place.[23] When Canada joins the CSC, all 125 nuclear power plants in North and South America will be covered by a nuclear liability instrument, of which the CSC will cover 121 plants.[24]

In enacting its new nuclear liability law, Canada achieved consistency with the CSC and also implemented several best practices identified by the INLEX Recommendations. Specifically, the new law increases the liability of the operator to USD 1 billion, requires operators to maintain insurance or alternative financial security for the full amount, establishes an alternative financial security mechanism for situations where insurance is not available, provides for a review of the adequacy of the amounts at least once every five years, covers damage resulting from a grave natural disaster of an exceptional character and from terrorist activities and permits claims for latent injuries up to thirty years after an accident.[25]

20. See UAE Permanent Mission to IAEA (2014), "UAE Joins International Convention on Nuclear Liability", available at: www.uae-mission.ae/mission/iaea/news/2014/07/07/422.
21. While the UAE currently has no operating nuclear power plants, it has four plants under construction and plans for more than a dozen additional plants in the future.
22. Nuclear Liability and Compensation Act (NLCA) (2015), Bill C-22, Part 2, available at: www.parl.gc.ca/content/hoc/Bills/412/Government/C-22/C-22_4/C-22_4.PDF.
23. Regulations must be adopted that will identify the nuclear installations to be covered and establish the liability amounts for low risk installations. In addition, the Canadian government must approve the insurance policy, the indemnity agreement and the insurers. These actions are expected to be completed by spring of 2016, at which point Canada will join the CSC.
24. See Table 1.
25. NLCA, supra note 22, sections 5(1), 24(1), 26, 27(1), 28, 29, 30, 31 and 35(2).

India

India adopted the Civil Liability for Nuclear Damage (CLND) Act[26] in 2010. India signed the CSC on 29 October 2010 but has not yet ratified the CSC, in part, because of concerns about compatibility of the CLND Act with the CSC. In conjunction with Prime Minister Modi's visit to the United States in September 2014, the United States and India set up a contact group to advance bilateral civil nuclear co-operation between the two countries. The contact group met in New Delhi (16-17 December 2014), Vienna (6-7 January 2015) and London (21-22 January 2015) and discussed the compatibility of the CLND Act with the CSC. During these discussions, India presented its views on the compatibility of the CLND Act with the CSC, focusing on Sections 17 and 46 of the CLND Act. On the basis of this presentation and the discussions thereon, the contact group reached a general understanding that the CLND Act is compatible with the CSC. Prime Minister Modi and President Obama welcomed this understanding in the "US – India Joint Statement – Shared Effort: Progress for All"[27] issued on 25 January 2015. On 8 February 2015, the Indian Ministry of External Affairs (MEA) issued "Frequently Asked Questions and Answers on Civil Liability for Nuclear Damage Act 2010 and Related Issues"[28] that provides a detailed discussion of the understanding.

The understanding can be summarised as follows. As a general matter, the CLND Act is compliant with the CSC. The CLND Act ensures that liability for nuclear damage is strict and channelled exclusively to the operator through a no-fault liability regime.[29] Section 46 applies only to the operator and does not extend to suppliers. Section 46 of the Act does not provide a basis for bringing claims for compensation for nuclear damage under any other act. The language in Section 46 is similar to language in other acts and is intended to underline that other relevant laws continue to be operable in their respective domains. In other words, the operator continues to be subject to other laws with respect to matters other than civil liability for nuclear damage.[30] While Section 17 provides a substantive right of recourse to the operator, it is an enabling provision rather than a mandatory provision. In other words, it permits but does not require an operator to include a right of recourse in a contract or to exercise any such right of recourse. The right of recourse against a supplier in Section 17b relates to matters that are ordinarily part of a contract between the operator and the supplier and can be operationalised only through contract conditions agreed to by the operator and a supplier. Thus, the extent to which there is a right of recourse and the terms and conditions under which any such right of recourse can be exercised are dependent on the provisions that the operator and supplier agree to include in their contract. Accordingly the right of recourse in Section 17b is in conformity with, and not in contradiction of, Article 10(a) of the Annex to the CSC that permits national law to provide for a right

26. The Civil Liability for Nuclear Damage Act, 2010, No. 38 of 2010, available in *The Gazette of India*, at: http://lawmin.nic.in/ld/regionallanguages/THE%20CIVIL%20LIABILITY%20OF%20NUCLEAR%20DAMAGE%20ACT,2010.%20%2838%20OF2010%29.pdf.
27. United States White House (2015), US-India Joint Statement साँझा प्रयास - सबका विकास" – "Shared Effort; Progress for All", available at: www.whitehouse.gov/the-press-office/2015/01/25/us-india-joint-statement-shared-effort-progress-all.
28. Ministry of External Affairs (2015), "Frequently Asked Questions and Answers on Civil Liability for Nuclear Damage Act 2010 and Related Issues" (FAQ), available at: www.mea.gov.in/press-releases.htm?dtl/24766/Frequently_Asked_Questions_and_Answers_on_Civil_Liability_for_Nuclear_Damage_Act_2010_and_related_issues.
29. Ibid., questions 6 and 7.
30. Ibid., questions 7, 11, 12 and 13.

of recourse if based on provisions in a contract.[31] As a matter of policy, the operator can insist during negotiations that a contract contain a right of recourse, just as a supplier can insist that a contract not contain a right of recourse. Whether and to what extent there is a right of recourse under the contract resulting from such negotiations will depend on what provisions the operator and supplier agree to include in the contract.[32]

India has indicated that it plans to proceed with ratification of the CSC. India's joining the CSC will send a strong message concerning the importance of becoming part of the global nuclear liability to other countries that are initiating or expanding their commercial nuclear power programmes. This is especially important since, as IAEA Director-General Yukiya Amano stated during a visit to India in March 2015, the growth centre for nuclear power is shifting to Asia.[33]

Japan

Japan deposited its instrument of acceptance for the CSC with the IAEA on 15 January 2015. This action satisfied the entry into force conditions for the CSC and resulted in the CSC's entry into force on 15 April 2015.[34] By bringing the CSC into effect, Japan has sent a strong message to all countries, including its neighbouring countries in Asia, on the importance of joining the CSC and establishing a global nuclear liability regime. This message is especially compelling given Japan's experience with compensating damage resulting from the Fukushima accident in 2011. In addition, Japan's joining the CSC confirms that the CSC is compatible with a national law that imposes unlimited liability on the operator, provides a mechanism to assure that the operator has sufficient funds to compensate damage adequately and covers a broad range of damage.

CSC entry into force

With the entry into force of the CSC on 15 April 2015, the number of commercial nuclear power plants covered by an international nuclear liability instrument increased from 193 to 340. This number will increase to 380 when Canada and India join the CSC. Thus, 88% (380 out of 431) of the current nuclear power plants are located in a country that is or has announced its intention to become a member of a nuclear liability instrument.[35] This represents substantial progress towards a global nuclear liability regime.

Much work, however, remains to be done in order to achieve universal participation in a global nuclear liability regime that establishes treaty relations among all countries that might be affected by a nuclear accident. Currently, 5 countries with 51 operating reactors do not belong and have not announced an intention to belong to a nuclear liability instrument, including two countries that have nuclear power programmes that rank among the ten largest existing nuclear

31. Ibid., questions 8 and 9.
32. Ibid., question 9; see also, Venkatesan, J. (2013), "Opinion on liability waiver based on legality, says AG", *The Hindu*, available at: www.thehindu.com/news/national/opinion-on-liability-waiver-based-on-legality-says-ag/article5154648.ece.
33. Bagchi, I. (2015), "India's N-insurance a positive step, says IAEA", *The Times of India*, available at: http://timesofindia.indiatimes.com/india/Indias-N-insurance-a-positive-step-says-IAEA/articleshow/46721678.cms.
34. Article XX of the CSC provides that the CSC comes into force ninety days after five or more countries presents instruments pursuant to Article XVIII and their installed nuclear capacity exceeds 400 000 MWt.
35. See Table 1.

power programmes.[36] Looking forward, 7 of the 17 countries that have plans to initiate nuclear power programmes do not belong and have not announced an intention to belong to a nuclear liability instrument.[37] In addition, almost half of the future reactors are expected to be located in countries that do not belong and have not announced an intention to belong to a nuclear liability instrument.

While 25 countries with nuclear power plants belong or have announced an intention to belong to a nuclear liability instrument, there are not treaty relations among all these countries. Six of these countries with 187 nuclear power plants belong to the CSC. Ten of these countries with 118 nuclear power plants belong to the Paris Convention. Eleven of these countries with 75 nuclear power plants belong to the Vienna Convention. Six Paris countries with 83 nuclear power plants and 6 Vienna countries with 33 nuclear power plants are linked by the Joint Protocol.[38]

Moreover, most of the countries that do not have a nuclear power programme do not belong to a nuclear liability instrument. Many of the countries have expressed the view that they will not consider participation in a global nuclear liability regime unless such a regime has participation from most of the countries with nuclear power programmes and assures not only prompt but also adequate compensation for nuclear damage.

The CSC provides an excellent vehicle for achieving universal participation in a global nuclear liability regime that establishes treaty relations among all countries that might be affected by a nuclear incident. Specifically, the CSC is an umbrella instrument that facilitates treaty relations among countries with national laws consistent with the nuclear liability principles. In addition, the CSC was developed with a view of attracting membership from all countries by incorporating the enhancements relating to the expanded definition of nuclear damage,[39] expanded jurisdiction[40] and increased compensation,[41] including establishment of an international fund to increase the amount of assured funds available to compensate nuclear damage. Furthermore, the CSC is compatible with fully implementing the INLEX Recommendations.

Questions concerning global nuclear liability regime

Why is a global nuclear liability regime needed?

A global nuclear liability regime is the best way to: (1) protect the public by ensuring the availability of substantial amounts of funds to compensate nuclear damage promptly with a minimum of litigation; (2) provide the nuclear industry with legal certainty through clear allocation of liability; (3) permit international insurance markets to marshal their resources; and (4) address the international nature of the nuclear industry, including transboundary damage and transportation accidents.

36. Ibid.
37. See Table 2.
38. See Table 1.
39. CSC, supra note 4, Article I(f). See also CSC I, supra note 4, pp. 27, 31-32; CSC II, supra note 4, pp. 20, 24-27.
40. CSC, supra note 4, Article XIII. See also CSC I, supra note 4, pp. 27-28, 32-33; CSC II, supra, p. 19; CSC III, supra note 4, p. 76.
41. CSC, supra note 4, Articles III, IV, XI.2 and XII.2. See also CSC I, supra note 4, pp. 26-27, 29-31; CSC II, supra note 4, pp. 19-20, 28-30; and CSC III, supra note 4, pp. 77-78.

What must countries do to establish a global nuclear liability regime?

In order to establish a global nuclear liability regime, countries that might be affected by a nuclear accident need to: (1) adopt national laws based on the enhanced nuclear liability principles and (2) be linked to one another by treaty relations.

Why should a country, and especially a country with no nuclear installations, adopt a national law based on the enhanced nuclear liability principles rather than normal tort law?

Normal tort law focuses on determining fault and often results in protracted and costly litigation that can take years to achieve a final decision. As a result, compensation can be delayed for many years without any certainty that the entity found at fault will have the resources to fully compensate the damage. On the other hand, the enhanced nuclear liability principles were developed to compensate nuclear damage promptly with little or no litigation. National law based on these principles represents good public policy. Of course, an important corollary is action by countries with nuclear installations to ensure the availability of sufficient compensation.

How does the CSC provide the basis for a global nuclear liability regime?

By linking countries together through treaty relations, the CSC provides the basis for a global nuclear liability regime. Specifically, the CSC was adopted with the intent to establish a global nuclear liability regime based on the enhanced nuclear liability principles with a view to increasing the amount of compensation available for nuclear damage.[42] The CSC achieves this objective by being a free standing instrument that fits like an umbrella over countries that belong to the Paris Convention or the Vienna Convention (including Paris and Vienna countries that also belong to the Joint Protocol) or that have national law consistent with the nuclear liability principles as set forth in the CSC Annex.[43] In addition, the CSC is attractive to many countries because it requires national law to be consistent with the enhanced nuclear liability principles and contains features to promote appropriate compensation, including an international fund to supplement the amount of compensation available for nuclear damage.

What role can the Joint Protocol play in establishing a global nuclear liability regime?

The Joint Protocol was adopted with the intent to establish a link between the Paris Convention and the Vienna Convention by mutually extending the benefits under each Convention and to eliminate conflicts arising from their simultaneous application.[44] The Joint Protocol has resulted in treaty relations among a number of Paris and Vienna countries and thus has contributed to the development of a global nuclear liability regime. The Joint Protocol, however, does not provide the basis for a global regime because only Paris and Vienna countries can join it. In addition to not being free standing, the Joint Protocol is not attractive to many countries because it does not require national law to contain the enhancements relating to compensation, definition of nuclear damage and jurisdiction.[45]

42. CSC, supra note 4, Preamble.
43. See CSC I, supra note 4, pp. 34-38. The footnotes to the text on the Annex provisions provide a crosswalk to the corresponding provisions of the 1963 Vienna Convention, 1997 Vienna Convention and the 1960 Paris Convention on which the Annex provisions were based. See also Explanatory Texts, supra note 4, Section 3.3.2.
44. Joint Protocol, supra note 14, Preamble.
45. See CSC II, supra note 4, p. 23; CSC III, supra note 4, pp. 82-84.

Is there a need for a new international nuclear liability instrument to provide the basis for a global nuclear liability regime?

No. The existing nuclear liability instruments (the CSC, the Paris Convention as supplemented by the Brussels Supplementary Convention, the Vienna Convention and the Joint Protocol) are compatible and can be used to establish a global nuclear liability regime under the CSC umbrella.

What must a country that belongs to the 1960 Paris Convention or the 1963 Vienna Convention do to join the CSC?

The 1960 Paris Convention and the 1963 Vienna Convention require member countries to have national law based on the nuclear liability principles. Thus, in order to join the CSC, a country that belongs to the 1960 Paris Convention or the 1963 Vienna Convention need only change its national law to the extent necessary to reflect the enhancements required by the CSC. These enhancements include: (1) ensuring the availability of at least SDR[46] 300 million to compensate nuclear damage; (2) agreeing to contribute to an international fund established by the CSC; (3) implementing the enhanced definition of nuclear damage in the CSC; (4) implementing the enhanced jurisdictional provisions in the CSC; and (5) extending coverage to include all CSC members. None of these actions are inconsistent with the Paris Convention or the Vienna Convention and, in fact, many Paris and Vienna countries already have revised their national laws to increase compensation amounts, include an expanded definition of nuclear damage and provide for jurisdiction over nuclear incidents in their EEZs.

What must a country that belongs to the 2004 Paris Convention or the 1997 Vienna Convention do to join the CSC?

The 2004 Paris Convention[47] and the 1997 Vienna Convention require the same enhancements as the CSC except for the requirement to contribute to the international fund established by the CSC. Thus, as demonstrated by the UAE, a country that belongs to the 2004 Paris Convention or the 1997 Vienna Convention should be able to join the CSC with minimal effort and no change to its national law.

Do the differences between the definition of nuclear damage in the 2004 Paris Convention and the CSC pose a problem to membership in the CSC by Paris countries?

No. The CSC is clear that application of the definition of nuclear damage with respect to the additional categories of damage is based on the law of the competent

46. SDRs (Special Drawing Rights) are reserve assets defined and maintained by the International Monetary Fund. The value of the SDR is defined by a weighted currency basket of four major currencies: the Euro, the US dollar, the British pound and the Japanese yen. For more detailed discussion of SDRs, see International Monetary Fund (2015), "Special Drawing Rights (SDRs)", www.imf.org/external/np/exr/facts/sdr.HTM. As of 22 May 2015, SDR 1 equals USD 1.4. (For current value of SDR, see IMF, "SDR Valuation", www.imf.org/external/np/fin/data/rms_sdrv.aspx.)
47. The 2004 Paris Convention is expected to enter into force in the near future. Its entry into force has been delayed, in large part, by an EU decision that Paris countries that are also members of the EU must "take the necessary steps to deposit simultaneously their instruments of ratification of the Protocol, or accession to it". European Council Decision of 8 March 2004 authorising the member states which are Contracting Parties to the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy to ratify, in the interest of the European Community, the Protocol amending that Convention, or to accede to it (2004/294/EC), *Official Journal of the European Union* (OJ) L 97-53 (1 April 2014). The status of the 2004 Paris Convention is available at: www.oecd-nea.org/law/paris-convention-ratification.html.

court (that is, the law applied by the court in the country where the nuclear incident occurs) and thus will reflect the normal practice in the country where most of the damage is likely to occur. In other words, there is a recognition that what is covered under each category of damage will vary from country to country and that the competent court will make the determination of what is covered. The differences between the definition of nuclear damage in the 2004 Paris Convention and the CSC are relatively minor and do not appear to be inconsistent with the approach of letting the competent court determine what is covered.[48] If a Paris country believes the treatment of nuclear damage in its national law raises concerns about consistency with the CSC, it can take what action, if any, it considers appropriate when it joins the CSC.[49]

What must a country that does not belong to either the Paris Convention or the Vienna Convention do to join the CSC?

A country that does not belong to either the Paris Convention or the Vienna Convention will need to review its national law and make those changes, if any, necessary to ensure consistency with the enhanced nuclear liability principles set forth in the CSC. The drafters of the CSC recognised that the need to adopt or revise national law might be a disincentive to some countries, especially a country that has no nuclear installations and thus has no need for a nuclear liability regime, except as a contingency in the event of a transportation accident in its territory, territorial sea or EEZ. Accordingly, the CSC is clear that a member country need not enact implementing legislation to the extent its national legal framework makes treaty provisions directly applicable without the need for legislation.[50] In addition, the CSC is clear that a member country with no nuclear installations on its territory only needs to implement those provisions of the CSC necessary to give effect to its obligations under the CSC.[51]

What provisions must a country with no nuclear installations include in its national law?

As a general matter, a country with no nuclear installation needs to focus on implementation of those provisions of the CSC relating to channelling liability to the operator, strict liability, definition of nuclear damage, court jurisdiction, statute of limitations, and non-discriminatory treatment. A country with no nuclear installation would not address those provisions of the CSC that are the responsibility of an installation state.[52]

48. The first difference is that the 2004 Paris Convention includes the word "direct" in the category of damage relating to the economic interest that may be adversely affected by impairment of the environment. Inclusion of "direct" is not a substantive issue since "proximate cause" is an issue that a court normally addresses in the context of a particular case. The second difference is that the definition does not contain the category of damage in the CSC relating to "any other economic loss, other than caused by impairment of the environment, if permitted by the general law on civil liability of the competent court". This residual category of damage is expected to be a null set in many countries. In any case, the decision whether the general law of a country would result in the coverage of any additional economic loss is a decision for that country to make.
49. See Explanatory Texts, supra note 4, section 3.5.4.
50. CSC, supra note 4, Preamble of the Annex. See also Explanatory Texts, supra note 4, section 1.2 and 3.4; CSC I, supra note 4, p. 34; CSC II, supra note 4, pp. 31-32; CSC III, supra note 4, p. 79.
51. CSC, supra note 4, Preamble of the Annex. See also Explanatory Texts, supra note 4, section 3.4; CSC I, supra note 4, p. 34; CSC II, supra note 4, pp. 31-32; CSC III, supra note 4, p. 79.
52. The CSC, the Paris Convention and the Vienna Convention assign certain functions to the installation state or its national law regardless of where a nuclear incident occurs or whether

How does the CSC increase the amount of compensation available?

The CSC recognises that widespread participation in a global nuclear liability regime, especially by countries without nuclear power programmes, is dependent on the availability of a meaningful amount of compensation.[53] The CSC assures the availability of a meaningful amount of compensation for nuclear damage in member countries by requiring two tiers of compensation.[54] Specifically, the CSC requires a member country with a nuclear installation to establish a first tier amount of at least SDR 300 million. If compensation claims exceed the first tier amount, the CSC requires all member countries to contribute to an international fund that will provide the second tier of compensation. The amount of the second tier compensation is dependent on the installed capacity of nuclear reactors in member countries and will increase as the aggregate capacity increases. If all IAEA member states adhered to the CSC today, the amount of the second tier would be approximately SDR 382 million. In addition, the CSC permits a CSC country to establish a third tier of compensation in excess of the first two tiers.[55] Thus, a CSC country can provide for compensation significantly greater than the amount required by the CSC with a view to assuring adequate compensation for all damage resulting from a nuclear accident.

Can the first tier amount be greater than SDR 300 million?

Yes. SDR 300 million is a floor for the first tier amount. A CSC country can establish a higher first tier amount if it specifies a higher amount to the IAEA in its role as the Depository for the CSC.[56]

What is the first tier amount if a country imposes unlimited liability on an operator?

Unless a country specifies a higher amount to the IAEA, the first tier amount would be SDR 300 million. The remainder of the liability of the operator would be part of the third tier. Clarity as to the amount of the first tier is important because (1) the installation state must ensure the availability of the first tier amount[57] and (2) the second tier amount from the international fund only becomes available once the first tier amount is exhausted.[58]

What is the purpose of the CSC international fund?

The CSC international fund provides a mechanism by which the members of the international community, and especially those countries with significant nuclear power programmes, can demonstrate their commitment to responsible action in the event of a nuclear accident. By increasing the amount of compensation available, the international fund encourages countries, and especially those countries with no nuclear power programmes, to join the global nuclear liability regime.[59]

---

the courts of the installation state have jurisdiction over the nuclear incident. See e.g. Explanatory Texts, supra note 4, sections 1.2, 1.4 and 2.8.

53. See CSC II, supra note 4, pp. 20-22; CSC III, supra note 4, pp. 78-79.
54. CSC, supra note 4, Article III.1. See also Explanatory Texts, supra note 4, pp. 83-87; CSC I, supra note 4, pp. 29-31; CSC II, supra note 4, pp. 19-20; CSC III, supra note 4, pp. 77-78.
55. CSC, supra note 4, Article XII.2. See also Explanatory Texts, supra note 4, section III.5(c).
56. CSC, supra note 4, Article III.1(a)(i).
57. Ibid.
58. Ibid., Article III.1(b).
59. See CSC III, supra note 4, p. 84.

How is the amount of the CSC international fund determined?

The CSC requires each member country with one or more nuclear reactors to contribute SDR 300 for each megawatt (thermal) of installed capacity.[60] In addition to the component resulting from aggregate contributions by member countries with reactors, the international fund has a second component that is equal to 10% of the first component. The second component is allocated among all member countries on the basis of their United Nations rate of assessment.[61] No contribution, however, will be required from member countries on the minimum United Nations rate of assessment with no nuclear reactors.[62]

How much will a country contribute to the CSC international fund?

The exact amount of the contribution from a country is dependent on what countries belong to the CSC and the installed capacity within those countries at the time of a nuclear accident. By making reasonable assumptions concerning the future, a country can determine the approximate amount of its contribution. The IAEA has greatly facilitated this process by developing a calculator that permits a country to see what its contribution will be under potential future scenarios.[63]

Why should a country contribute to the international fund with respect to an accident on the other side of the globe that can have no effect on that country?

While this question may have merit in the context of a regional regime, it does not in the context of a global regime. In calling for establishment of a global nuclear liability regime, the IAEA Action Plan recognises that the nuclear industry is becoming increasingly international and that a nuclear accident anywhere is a nuclear accident everywhere.

Why should a country with no nuclear installations contribute to the international fund?

Some countries with no nuclear installations have questioned the requirement that they contribute to the international fund. This requirement reflects the view that contributions from countries with no nuclear installations represent a very important element of international solidarity.[64] As a practical matter, 90% of the contributions will be based on installed nuclear capacity and thus will come exclusively from those CSC countries where reactors are located.[65] The remaining 10% of the contributions will be based on the UN rate of assessments of CSC countries. Given that most countries with no nuclear installations have a low UN rate of assessment, a country with no nuclear installations will need to make a relatively small contribution to the fund.[66] In addition, those CSC countries with the

60. CSC, supra note 4, Article IV.1(a)(i).
61. Ibid., Article IV.1(a)(ii).
62. Ibid., Article IV.1(b).
63. IAEA (2014), "Calculator – Convention on Supplementary Compensation for Nuclear Damage", available at: http://ola.iaea.org/ola/CSCND/index.html (accessed 22 May 2015).
64. See CSC II, supra note 4, p. 31.
65. See Table 3 for the contributions from countries with nuclear power plants, assuming all IAEA countries join the CSC.
66. For example, based on the IAEA calculator assuming all IAEA member countries join the CSC, a country with no nuclear installation would contribute: SDR 348 if its UN rate of assessment were 0.001; SDR 696 if its UN rate of assessment were 0.002; SDR 1 739 if its UN rate of assessment were 0.005; SDR 3480 if its UN rate of assessment were 0.01; SDR 13 920 if its UN rate of assessment were 0.04; SDR 87 000 if its UN rate of assessment were 0.25; SDR 278 400 if its UN rate of assessment were 0.8; and SDR 1 506 000 if its UN rate of assessment were 4.5.

minimum UN rate of assessment are not required to make any contribution to the fund.

Why is one-half of the international fund reserved for transboundary damage?

The CSC reserves one half of the international fund exclusively for transboundary damage (i.e. damage outside the installation state). This reservation recognises the importance of compensating transboundary damage in a meaningful and equitable manner. Some have suggested that reserving half of the international fund for transboundary damage is inequitable to the installation state. The CSC addresses this concern by imposing the reservation only if the installation state establishes a first tier amount less than SDR 600 million. Thus, the entire international fund would be available to compensate nuclear damage in the installation state and other CSC countries if the installation state has established a first tier amount of SDR 600 million or greater (such as the first tier amount required by the 2004 Paris Convention).[67]

How would the CSC international fund and the Brussels supplementary fund interact?

The Brussels countries would have considerable flexibility in deciding how the CSC international fund and the Brussels supplementary fund interact. For example, the Brussels countries could decide to use the CSC international fund to satisfy a portion of the EUR 1.2 million that the Brussels Supplementary Convention requires to be paid by the operator and the installation state before the Brussels supplementary fund becomes available. On the other hand, the Brussels countries could decide to minimise the extent to which a Brussels country could have to provide public funds to both the CSC international fund and the Brussels supplementary fund. The 2004 Brussels Supplementary Convention provides that where all the members of the 2004 Brussels Supplementary Convention belong to the CSC, a Brussels country may use the funds that it would otherwise contribute to the Brussels supplementary fund to satisfy its obligation under the CSC to contribute to the CSC international fund.[68]

Why is it important for a country with a nuclear power programme to implement the best practices in the INLEX Recommendations?

The Fukushima accident demonstrated that damage from a serious nuclear accident can greatly exceed the amounts required by any of the nuclear liability instruments (or that is likely to be required by any future instruments). This situation has led some to question the value of any regime based on the enhanced nuclear liability principles. Countries with nuclear power programmes need to address this question directly in order to maintain public confidence in and acceptance of these programmes. In answering this question, it is important to recognise that the Fukushima accident also demonstrated the value of having in place a national law based on the nuclear liability principles that provided a mechanism to compensate victims promptly without litigation. The Fukushima accident also demonstrated the importance of requiring operators to compensate as much nuclear damage as practical and the need for active involvement by the state. INLEX considered these and other lessons learnt from the Fukushima accident and concluded countries must do more than the minimum required by the nuclear liability instruments. Accordingly, the INLEX Recommendations identify a number of best practices to

67. See CSC III, supra note 4, pp. 85-86.
68. 2004 Brussels Supplementary Convention, supra note 10, Article 14(d). See also CSC III, supra note 4, p. 80.

ensure adequate compensation will be available in the event of a serious accident. By incorporating these best practices into its national law, a country can reassure the public of its commitment to adequate compensation for victims in the event of a nuclear accident.

How is the CSC compatible with the best practices in the INLEX Recommendations?

Several best practices identified by the INLEX Recommendations relate to establishing and maintaining compensation and financial security amounts significantly higher than the minimum amounts required under the existing nuclear liability instruments and to making preparation for state intervention to assure sufficient funds are available to compensate damages adequately. In addition to requiring significant first and second tier compensation amounts, the CSC permits a CSC country to establish a third tier of compensation in excess of the first two tiers.[69] Thus, a CSC country can provide for compensation significantly greater than the amount required by the CSC with a view to assuring adequate compensation for all damage resulting from a nuclear accident. The CSC can accommodate the use of innovative techniques, in addition to insurance, to increase the availability of funds to provide compensation,[70] as well as funding mechanisms in cases where the amount of damage exceeds the compensation otherwise available from operators or other sources.[71] With respect to the other best practices, the CSC provides for compensating damage without discrimination[72] and, as a general rule, wherever suffered.[73] In addition, the CSC permits compensation for latent injuries[74] and damage resulting from a grave natural disaster of an exceptional character.[75]

69. CSC, supra note 4, Article XII.2. See also Explanatory Texts, supra note 4, section III.5(c).
70. For example, the Price-Anderson Act, 42 USC 2210, the national nuclear liability law in the United States, uses pooling to assure the availability of over USD 13 billion from the operators of nuclear power plants to compensate nuclear damage in the event of a nuclear accident involving a nuclear power plant in the United States. Pooling in the United States operates as follows: owners of nuclear power plants pay a premium each year for the reasonably available amount of private insurance for off-site liability coverage for each reactor unit. This first tier of insurance is supplemented by a second tier of operator funds from a retrospective pool. In the event a nuclear accident causes damages in excess of the insurance amount, each owner of a nuclear power plant would be assessed a prorated share of the excess up to USD 111.9 million per reactor unit. The United States government guarantees the first and second tier amounts to the extent an operator fails to make its share available. Price Anderson Act, Section 170.b, 42 USC 2210.b. For a general discussion of pooling, see CSC III, supra note 4, pp. 76 and 81.
71. For example, if damage is likely to exceed the first and second tier amounts, section 170.i of the Price-Anderson Act, 42 USC 2210.i, requires the United States government to develop a compensation plan to address the remaining damage.
72. Article III.2(a) provides that the first tier amount shall be distributed equitably without discrimination on the basis of nationality, domicile or residence. Article III.2(b) provides that the second tier amount shall be distributed equitably without discrimination on the basis of nationality, domicile or residence.
73. While the general rule for the first tier is that damage is covered wherever suffered, Article III.2(a) permits a CSC country to exclude nuclear damage in a non-member country. With respect to the second tier, Article V defines the geographic scope of nuclear damage and generally limits coverage to damage suffered in CSC countries. With respect to the third tier, Article XII.2 provides that damage in a member country with no nuclear installations on its territory cannot be excluded on the sole basis of lack of reciprocity. See CSC I, supra note 4, pp. 33-34; CSC II, supra note 4, pp. 27-28.
74. Article 9 of the Annex permits a CSC country to establish a prescription period longer than 10 years to the extent the liability of the operator is covered by insurance or other financial security or public funds for the longer period. If a member country establishes a longer period, its national law must contain provisions for the equitable and timely satisfaction of

Conclusions

Entry into force of the CSC marks a major milestone in our progress towards a global nuclear liability regime but it does not mean that such a regime has been achieved. While a global nuclear liability regime ultimately should result in establishing treaty relations among all countries that might be affected by a nuclear accident, the near term goal for achieving a global nuclear liability regime should be treaty relations among most countries that might be affected by a nuclear accident. Now that the CSC umbrella is open, it should be used to achieve that goal by creating treaty relations among as many countries as possible.

Table 1

Country	Current plants*	Conventions**
Argentina	3	VC, CSC
Armenia	1	VC,
Belgium	7	PC
Brazil	2	VC
Bulgaria	2	VC, JP
Canada	19	CSC***
China	26	none
Czech Republic	6	VC, JP
Finland	4	PC, JP
France	58	PC, JP
Germany	9	PC, JP
Hungary	4	VC, JP
India	21	CSC***
Iran	1	none
Japan	43	CSC
Korea	24	none
Mexico	2	VC
Netherlands	1	PC, JP
Pakistan	3	none
Romania	2	VC, JP, CSC
Russia	34	VC
Slovak Republic	4	VC, JP
Slovenia	1	PC, JP
South Africa	2	none
Spain	7	PC
Sweden	10	PC, JP
Switzerland	5	PC
Ukraine	15	VC, JP
United Kingdom	16	PC
United States	99	CSC

* See World Nuclear Association (2015), "World Nuclear Power Reactors & Uranium Requirements", www.world-nuclear.org/info/Facts-and-Figures/World-Nuclear-Power-Reactors-and-Uranium-Requirements/ (accessed 15 April 2015).

** CSC (Convention on Supplementary Compensation); JP (Joint Protocol); PC (Paris Convention); VC (Vienna Convention).

*** Announced intention to join CSC.

claims for loss of life or personal injury filed within the 10-year period after the nuclear incident. See CSC I, supra note 4, p. 37; CSC II, supra note 4, pp. 33-34

75. Article 6 of the Annex provides that the national law of the installation state may include damage resulting from a grave natural disaster of an exceptional character.

Table 2

Country	Future nuclear power plants*	Conventions**
Argentina	4	VC, CSC
Armenia	1	VC
Bangladesh	2	none
Belarus	4	VC
Brazil	5	VC
Bulgaria	1	VC, JP
Canada	5	CSC***
Chile	4	VC, JP
China	210	none
Czech Republic	3	VC, JP
Democratic People's Republic of Korea	1	none
Egypt	4	VC, JP
Finland	3	PC, JP
France	3	PC, JP
Hungary	2	VC, JP
India	63	CSC***
Indonesia	5	none
Iran	9	none
Israel	1	none
Japan	15	CSC
Jordan	2	VC
Kazakhstan	4	VC
Korea	12	none
Lithuania	1	VC, JP
Malaysia	2	none
Mexico	2	VC
Netherlands	1	PC, JP
Pakistan	4	none
Poland	6	VC, JP
Romania	3	VC, JP, CSC
Russia	58	VC
Saudi Arabia	16	VC
Slovak Republic	3	VC, JP
Slovenia	1	PC, JP
South Africa	8	none
Switzerland	3	PC
Thailand	5	none
Turkey	8	PC, JP
Ukraine	13	VC, JP
United Arab Emirates	14	VC, JP, CSC
United Kingdom	11	PC
United States	27	CSC
Viet Nam	10	none

* See World Nuclear Association (2015), "World Nuclear Power Reactors & Uranium Requirements", www.world-nuclear.org/info/Facts-and-Figures/World-Nuclear-Power-Reactors-and-Uranium-Requirements/ (accessed 15 April 2015).

** CSC (Convention on Supplementary Compensation); JP (Joint Protocol); PC (Paris Convention); VC (Vienna Convention).

*** Announced intention to join CSC.

Table 3

Country	Installed capacity (MWth)	Contribution (SDR)*
Argentina	5 365	1 759 756
Armenia	1 375	414 935
Belgium	17 705	5 658 619
Brazil	5 651	2 750 788
Bulgaria	6 000	1 816 347
Canada	45 625	14 725 379
China	68 543	22 353 449
Czech Republic	12 026	3 742 056
Finland	8 000	2 580 516
France	188 278	58 428 727
Germany	34 875	12 946 244
Hungary	5 950	1 877 519
India	19 911	6 204 945
Iran	3 005	1 025 322
Japan	131 077	43 090 975
Korea	62 733	19 513 442
Mexico	4 055	1 857 174
Netherlands	1 368	985 685
Pakistan	2 345	733 064
Romania	4 375	1 391 106
Russia	82 709	25 660 672
Slovak Republic	5 884	1 824 676
Slovenia	1 994	632 981
South Africa	5 570	1 800 387
Spain	20 977	7 327 153
Sweden	27 731	8 653 202
Switzerland	9 959	3,351,862
Ukraine	41 760	12 562 434
United Kingdom	26 401	9 721 632
United States	306 674	99 654 121

* Based on IAEA calculator assuming all IAEA countries belong to CSC.

Towards a new international framework for nuclear safety: Developments from Fukushima to Vienna

*By Emma Durand-Poudret**

Introduction

On 11 March 2011, the nuclear safety sector was deeply shaken by the accident at the Fukushima Daiichi nuclear power plant in Japan. Because of this accident, 25 years of established certainties in nuclear power plant operational safety that followed the Chernobyl disaster were once again called into question.

The adequacy of the international safety instruments was naturally questioned as well. The global nuclear safety framework is primarily composed of the Convention on Nuclear Safety (CNS)[1] and the safety standards of the International Atomic Energy Agency (IAEA). Should this accident have been an inducement for a comprehensive overhaul of the existing framework?

The broader international community mobilised its resources in response to this event, reflecting the overriding importance of nuclear safety and the urgent need to learn lessons from the accident.[2] A process of reviewing the effectiveness of the CNS thus began in April 2011 at the Fifth Review Meeting of the Contracting Parties to the Convention.

In September 2011, the adoption of the IAEA Action Plan on Nuclear Safety[3] encouraged the states parties to study mechanisms to enhance the effective implementation of the CNS and to consider proposals to amend the Convention.[4] In

* Emma Durand-Poudret is a PhD student at Aix-Marseille University, France (CERIC – UMR CNRS 7318). She specialises in nuclear and environmental law. Special thanks are due to Clément Braux, Nuclear safety engineer, for proofreading this paper.

1. Convention on Nuclear Safety (1994), IAEA Doc. INFCIRC/449, 1963 UNTS 293.
2. On the various measures taken by the international community following the accident, see: Johnson, P.L. (2013), "The post-Fukushima Daiichi response: The role of the Convention on Nuclear Safety in strengthening the legal framework for nuclear safety", *Nuclear Law Bulletin* No. 91, NEA, Paris, pp. 9-26 and Kueny, L. and E. Durand-Poudret (2014), *"La gouvernance internationale de la sûreté nucléaire: quelle remise en cause après Fukushima?"* [The international governance of nuclear safety: what challenges has Fukushima raised?], in Proceedings of the 21st INLA Congress, Nuclear Law in Progress, 20-23 October 2014, Buenos Aires, Argentina, pp. 205-231.
3. IAEA (2011), "Draft IAEA Action Plan on Nuclear Safety, Report by the Director-General", IAEA Doc. GOV/2011/59-GC(55)/14, IAEA, Vienna. This Action Plan followed the declaration adopted at the conclusion of the June 2011 Ministerial Conference, when the states asked the Director-General of the IAEA to prepare such a document.
4. Ibid., p. 4:
   International legal framework – Improve the effectiveness of the international legal framework:
   - States parties to explore mechanisms to enhance the effective implementation of the Convention on Nuclear Safety [...] and to consider

August 2012, the Second Extraordinary Meeting of the Contracting Parties allowed certain states to table amendments,[5] thus stimulating debate but also revealing the difficulty of obtaining the majority required for such an undertaking. In order to break the impasse, an effectiveness and transparency working group[6] was set up with the ambitious task of reporting to the Sixth Review Meeting on "a list of actions to strengthen the CNS and on proposals to amend, where necessary, the Convention."[7]

Since the amendment approach appeared to be a valid solution, Switzerland took the opportunity of the Sixth Review Meeting to submit a new draft to that effect. The convening of a Diplomatic Conference under Article 32 of the CNS would then allow the Swiss proposal, and any potential revisions, to be discussed in greater detail. On 9 February 2015, however, the parties were unable to agree on the amendment to the CNS, though they did come to a compromise by adopting a non-binding text by consensus, the Vienna Declaration.[8]

This article proposes a critical analysis of the process of enhancing the effectiveness of the Convention, beginning with a description of the new safety objectives and the associated challenges, followed by a review of the proposed Swiss amendment. The Vienna Declaration and its future prospects will then be examined.

Mobilisation of the international community after the accident

After the Fukushima accident, the international community had to send a strong signal to the rest of the world and take all the measures necessary to ensure continued improvements in safety. There could be no improvements without an analysis of the existing legal framework to identify possible weaknesses and remedy them where possible.

Formulation of a new safety objective

The Second Extraordinary Meeting of the Contracting Parties to the CNS was a particularly important stage in that analysis of the system, representing the first opportunity for the parties to establish formal proposals for amendments after Fukushima. It also allowed the effectiveness and transparency working group to be set up, whose final report was to be particularly instructive in terms of strengthening the CNS. Most importantly, however, the parties to the Second Extraordinary Meeting adopted a number of findings, particularly Conclusion 17:

> The displacement of people and the land contamination after the Fukushima Daiichi accident calls for all national regulators to identify provisions to

proposals made to amend the Convention on Nuclear Safety and the Convention on the Early Notification of a Nuclear Accident.

- Member States to be encouraged to join and effectively implement these Conventions.

5. These amendments were proposed by Switzerland and Russia. See IAEA (2012), Second Extraordinary Meeting of the Contracting Parties to the Convention on Nuclear Safety, 27-31 August 2012, Vienna, Austria, Final Summary Report ("Report of the Second Extraordinary Meeting"), IAEA Doc. CNS/ExM/2012/04/Rev.2, pp. 15-23.
6. Ibid., para. 33.
7. IAEA (2013), Measures to strengthen international cooperation in nuclear, radiation, transport and waste safety, IAEA Doc. GC(57)/RES/9, IAEA, Vienna, p. 8.
8. IAEA (2015), Vienna Declaration on Nuclear Safety: On principles for the implementation of the objective of the Convention on Nuclear Safety to prevent accidents and mitigate radiological consequences, IAEA Doc., INFCIRC/872, IAEA, Vienna.

> prevent and mitigate the potential for severe accidents with off-site consequences. Nuclear power plants should be designed, constructed and operated with the objectives of preventing accidents and, should an accident occur, mitigating its effects and avoiding off-site contamination. The Contracting Parties also noted that regulatory authorities should ensure that these objectives are applied in order to identify and implement appropriate safety improvements at existing plants.[9]

This finding underscores the parties' intention to achieve the initial safety objective of the Convention. The Fukushima accident had serious environmental consequences, particularly in terms of lasting land contamination and rekindled the key issue of maintaining the integrity of containment in the context of nuclear disasters.

The "second generation" reactors such as those operated at the Fukushima Daiichi power plant are boiling water reactors. The safety objectives in the event of an accident involving these reactors are to control the nuclear reaction, cool the nuclear fuel and contain the radioactive products. In the event of an over pressurisation due to the presence of steam in the nuclear reactor core, however, deliberate decompression is possible. This involves the controlled release of steam from the containment enclosure. Similarly, excess pressure in the enclosure can be followed by decompression into the environment via filtration systems. This leads to off-site dissemination of certain unfiltered radioactive products, as happened in reactor No. 2 at Fukushima Daiichi.

The new safety objective would therefore be to design reactors or to adjust the design of existing reactors so that they avoid such releases, thus preventing off-site dissemination and contamination. The challenge is twofold: releases of radioactivity into the environment can affect people and also their habitats. Therefore, not only must the population be protected against radiation but their environment must also be taken into consideration, reflecting the right to a healthy environment enshrined in many international instruments.[10] It seems rather excessive to conclude, however, that this objective will lead to protecting the environment per se, namely the natural environment without considering its potential human use. In this particular case, it is above all a matter of protecting the environment as the setting in which people develop, rather than nature as an object of law.

The Sixth Review Meeting of the contracting parties: Time to deliver?

While the parties to the Second Extraordinary Meeting identified the need for a new safety objective, the question of its technical feasibility remained elusive. This crucial issue was hotly debated during the Sixth Review Meeting of the Contracting Parties. Although the parties once again confirmed their commitment to the findings of this Second Extraordinary Meeting, they also raised the issue of the technical applicability of the objective referred to in Conclusion 17.

That objective called for reactors to be designed to maintain the integrity of the containment enclosure and prevent lasting contamination of the environment. If this new objective appeared to be appropriate for new types of reactors such as the

9. Report of the Second Extraordinary Meeting, supra note 5, at p.5.
10. This includes, in particular, Principle 1 of the 1972 Stockholm Declaration on the Environment and Principle 1 of the 1992 Rio Declaration on the Environment and Development. See "[Final] Declaration of the United Nations Conference on the Human Environment", 16 June 1972, UN Doc. A/CONF.48/14/Rev.1 (1973), 11 ILM 1416 (1972), [30] and Report of the UN Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, UN Doc. A/CONF.151/26/Rev.1.

EPR,[11] its application remained problematic in the case of existing reactors. Indeed, the objective is rather vague and several states parties underscored the difficulties in translating it into regulatory safety requirements. The IAEA was therefore tasked with establishing technical implementation criteria.

The second question was how the objective should be implemented within the framework of the Convention: should it be a mandatory requirement or would an incentive approach be sufficient?

The Final Report of the Working Group on Effectiveness and Transparency submitted its conclusions at the Sixth Review Meeting, identifying in particular several tools that could enhance the Convention.[12] These various means included the possibility of amending the CNS. The inclusion of a new safety objective through an amendment therefore seemed to be an appropriate approach to strengthening the Convention and consequently the international safety system.

An amendment to the Convention on Nuclear Safety

An ambitious and coherent Swiss draft

The possibility of amending a convention, as permitted in Article 32 of the CNS, preserves some flexibility in the content of the instrument. As Daillier and Pellet explain, a treaty reflects the balance of the obligations the parties accepted under specific circumstances.[13] These evolve, and the freezing of relations between contracting states must be avoided so that obligations can be modified.[14] When the CNS was adopted in 1994, the state-of-the-art in terms of nuclear technology was clearly different from what it is now, and some flexibility was therefore essential.

The experience gained from the Chernobyl and Three Mile Island accidents had already drawn the international community's attention to the need for a wide-ranging safety objective, though a decision had never been taken to ratify this officially.

Switzerland, therefore, took advantage of the Sixth Review Meeting to propose an amendment and thus seek to make the principle of "avoiding off-site contamination" mandatory:

> Art. 18. (Design and Construction), new para. iv.
>
> Nuclear power plants shall be designed and constructed with the objectives of preventing accidents and, should an accident occur, mitigating its effects and avoiding releases of radionuclides causing long-term off-site

11. The safety and environmental performance systems relating to "third generation" reactors have been improved. The EPR, for example, allows the corium to be recovered in the event of an accident and reactor core meltdown.
12. IAEA (2014), Measures to Strengthen International Cooperation in Nuclear, Radiation, Transport and Waste Safety, IAEA Doc. GOV/2014/40-GC(58)/19, IAEA, Vienna, para. 41:
    > During the reporting period, two meetings of the Working Group on Effectiveness and Transparency (WGET) of the CNS were held in Vienna, Austria, with 47 CNS CPs represented. Fourteen areas to improve the effectiveness and transparency of the CNS were identified. Five tools to strengthen each area were identified, namely: amendments to the convention; new or amended CNS guidance documents; authoritative interpretations; and voluntary measures and recommendations for action by another body. The WGET also identified 68 actions to strengthen CNS effectiveness.
13. Daillier, P. and A. Pellet (2002), *Droit international public*, LGDJ, 7th Edition, Paris, p. 294.
14. Ibid.

> contamination. In order to identify and implement appropriate safety improvements, these objectives shall also be applied at existing plants.[15]

In support of its argument, Switzerland raised the relevant point that the safety objective was already present in substance in several IAEA documents, firstly in Conclusion 17 of the Report of the Second Extraordinary Meeting,[16] but also in the Resolution on Nuclear Safety adopted in 2013 by the General Conference of the Agency.[17] Furthermore, the amendment reflected the process developed at the European level: the Amendment of the Nuclear Safety Directive.[18] This new instrument confirmed the coherence of the Swiss approach in that it gave legally binding effect to provisions on a safety objective corresponding in substance to that referred to in the amendment. Article 8(1) of the Directive states that:

> Member States shall ensure that the national nuclear safety framework requires that nuclear installations are designed, sited, constructed, commissioned, operated and decommissioned with the objective of preventing accidents and, should an accident occur, mitigating its consequences and avoiding:
>
> (a) early radioactive releases that would require off-site emergency measures but with insufficient time to implement them;
>
> (b) large radioactive releases that would require protective measures that could not be limited in area or time.[19]

The symbolic dimension of the Swiss amendment was also important, since it sent a message to the public that the lessons of the Japanese disaster had been learnt by amending the instrument that underpinned the international scheme governing nuclear safety. It also firmly demonstrated that nuclear safety was part of a continuous improvement process, particularly for existing installations.

The challenge of this amendment to the CNS, however, lay above all in its mandatory nature. The Convention is subject to international treaty law; consequently, the amendment will necessarily result in international legal obligations.

Had the amendment been adopted as proposed, there would have been several kinds of consequences for the parties. They would firstly have had to draw up a report on the implementation of the amendment to Article 18 at the national level. There would also have been a ban imposed on the construction of nuclear power plants with second generation reactors. Regarding the safety of existing power plants, the parties would have had to carry out a periodic safety review with the

15. IAEA (2014), Sixth Review Meeting of the Contracting Parties to the Convention on Nuclear Safety, 24 March-4 April 2014, Vienna, Austria, Summary Report, IAEA Doc. CNS/6RM/2014/11_Final, Annex 1.
16. Report of the Second Extraordinary Meeting, supra note 5, para. 17.
17. IAEA (2013), supra note 7, para. 46:

> Further encourages Member States to exchange regulatory information and share experiences with regard to new nuclear power plant designs and design certification, taking into account that nuclear power plants should be designed, constructed and operated with the objectives of preventing accidents, and, should an accident occur, mitigating its effects and avoiding off-site contamination.

18. Council Directive 2014/87/Euratom of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations, *Official Journal of the European Union* (OJ) L 219 (25 July 2014), pp. 42–52.
19. Ibid. at Article 8(1).

latest applicable methods and assumptions (state-of-the-art), taking compensatory measures and making appropriate improvements as far as technically feasible and appropriate.[20] Finally, in relation to the design of future reactors, the parties would have had to ensure that they reduced the frequency of initiating events, controlled transients, incidents, multiple failure conditions and external events, controlled low pressure core meltdown scenarios and virtually eliminated sequences potentially leading to significant releases.[21]

A divided international community

If the amendment approach thus appears to be well-adapted for the nuclear safety sector and the CNS, the international community is broadly divided as to its desirability, and while there is a clear willingness to learn lessons in the aftermath of the accident, other arguments also come into play.

In relation to procedure, on the one hand, certain states referred to political difficulties in ratifying the amendment at a national level.[22] The amendment process is particularly cumbersome for a multilateral agreement such as the CNS. When the Convention was adopted, Pierre Strohl argued that because the CNS was meant to be universal it did not evolve greatly.[23] Such a "global" approach requires a significant number of parties to achieve harmony under very precise rules. This is clearly a complex task, thus making conventions like the CNS particularly difficult to revise.

Some parties, on the other hand, expressed doubts over the practical and legal implications of the amendment, citing in particular the cost of implementing such an amendment in relation to existing power plants. Knowing that as of 27 March 2015, the amount of compensation paid by the operator TEPCO for the Fukushima accident was close to JPY 4 785 billion,[24] this argument must be weighed against the other interests at stake. The amendment would be brought into force only with respect to the parties that had ratified, accepted, approved or confirmed it, giving rise to a "two-tier" system involving two versions of the Convention, one amended and the other not amended. The Review Meetings would therefore have to be based on two different "legal bases", which would inevitably complicate the process.

Treaties moreover entail the creation of legal obligations, and although these are "soft" and general in nature, they are still important. This binding nature is the principal strength of the Convention compared to other non-binding safety standards. A crucial question therefore arises: despite the fact that the CNS is an incentive convention[25] and lacks a sanction mechanism, would the Convention

20. Müller-German, A. (2014), *"Proposition Suisse d'amendement à la Convention sur la sûreté nucléaire"* [Proposal by Switzerland to Amend the Convention on Nuclear Safety], Presentation, Vienna, 11 March.
21. Ibid.
22. Wanner, H. (2015), "International community adopts Swiss idea for improving nuclear power plant safety", Swiss Federal Nuclear Safety Inspectorate, www.ensi.ch/en/2015/02/09/international-community-adopts-swiss-idea-for-improving-nuclear-power-plant-safety/ (accessed on 30 March 2015).
23. Strohl, P. (1994), "*La Convention de l'AIEA sur la sûreté nucléaire*" [IAEA Convention on Nuclear Safety], *Annuaire français de droit international*, Vol. 40, CNRS Éditions, Paris, pp. 809-810.
24. TEPCO (2015), "Records of Applications and Payouts for Indemnification of Nuclear Damage", www.tepco.co.jp/en/comp/images/jisseki-e.pdf (accessed 30 March 2015).
25. On the incentive character of the Convention, see: Jankowitsch-Prevor, O. (1994), "The Convention on Nuclear Safety", *Nuclear Law Bulletin* No. 54, NEA, Paris, p. 9, and de Wright, T. (2007), "The 'Incentive' Concept as Developed in the Nuclear Safety Conventions and its Possible Extension to Other Sectors", *Nuclear Law Bulletin* No. 80, NEA, Paris, pp. 29-47.

support an action for damages? If that were the case, it would justify the reticence of some parties to accept such a revision.

According to Pierre Strohl, the rules of international law relating to the implementation of treaties could be broadly applied in this case, and states could be rendered liable. If the possibility of being held liable seems to be inconsistent with the incentive character of the Convention, the author nevertheless argues that as soon as nuclear safety provisions are enshrined in a convention and bind the parties upon entry into force, it would be logical to apply the rules of positive international law to them, particularly those relating to liability for damage associated to those provisions. The author then raises another legitimate question: is the Convention a sufficient basis for an international action for damages by a contracting state against another state when the direct cause of that damage will show to have breached the limits of one of its obligations?[26]

In the framework of an accident such as the one at Fukushima Daiichi, a causal relationship must then be established between the occurrence of damage and the failure to implement a relevant safety obligation.[27] This task would be particularly complex because the obligations under the Convention are general and imprecise.

Such liability is of real interest if it allows reparation for the injury caused. Under the Draft articles on Responsibility of States for Internationally Wrongful Acts, adopted by the International Law Commission in 2001, "The responsible State is under an obligation to make full reparation for the injury caused by the internationally wrongful act."[28] An internationally wrongful act occurs when "conduct consisting of an action or omission is attributable to the State … and constitutes a breach of an international obligation of the State."[29]

This liability attributable to a state[30] must clearly be distinguished from the objective liability of the nuclear operator as provided for by the international third party liability conventions.[31] In any event, the liability of the USSR was not called into question after the Chernobyl accident, and it is highly unlikely that the liability of Japan will be called into question either after the Fukushima Daiichi accident, or in any case nothing suggests that steps will be taken to that effect.

The difficulties in holding the state liable for nuclear installations raise a broader issue of the effectiveness of international instruments without sanction mechanisms.

26. Strohl, P., supra note 23, p. 820.
27. Ibid., p. 819.
28. International Law Commission (2001), "Draft Articles on the Responsibility of States for Internationally Wrongful Acts", Article 31, "Reparation".
29. Ibid., Article 2, "Elements of an internationally wrongful act of a State".
30. Boustany, K. (1998), "The Development of Nuclear Law-Making or the Art of Legal 'Evasion'", *Nuclear Law Bulletin,* No. 61, NEA, Paris, p. 53:
    > It is, naturally, essential that the operator or licence holder be subject to a regime of objective and exclusive liability. It is just as vital for a State to know that its international liability can be invoked for breach of a rule of international law or negligence in actually implementing this regime, or doing so effectively. In this respect, the indulgence shown to the USSR by the countries of Western Europe directly affected by the Chernobyl accident is certainly not a model to be followed.
31. Paris Convention on Third Party Liability in the Field of Nuclear Energy of 29 July 1960, as amended by the Additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982, 1519 UNTS 329; Vienna Convention on Civil Liability for Nuclear Damage (1963), IAEA Doc. INFCIRC/500, 1063 UNTS 266; and the Convention on Supplementary Compensation for Nuclear Damage (1997), IAEA Doc. INFCIRC/567, 36 ILM 1473.

A challenge to incentive instruments?

Over and above the amendment of the Convention, what is at issue is its effectiveness as an "incentive" instrument. The Convention is based above all on the peer review process by states parties and not on the obligations in the Convention that were deliberately made to be flexible.

The peer review mechanism was the subject of much debate at the Sixth Review Meeting, since the obligation for the parties to draw up a national report[32] outlining the measures taken domestically was not unanimously respected. According to the summary report of this meeting:

> three years after the Fukushima Daiichi accident, a number of the 76 Contracting Parties either did not submit their national report or did not submit their national report to the Secretariat in time to support effective review by other Contracting Parties. In addition, 34 Contracting Parties did not post any questions on the national reports of their peers.[33]
>
> Finally, seven parties did not attend the review meeting.

These meetings are nevertheless far from pointless, and the technical quality of the respective discussions cannot be denied, though certain parties' lack of involvement contributes to the waning interest in the peer review system. Thus, some states argue that emphasis should be placed on improving the process rather than on seeking to improve a Convention that will in any case continue to be an instrument of general requirements.

It is difficult to say which arguments prevailed in the decision not to adopt the amendment in the first place, though the parties did agree to organise a Diplomatic Conference to consider the matter.[34]

From the Second Extraordinary Meeting, the adoption of an amendment to the CNS appeared to be a delicate matter due to certain states parties' direct opposition. Although Switzerland chose to continue this approach, it already seemed to be compromised prior to the Diplomatic Conference. The initiative was not fruitless, however, since it underscored the need to broaden the initial safety objective. Although it was not to be included in the Convention as a binding obligation, the parties nevertheless came up with what was regarded as a satisfactory alternative.

A declaration by consensus

From hard law to soft law…

At the Sixth Review Meeting, the contracting parties had decided by a two-thirds majority to convene a diplomatic conference that would allow the Swiss proposal to be examined and discussed, if not recast. The conference was to be a key moment for the CNS, since it was likely to be a unique opportunity to amend the instrument and to send a message to the world on the state of the treaty governing nuclear safety.

Several measures had been taken to ensure the successful preparation of the Conference. An informal working group was set up and met several times to allow the parties to address procedural and organisational matters, but also the substance

32. CNS, supra note 1, at Article 5.
33. Sixth Review Meeting of the Contracting Parties to the Convention on Nuclear Safety, supra note 15, pp. 4-5.
34. CNS, supra note 1, at Article 32.

of the Swiss proposal.[35] A consultation meeting was also organised on 15 October 2014 to finalise certain procedural details, in accordance with the requirements of the Sixth Review Meeting.

It must be borne in mind that the amendment solution was not the only one to be identified as relevant by the Working Group on Effectiveness and Transparency. The latter's final report also mentioned more flexible solutions to improve the effectiveness of the Convention. These involved "authoritative interpretations[] and voluntary measures and recommendations for action by another body."[36] This would make it possible to go to the Diplomatic Conference with a number of alternatives at the ready.

Seventy states parties and Euratom then met at IAEA headquarters in Vienna on 9 February 2015. The President of the Conference, Rafael Mariano Grossi, elected by acclamation, presented the results of the work carried out by the informal working group.[37] This document, the Vienna Declaration, reflected the parties' political commitment to certain principles for achieving the objective of the Convention of preventing accidents and mitigating radiological consequences.

Although the parties did, in fact, examine the Swiss proposal, they nevertheless concluded, rather unsurprisingly, that it would not be possible to achieve a consensus on the adoption of the amendment of Article 18. The Declaration, on the other hand, appeared to be an interesting alternative that sought to bring all the parties together. The Vienna Declaration on Nuclear Safety[38] was thus adopted by consensus without difficulty. In agreement with the other parties, Switzerland finally withdrew its proposal to promote the success of this alternative. Hans Wanner, Director-General of the Swiss Federal Nuclear Safety Inspectorate, conceded that: "Trying to force an amendment to the Convention by way of a vote would have been counterproductive under these circumstances."[39] Indeed, without the support of the "major" nuclear countries, even with a successful vote, the majority of the world's reactors would not be subject to the new safety requirements, creating an undesirable "two-tier" system.

Content and scope of the new instrument

While the Preamble to the Declaration merely refers to the various nuclear safety measures taken at international level since the Fukushima Daiichi accident.[40] The body of the text sets out a series of principles to guide states in implementing the objectives of the CNS. The first principle, in essence, reproduces the contents of the proposed amendment while providing clarification on radioactive releases involving long-term off-site contamination. The term "mitigating" then replaces the term "preventing" and seems to be more realistic. But, the states parties are encouraged to avoid early radioactive releases and releases large enough to require long-term protective measures and actions. Interestingly, the clarification introduced by the

35. The working group met on 3 July, 13 and 14 October and 4 December 2014, 13 and 21 January and 3 and 5 February 2015, chaired by the Argentine Ambassador to the United Nations in Vienna, Rafael Mariano Grossi.
36. IAEA, supra note 12, p. 8, para. 41.
37. IAEA (2015), Diplomatic Conference to consider a Proposal by Switzerland to amend the Convention on Nuclear Safety, 9 February 2015, Vienna, Austria, Summary Report, IAEA Doc. CNS/DC/2015/3/Rev.2, p. 2.
38. Vienna Declaration, supra note 8.
39. Wanner, H., supra note 22.
40. The Preamble reviews, in particular, the guidance documents, the conclusions adopted at the Second Extraordinary Meeting of the Contracting Parties, the 2011 IAEA Action Plan on Nuclear Safety and the proposed Swiss amendment.

Declaration concerns the application of these objectives only to new nuclear power plants, thus avoiding the issue of the applicability of such technical provisions to existing plants.

In the case of existing installations, the second principle of the Vienna Declaration establishes that "Comprehensive and systematic safety assessments are to be carried out periodically and regularly" "to identify safety improvements that are oriented to meet the … objective [of the CNS to prevent accidents with radiological consequences and mitigate such accidents should they occur]. Reasonably practicable or achievable safety improvements are to be implemented in a timely manner."[41]

The third principle recalls that national requirements for addressing that objective are to take into account the relevant IAEA Safety Standards and other good practices identified as appropriate.

The Declaration also includes several provisions on CNS Review Meetings. The parties have to ensure that these meetings reflect the implementation of the principles of the Declaration, particularly in their national reports. These objectives should in any event help to strengthen the peer review process of the CNS.

Finally, the parties request the IAEA Director-General to transmit the document to the IAEA Commission on Safety Standards for incorporation into the relevant rules. The parties also ask for the Declaration to be published as an IAEA Information Circular to promote its dissemination.

At the international level, the states are regularly encouraged to negotiate instruments that are not treaties but which will nevertheless govern the relations they may have, or at least to formulate recommendations on how to implement their measures. Although these acts are not subject to the law of the treaties or to the well-known principle of *pacta sunt servanda*,[42] they are nonetheless not without legal effect.

The Vienna Declaration falls into the category of instruments classified by Daillier and Pellet as "*actes concertés non conventionnels*" or non-consensual concerted acts.[43] These are defined as instruments arising from negotiations between persons authorised to bind states and required to frame relations between the latter, though without binding effect. It is therefore established that the document is not mandatory, but this does not prevent it from creating legal obligations. This ambiguous area of soft law is made up of the standards and recommendations of international organisations.[44]

41. Vienna Declaration, supra note 8, at p. 3.
42. A Latin phrase meaning "agreements must be kept".
43. Daillier, P. and A. Pellet, supra note 13, p. 385: "*ils revêtent des formes hétérogènes et reçoivent des dénominations variées: communiqués communs, déclarations, chartes, codes de conduite* […]" [they are different in form and go under a variety of names: joint communiqués, declarations, charters, codes of conduct […]].There is no exact translation of the term *actes concertés non conventionnels*, but it is used in French literature to describe non-binding agreements undertaken as a matter of convenience. Gomaa, M. (2001), "Non-Binding Agreements in International Law", in Boisson de Chazournes, L. and V. Gowlland-Debbas (ed.), *The International Legal System in Quest of Equity and Universality / L'ordre juridique international, un système en quête d'équité et d'universalité : Liber Amicorum Georges Abi-Saab*, Martinus Nijhoff Publishers, The Hague, p. 230.
44. Ibid., p. 387: "*Un trait particulier distingue les actes concertés non conventionnels de l'ensemble des résolutions des organisations internationales: celles-ci sont des actes unilatéraux imputables à l'Organisation qui les adopte, en tant que sujet de droit international; ceux-là émanent de deux ou plusieurs sujets de droit* […]." [A particular feature distinguishes *actes concertés non*

The legal scope of the Vienna Declaration must therefore be examined. This flexible legal tool seeks to set out "expectations of potential behaviour"[45] and "sway the attitudes of the international actors."[46] It therefore entails encouraging the Contracting Parties to the CNS – the targets of the Declaration – to act in accordance with the principles laid down therein.

Why would the parties comply with a non-mandatory tool? States cannot be held liable for failure to comply with non-binding instruments and cannot be subject to legal action. They are therefore bound by the principle of good faith, and in so far as the instrument adopted has created certain expectations towards other contracting parties, there could be scope for applying the rule of estoppel.[47]

What is more, the fact that the states parties demonstrated great care to negotiate the content of these acts and to ensure that their application is monitored bears witness to their determination to achieve an effective result. The states respond and commit themselves to these acts voluntarily, which should logically facilitate their compliance with them. Anthony Wetherall's comment perfectly encapsulates the spirit of these acts: "Thus, the greater the consensus in the international community for the creation of such norms, the greater the possibility that a state will comply."[48]

After the Fukushima Daiichi accident, the international community felt the need to develop new nuclear safety objectives. The fear of another accident and the concern to act in line with a comprehensive approach through international co-operation should then encourage states to implement these objectives at national level.

This text nevertheless appears difficult to classify since it clearly entails legal obligations yet is also a political commitment by the parties. These classifications do not seem to be mutually exclusive,[49] however. It is, in fact, the parties themselves that decide the nature of the instrument. The terms used are, in particular, a rather reliable indicator of their intent, as are the circumstances in which the text was adopted. In this case, the contracting parties willingly recognise the political nature

conventionnnels from the resolutions as a whole of international organisations: the latter are unilateral acts attributable to the organisation that adopts them, as a subject of international law; the former derive from two or more subjects of law […]].

45. Wetherall, A. (2005), "Normative Rule Making at the IAEA: Codes of Conduct", *Nuclear Law Bulletin* No. 75, NEA, Paris, p. 76.
46. Ibid.
47. Case concerning the Temple of Preah Vihear, International Court of Justice, Reports 1962, pp. 143-144:

    > [T]he principle operates to prevent a State contesting before the Court a situation contrary to a clear and unequivocal representation previously made by it to another State, either expressly or impliedly, on which representation the other State was, in the circumstances, entitled to rely and in fact did rely, and as a result that other State has been prejudiced or the State making it has secured some benefit or advantage for itself.

48. Wetherall, A., supra note 45, p. 75.
49. Institut du Droit de la Paix, "Session de Cambridge – 1983: *Textes internationaux ayant une portée juridique dans les relations mutuelles entre leurs auteurs et textes qui en sont dépourvus*" [Cambridge Meeting – 1983: International texts with legal scope in mutual relations between their authors and texts without legal scope"]; Septième Commission, Rapporteur: Michel Virally, p. 2, "*Toutefois, quelle que soit sa dénomination, un même texte peut contenir à la fois des dispositions de caractère juridique, au sens du paragraphe 1, et des engagements purement politiques, au sens de l'alinéa précédent*." [Irrespective of the name, however, the same text can include both legal provisions within the meaning of paragraph 1 and purely political commitments within the meaning of the preceding subparagraph.]

of the commitment.[50] A characteristic broadly justified by the context at the time, certain states' direct opposition to the amendment had to be overcome while seeking to preserve the substance of the text within a more flexible tool. Be that as it may, the political commitments are also subject to the abovementioned obligation of good faith.[51]

The fact that a consensus was reached at the Diplomatic Conference marks an important step in international co-operation within the nuclear safety sector. It provides a comprehensive reaffirmation that safety is a matter of the utmost importance and that everything is done to improve it.

Soft law, a sound framework for nuclear safety

The adoption of a declaration of this kind seems to confirm an expression used by Katia Boustany, according to which nuclear safety is "caught in the trap of soft law and nebulous law". Safety is, in fact, a fruitful domain for those "*actes concertés non-conventionnels*" and for soft law standards more generally.

This is largely because its substance is essentially formed by scientific assessments and technical concepts and practices,[52] making it the discipline undoubtedly the most likely to be formalised by specifically legal standards.[53]

Recourse to soft law is not without its advantages. Many states refuse to delegate some of their sovereign powers in this area and to have real obligations imposed on them in this context, and the nature of this type of instrument moreover facilitates its adoption.[54]

50. See, for example, the US declaration, Kang, E. (2015), "Diplomatic Conference on the Convention on Nuclear Safety", US Department of State, www.state.gov/t/isn/rls/rm/2015/237313.htm (accessed 30 March 2015): "The declaration before us represents a political commitment to reinvigorate the principles of the Convention itself, and by coming together as [a] community to endorse it, we will be sending a powerful message to the world", or the French declaration: French Declaration to the United Nations in Vienna (2015), "*Sûreté nucléaire: un engagement fort afin de rehausser le niveau d'exigence*" [Nuclear safety: a strong commitment to raise the level of requirements], France Diplomatie, www.diplomatie.gouv.fr/fr/politique-etrangere-de-la-france/environnement-et-developpement/actualites-et-evenements/2015-23912/article/surete-nucleaire-actualite (accessed 30 March 2015): "*La France se félicite que les parties à la convention aient pris à cette occasion un engagement politique fort afin de rehausser leur niveau d'exigence sur la sûreté nucléaire et de travailler à l'amélioration continue de la sûreté des installations, en particulier en vue de prévenir les accidents*" [France welcomes the strong political commitment of the Parties to the Convention to raise the level of their nuclear safety requirements and to work towards continual improvements in installation safety, particularly in order to prevent accidents].
51. Institut du Droit de la Paix, supra note 49, p. 3.
52. Strohl, P. (1994), *The Hazards Arising out of the Peaceful Use of Nuclear Energy*, Martinus Nijhoff Publishers, Dordrecth/Boston/London, p. 57.
53. Ibid.
54. See in this context: Duplessis, I. (2007), "*Le vertige et la* soft law*: réactions doctrinales en droit international*" [Vertigo and soft law: academic reactions in international law], *Revue Québécoise de Droit International*, Montréal, 2007, p. 251: "*Il permet de faire approuver des normes sur des sujets encore incertains, fortement dépendants des avancées techniques, ou dont la validité scientifique est discutée. Un instrument souple peut également faciliter l'adoption d'une norme sur un sujet controversé politiquement et qui rencontre des résistances de la part de certains États ou groupes de pression à l'intérieur des États*" [This ensures the approval of standards on subjects which are still nebulous and heavily dependent on technical developments, or the scientific validity of which is disputed. A flexible instrument may also facilitate the adoption of a standard on a politically controversial subject which is resisted by some States or pressure groups within States], and A. Wetherall, supra note 45, p. 72: "[…] this

In addition, the success of the process is due largely to its flexibility. These standards can be negotiated rapidly and do not need to be ratified. The process is facilitated in the event of alterations, as is termination of the commitment. This flexibility is therefore perfectly appropriate to changing international circumstances, compared to the now rather outmoded convention approach.[55]

The contracting parties have furthermore called for the IAEA to include the Declaration in the relevant safety standards, which also fall within the domain of soft law and are therefore not mandatory. The IAEA safety standards reflect an international consensus "on what constitutes a high level of safety for protecting people and the environment from harmful effects of ionising radiation."[56] States willingly accept these standards when they are regarded as appropriate in conducting their nuclear operations and regularly include them in their national legislation. The contracting parties to the CNS might regard them as a coherent and reliable means of ensuring effective respect for the obligations arising out of the Convention, though it should be noted that the Convention does not make specific reference to them.[57]

Ultimately, the legal effect arising out of these standards should be relatively similar to that of the Convention and will depend on the will of the states parties. The status of the principles of the Declaration, on the other hand, will be different in that they will henceforth be set out in a document issued by an international organisation, the IAEA, rather than by the contracting parties to the CNS.[58]

One of the aspects of the IAEA Action Plan furthermore concerns the strengthening of IAEA safety standards. The inclusion of the Declaration would necessarily contribute to that, although these standards seem to require improvement at the level of implementation rather than in their content.[59]

Conclusion

The adoption of the Vienna Declaration allows the contracting parties to the CNS to put into practice the drive beginning shortly after the Fukushima Daiichi accident to improve the international governance of nuclear safety. While it is too early to judge the effectiveness of the Declaration, its adoption by consensus must nevertheless be

use in the nuclear context of non-binding instruments and their impact may well at first glance reflect a respect for the law and a desire to avoid entering into legal obligations when the ability to comply is uncertain."

55. See Duplessis, I., supra note 54, p. 248: "*A priori, la* soft law *semble être une réponse sociale et juridique à la complexification de l'ordre international*" [Soft law seems a priori to be a social and legal response to the increasing complexity of the international order], and Kolb, R., *Réflexions de philosophie du droit international. Problèmes fondamentaux du droit international public: Théorie et philosophie du droit international*" [Philosophical reflections on international law. Fundamental issues of public international law], Bruylant, Brussels, 2009, pp. 58-59. "*On s'est plu à mettre en évidence que l'existence de la* soft law *révélait une certaine situation politique de la société internationale de plus en plus éclatée et complexe, soumise aux accélérations de l'histoire, et ayant besoin d'instruments plus flexibles, susceptibles de donner une expression normative à des domaines où les sources traditionnelles s'avéraient inadaptées*." [A special effort was made to show that the existence of soft law bore witness to an increasingly more fragmented and complex political situation of international society subject to the speeding up of the historical process and requiring more flexible instruments capable of giving legislative expression to domains in which traditional sources are inadequate.]
56. IAEA (2009), "IAEA Safety Standards: Safety Assessment for Facilities and Activities", No. GSR Part 4, IAEA, Vienna, p. 10.
57. Boustany, K., supra note 30, p. 44.
58. See Daillier, P., and A. Pellet, supra note 13.
59. See on this point: Kueny, L., and E. Durand-Poudret, supra note 2, pp. 210-212.

welcomed, since it demonstrates the parties' determination and need to learn lessons from the accident.

The amendment approach – making the new safety objective mandatory – provided the best solution, but because of certain parties' refusal to adopt that approach, the Declaration seems to be an acceptable compromise.

Is it to be assumed, as the Autorité de Sûreté Nucléaire (ASN – French Nuclear Safety Authority) does, that the result of the Diplomatic Conference is likely to be a two-tier system between the European Union, where the safety requirements arising out of the Amendment of the Nuclear Safety Directive are more stringent and binding, and the other parties? The ASN takes the view that the result does not meet the challenges arising out of the Fukushima Daiichi accident.[60] The lasting contamination of land continues to be a major issue for Japan after the disaster, and regrettably the contracting parties have been unable to achieve this wider-ranging safety objective in a convention.

During the recent meeting of the Board of Governors of the IAEA in Vienna from 2 to 4 March 2015, six revised safety standards were adopted to reflect the knowledge gained from studying the Fukushima Daiichi accident. The Director-General also took the opportunity to confirm the transmission of the Vienna Declaration to the Commission referred to above.[61] Some four years after the accident, the adoption of the Vienna Declaration ultimately appears to be no more than an intermediate stage in the process of learning all the lessons from the disaster.

60. ASN (2015), "*Conférence diplomatique de la Convention sur la Sûreté Nucléaire: l'ASN estime que les résultats ne sont pas à la hauteur des enjeux et continuera de promouvoir les plus hauts standards de sûreté*" [Diplomatic Conference to the Convention on Nuclear Safety: the ASN believes the results are not up to the challenges and will continue to promote the highest safety standards], www.asn.fr/Informer/Actualites/CSN-l-ASN-estime-que-les-resultats-ne-sont-pas-a-la-hauteur-des-enjeux (accessed 30 March 2015).
61. IAEA (2014), "Introductory Statement to Board of Governors", www.iaea.org/newscenter/statements/introductory-statement-board-governors-62 (accessed 30 March 2015).

Nuclear arbitration: Interpreting non-proliferation agreements

By Peter Tzeng∗

Introduction

At the core of the nuclear non-proliferation regime lie international agreements. These agreements include, *inter alia*, the Nuclear Non-proliferation Treaty, nuclear co-operation agreements and nuclear export control agreements.[1] States, however, do not always comply with their obligations under these agreements. In response, commentators have proposed various enforcement mechanisms to promote compliance.[2] The inconvenient truth, however, is that states are generally unwilling to consent to enforcement mechanisms concerning issues as critical to national security as nuclear non-proliferation.[3]

This article suggests an alternative solution to the non-compliance problem: interpretation mechanisms. Although an interpretation mechanism does not have the teeth of an enforcement mechanism, it can induce compliance by providing an authoritative interpretation of a legal obligation. Interpretation mechanisms would help solve the non-compliance problem because, as this article shows, in many cases of alleged non-compliance with a non-proliferation agreement, the fundamental problem has been the lack of an authoritative interpretation of the agreement, not the lack of an enforcement mechanism.

Specifically, this article proposes arbitration as the proper interpretation mechanism for non-proliferation agreements. It advocates the establishment of a "Nuclear Arbitration Centre" as an independent branch of the International Atomic Energy Agency (IAEA), and recommends the gradual introduction of arbitration clauses into the texts of non-proliferation agreements.

Section I begins with a discussion of international agreements in general and the importance of interpretation and enforcement mechanisms. Section II then discusses nuclear non-proliferation agreements and their lack of interpretation and

∗ Peter Tzeng is a JD candidate at Yale Law School. He is Executive Editor of the *Yale Journal of International Law* and Editor of the *Yale Law Journal*. He graduated *summa cum laude* and Phi Beta Kappa from Princeton University, and has also studied in China, Kyrgyzstan and Egypt.

1. There are many other important non-proliferation agreements, such as nuclear test ban treaties, nuclear-weapon-free-zone treaties and nuclear safeguards agreements. This article, however, only focuses on the Nuclear Non-proliferation Treaty, nuclear co-operation agreements and nuclear export control agreements.
2. E.g. Goldschmidt, P. (2010), "Enforcing the NPT and IAEA Compliance", in Sokolski, H. (ed.), *Reviewing the Nuclear Non-proliferation Treaty*, Strategic Studies Institute, Carlisle, PA, United States, pp. 436-37; Gilinsky, V. and H. Sokolski (2014), "Serious Rules for Nuclear Power Without Proliferation", *The Nonproliferation Review*, Vol. 21, No. 1, Routledge, London, pp. 87-88; Sievert, R.J. (2010), "Working Toward a Legally Enforceable Nuclear Non-Proliferation Regime", *Fordham International Law Journal*, Vol. 34, No. 1, Fordham University, New York, pp. 102-03.
3. See Perkovich, G. and J. Acton (eds.) (2009), *Abolishing Nuclear Weapons: A Debate,* Carnegie Endowment for International Peace, Washington, DC, pp. 100-04.

enforcement mechanisms. Section III examines seven case studies of alleged non-compliance with non-proliferation agreements in order to show that the main problem in many cases of alleged non-compliance has been the lack of an interpretation mechanism rather than the lack of an enforcement mechanism. Section IV then presents the case for non-binding arbitration as the proper interpretation mechanism for non-proliferation agreements. Section V concludes the article by recommending practical steps for introducing arbitration clauses into non-proliferation agreements over the next decade.

I. International agreements

The doctrine of *pacta sunt servanda* ("agreements must be kept") is the cornerstone principle of international agreements.[4] In order to promote compliance, agreements may have an interpretation mechanism (specifying an interpretation authority) and/or an enforcement mechanism (specifying an enforcement authority). The interpretation authority interprets the text of the agreement, determines whether a party has breached the agreement and specifies the consequences of breach. The enforcement authority ensures, be it through force, sanctions or mere supervision, that the decisions made by the interpretation authority are complied with.

Agreements with high compliance rates often contain both an interpretation mechanism and an enforcement mechanism. For example, the European Convention on Human Rights (ECHR) establishes the European Court of Human Rights (ECtHR) as its interpretation authority,[5] and specifies the Committee of Ministers as its enforcement authority.[6] Similarly, the Treaty on the Functioning of the European Union (TFEU) designates the European Court of Justice (ECJ) as the interpretation authority for preliminary references, leaving national courts to be the enforcement authorities.[7] And in international commercial arbitration, the New York Convention recognises private arbitral tribunals as the interpretation authorities for contractual disputes, and expects national courts to be the enforcement authorities.[8] With the help of both interpretation and enforcement mechanisms, these agreements enjoy very high compliance rates.

Agreements with lower compliance rates may have an interpretation mechanism without an enforcement mechanism. For example, the International Covenant on Economic, Social and Cultural Rights (ICESCR) provides for the Economic and Social Council to interpret the ICESCR (a power that was subsequently delegated to the Committee on Economic, Social and Cultural Rights[9]), but does not provide for an enforcement mechanism.[10] Similarly, the International Covenant on Civil and Political Rights (ICCPR) establishes the Human Rights Committee as its

4. Dörr, O. and K. Schmalenbach (2012), *Vienna Convention on the Law of Treaties: A Commentary*, Springer, Heidelberg, p. 427; see Vienna Convention on the Law of Treaties (1969), 1155 UNTS 331 (hereinafter "VCLT"), art. 26.
5. Convention for the Protection of Human Rights and Fundamental Freedoms (1950), 213 UNTS 221, art. 19.
6. Ibid., art. 46.
7. Treaty on the Functioning of the European Union (2012), 2012 OJ C 326/01, art. 267; Albors-Llorens, A. (2014), "Judicial Protection Before the Court of Justice of the European Union", in C. Barnard and S. Peers (eds.), *European Union Law*, Oxford University Press, Oxford, pp. 284-92.
8. Convention on the Recognition and Enforcement of Foreign Arbitral Awards (1958), 330 UNTS 38.
9. ECOSOC Res. 1985/17, U.N. Doc. E/RES/1985/17 (1985).
10. International Covenant on Economic, Social and Cultural Rights (1966), 993 UNTS 3, Part IV.

interpretation authority, but does not envision a reliable enforcement mechanism.[11] Although the ICESCR and the ICCPR do not have enforcement mechanisms, they at least have bodies responsible for interpreting their provisions.

The difficulty of establishing an interpretation mechanism (and selecting an interpretation authority) cannot be understated, especially in international contexts. The authority must not only be impartial, but also be perceived to be impartial, such that the subjects of the regime would be willing to submit to its jurisdiction. The ECHR and the TFEU opted for interpretation authorities comprised of an equal number of individuals from each member state (i.e. the ECtHR and the ECJ). The ICESCR and the ICCPR, having too many state parties, opted for interpretation authorities whose members are re-elected on a regular basis (i.e. the Committee on Economic, Social and Cultural Rights and the Human Rights Committee). The New York Convention, facing too many cases, recognised private arbitral tribunals as their interpretation authorities.

Establishing an enforcement mechanism (and selecting an enforcement authority) is even more difficult. If the subjects of the regime are states, they must be willing to relinquish sovereignty over certain subject matters to the enforcement authority. Moreover, the enforcement authority must have actual enforcement power over the subjects.

In cases where it is not politically feasible to establish an enforcement mechanism, parties should at the very least try to establish an interpretation mechanism. This way, even if a state cannot be forced to comply with its legal obligations, at the very least the international community would know for certain whether the state is in compliance with its obligations or not. This authoritative determination of "right" and "wrong" can be crucial for incentivising states to comply with their legal obligations, even if there is no enforcement mechanism.

II. Nuclear non-proliferation agreements

As noted in the Introduction, nuclear non-proliferation agreements include, *inter alia*, the Nuclear Non-proliferation Treaty (Section II.A), nuclear co-operation agreements (Section II.B) and nuclear export control agreements (Section II.C). Unfortunately, all of these agreements lack interpretation and enforcement mechanisms.[12]

A. The Nuclear Non-proliferation Treaty

The Nuclear Non-proliferation Treaty (NPT)[13] is the centrepiece of the non-proliferation regime. Adopted in 1968, the NPT has three pillars: non-proliferation, disarmament and the peaceful use of nuclear energy. Under the non-proliferation pillar, the NPT restricts the possession of nuclear weapons to five states: China,

11. International Covenant on Civil and Political Rights (1966), 999 UNTS 171, part IV.
12. This is not to say that all non-proliferation agreements lack interpretation and enforcement mechanisms. In fact, many nuclear-weapon-free-zone treaties have such mechanisms. E.g. Treaty for the Prohibition of Nuclear Weapons in Latin America (1967), 634 UNTS 326, art. 24; Treaty on the Southeast Asia Nuclear Weapon-Free Zone (1995), 1981 UNTS 129, art. 21; Antarctic Treaty (1959), 402 UNTS 71, art. XI. In addition, modern comprehensive safeguards agreements also have interpretation and enforcement mechanisms. IAEA (1972), "The Structure and Content of Agreements Between the Agency and States Required in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons", IAEA Doc. INFCIRC/153 (Corrected), 1 June 1972, paras. 19, 22; Statute of the International Atomic Energy Agency (1956), 276 UNTS 3, art. XII(C).
13. Treaty on the Non-Proliferation of Nuclear Weapons (1968), 729 UNTS 161.

France, Russia, the United Kingdom and the United States ("nuclear weapon states"). All other states ("non-nuclear weapon states"), after becoming parties to the NPT, are prohibited from acquiring nuclear weapons[14] and are required to implement IAEA safeguards to verify their compliance with this prohibition.[15] Under the disarmament pillar, the NPT imposes an obligation on all state parties to pursue negotiations for the cessation of the nuclear arms race, nuclear disarmament and a treaty on "general and complete" disarmament.[16] Finally, under the nuclear energy pillar, the NPT affirms that all state parties have the "inalienable" right to develop nuclear energy for peaceful purposes, and moreover requires that all state parties facilitate "the fullest possible exchange" of nuclear materials and equipment for the peaceful use of nuclear energy.[17]

Today, almost all states in the world are state parties to the NPT.[18] Nevertheless, unlike the treaties of many other nuclear regimes,[19] the NPT has neither an interpretation mechanism nor an enforcement mechanism. The NPT does not grant any body the authority to interpret its provisions, determine whether a party has breached its provisions or specify the consequences of breach. Neither does it grant any body the power to ensure that obligations arising from its provisions are complied with.

B. Nuclear co-operation agreements

Nuclear co-operation agreements (NCAs) also play an important role in the non-proliferation regime. Since the early 1950s, nuclear supplier states have been signing bilateral NCAs with recipient states as a prerequisite to transferring nuclear material and equipment.[20] Recognising the dual-use nature of certain material and equipment, NCAs restrict the use of certain transferred items. For example, nearly all NCAs require that transferred nuclear material and equipment only be used for peaceful purposes, and NCAs governing the transfer of fuel for research reactors

14. Ibid., art. II.
15. Ibid., art. III.
16. Ibid., art. VI.
17. Ibid., art. IV.
18. Currently, 188 of the 193 member states of the United Nations are state parties to the NPT. The five member states of the United Nations that are not parties to the NPT are: India, Israel, North Korea, Pakistan and South Sudan. Note, however, that the status of North Korea is unclear. See infra Case Study 1 in Section III.A.
19. E.g. Convention on Early Notification of a Nuclear Accident (1986), 1439 UNTS 275, art. 11; Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986), 1457 UNTS 133, art. 13; Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (1997), 2153 UNTS 303, art. 38; Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (1998), 2161 UNTS 447, art. 16; Convention on Environmental Impact Assessment in a Transboundary Context (1991), 1989 UNTS 309, art. 15; Convention on the Physical Protection of Nuclear Material (1979), 1456 UNTS 101, art. 17; International Convention for the Suppression of Acts of Nuclear Terrorism (2005), 2445 UNTS 89, art. 23; Vienna Convention on Civil Liability for Nuclear Damage (1963), as amended by the Protocol of 12 September 1997, 1063 UNTS 1065, art. XX A; Convention on Supplementary Compensation for Nuclear Damage (1997), IAEA Doc. INFCIRC/567, art. XVI; Paris Convention on Third Party Liability in the Field of Nuclear Energy of 29 July 1960, as amended by the Additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982, 1519 UNTS 329, art. 17.
20. The first NCAs appeared as a result of the US Atomic Energy Act of 1954, which legalised the export of nuclear material and equipment, but only if the recipient state had an NCA in force with the United States. Today, NCAs with the United States are often called "123 Agreements" because they fall under Section 123 of the Atomic Energy Act of 1954.

generally require that the recipient state return the spent fuel to the supplier state. Like the NPT, NCAs generally do not have interpretation or enforcement mechanisms.[21]

C. Nuclear export control agreements

Nuclear export control agreements (NECAs) have also played an important, albeit more controversial, role in the non-proliferation regime. At an effort to meet the non-proliferation goals of the NPT, the Zangger Committee (a group of originally seven nuclear supplier states) began meeting in March 1971 to create and maintain a "trigger list" to define exactly what nuclear material and equipment would require safeguards when exported to non-nuclear weapon states.[22] Shortly after India's "peaceful nuclear explosion" in 1974,[23] US Secretary of State Henry Kissinger set up the Nuclear Suppliers Group (NSG) (also a group of originally seven nuclear supplier states) to strengthen export controls.[24] Since the 1970s, the Zangger Committee and the NSG have revised their export guidelines on multiple occasions,[25] and have also grown in size: the Zangger Committee now has 38 members,[26] and the NSG now has 48 members.[27] Not only do these export control agreements not have interpretation or enforcement mechanisms, but they themselves are not legally binding on their members.

III. Interpretation problems with nuclear non-proliferation agreements

Over the past 60 years, there have been many cases of alleged non-compliance with non-proliferation agreements. This Section examines seven such cases, all of which concerned the interpretation of one of the three aforementioned types of non-proliferation agreements: the Nuclear Non-proliferation Treaty (Section III.A), nuclear co-operation agreements (Section III.B) and nuclear export control agreements (Section III.C).

21. E.g. Agreement Between the Government of the Islamic Republic of Pakistan and the Government of the People's Republic of China for Cooperation in the Peaceful Uses of Nuclear Energy (1986), 1514 UNTS 8 (hereinafter "China-Pakistan 1986 NCA"); Agreement for Cooperation Between the Government of the United States of America and the Government of the Republic of Korea Concerning Civil Uses of Atomic Energy (1972), as amended on 15 May 1974, 953 UNTS 388 (hereinafter "South Korea-US 1974 NCA"); Agreement for Co-operation Between the Government of the United States of America and the Government of India Concerning the Civil Uses of Atomic Energy (1963), 488 UNTS 21 (hereinafter "India-US 1963 NCA").
22. Squassoni, S.A. (2005), "Proliferation Control Regimes: Background and Status", Congressional Research Service, Washington, DC, p. 18; Schmidt, F.W. (1994), "The Zangger Committee: Its History and Future Role", *The Nonproliferation Review*, Vol. 1, No. 1, Routledge, London, p. 38.
23. See infra Case Study 5 in Section III.B.
24. The NSG was originally called the London Group. The first seven members were: Canada, France, Japan, the Soviet Union, the United Kingdom, the United States and West Germany. Beckman, R.L. (1985), *Nuclear Nonproliferation: Congress and the Control of Peaceful Nuclear Activities*, Westview Press, Boulder, CO, United States, p. 231; Boulanger, W. (1978), "Nuclear Export Policy and Regulation for Non-Proliferation: Federal Republic of Germany", International Conference on Regulating Nuclear Energy, Brussels, Belgium, p. 13.
25. Nuclear Threat Initiative, "Zangger Committee (ZAC)", www.nti.org/treaties-and-regimes/zangger-committee-zac/ (accessed 4 April 2015); Arms Control Association (2012), "The Nuclear Suppliers Group (NSG) at a Glance", www.armscontrol.org/factsheets/NSG (accessed 4 April 2015).
26. Nuclear Threat Initiative, supra note 25.
27. Nuclear Suppliers Group, "Participants", www.nuclearsuppliersgroup.org/en/participants1 (accessed 4 April 2015).

A. The Nuclear Non-proliferation Treaty

State parties to the NPT have on many occasions been accused of not complying with their NPT obligations. As the case studies below show, these allegations of non-compliance have been with respect to all three of the NPT's pillars: non-proliferation (Case Studies 1 and 2), disarmament (Case Study 3) and the peaceful use of nuclear energy (Case Study 4).

Case Study 1: Did North Korea validly withdraw from the NPT under Article X(1)?

On 12 December 1985, North Korea acceded to the NPT in exchange for Soviet assistance in constructing four nuclear reactors.[28] North Korea subsequently signed the Joint Declaration on Denuclearisation of the Korean Peninsula with South Korea on 20 January 1992, and ratified an IAEA safeguards agreement on 9 April 1992. Nevertheless, early IAEA inspections revealed that Pyongyang had not been completely open about its plutonium reprocessing activities.[29] After IAEA inspectors were denied access to certain sites in North Korea, the IAEA Board of Governors (hereinafter "IAEA Board" or "Board") declared North Korea to be in non-compliance with its safeguards agreement, and referred the matter to the UN Security Council. In response, North Korea declared its intention to withdraw from the NPT under Article X(1).[30]

Article X(1) of the NPT grants state parties the right to withdraw from the treaty. Specifically, the provision states:

> Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.[31]

North Korea declared its intention to withdraw from the treaty on 14 March 1993.[32] As for the "extraordinary events" that "jeopardized the supreme interests of its country", Pyongyang pointed to American hostile threats to its security.[33] In an effort to prevent North Korea from following through on its intention to withdraw, Washington began intense bilateral negotiations with Pyongyang. Just one day before the date the withdrawal would come into effect, North Korea suspended its decision to withdraw.[34] Continued negotiations led to the bilateral Agreed Framework on 21 October 1994, which temporarily defused the crisis.

28. Bermudez, J.S. (1991), "North Korea's Nuclear Programme", *Jane's Intelligence Review*, Vol. 3, No. 9, IHS Global Ltd, Englewood, CO, United States, p. 409; Oberdorfer, D. (1997), The Two Koreas: A Contemporary History, Addison-Wesley, Reading, MA, United States, p. 254.
29. Richardson, S. (2006), *Perspectives on US Policy Toward North Korea: Stalemate or Checkmate?*, Lexington Books, Lanham, MD, United States, p. 3; Hibbs, M. (1993), "Isotopics Show Three North Korean Reprocessing Campaigns Since 1975", *Nuclear Fuel*, Vol. 18, No. 5, Platts, New York, pp. 8-9.
30. Oberdorfer, D., supra note 28, p. 280.
31. NPT, supra note 13, art. X(1).
32. Richardson, S., supra note 29, p. 3.
33. Kirgis, F.L. (2003), "North Korea's Withdrawal from the Nuclear Nonproliferation Treaty", *American Society of International Law Insights*, Vol. 8, No. 2, American Society of International Law, Washington, DC.
34. Arms Control Association (2015), "Chronology of U.S.-North Korean Nuclear and Missile Diplomacy", www.armscontrol.org/factsheets/dprkchron (accessed 15 May 2015).

The Agreed Framework suspended North Korea's plutonium programme, but North Korea pursued an alternative route to nuclear weapons: high-enriched uranium. After the United States discovered this programme and then confronted the North Koreans about it in 2002, Pyongyang acknowledged that it had a plan to produce nuclear weapons, but Pyongyang considered it to be part of its right to self-defence.[35] Washington, on the other hand, considered it to be a violation of North Korea's obligations under the NPT and under the Agreed Framework.[36]

On 10 January 2003, Pyongyang declared that it was withdrawing from the NPT, effective on the following day.[37] Pyongyang reasoned that since it was formally just lifting the 1993 suspension of its decision to withdraw, it only had to wait one more day for the entire three-month period to elapse.[38] Pyongyang notably also declared that its withdrawal from the NPT meant that it was no longer bound by its IAEA safeguards agreement,[39] as Article 26 of the agreement read: "This Agreement shall remain in force as long as the Democratic People's Republic of Korea is party to the [NPT]."[40] Many commentators expressly rejected North Korea's application of Article X(1): they believed that a new three-month withdrawal notice was required, and questioned whether North Korea's reasons for withdrawal met the "extraordinary events" and "supreme interests" requirements under the article.

Nevertheless, the IAEA Board did not expressly accept or reject North Korea's withdrawal. Why not? In the words of the IAEA, the Agency "is not in the position to determine the status of any State Party's membership of the Non-Proliferation Treaty."[41] In other words, the IAEA is not the interpretation authority of the NPT. Indeed, the NPT does not have an interpretation mechanism. Since the matter remained ambiguous, the IAEA proceeded as if North Korea's status had not changed: the IAEA Board declared on 12 February 2003 that North Korea was in non-compliance with its safeguards obligations and referred North Korea to the UN Security Council.[42]

As the world now knows, the North Korean nuclear crisis did not end there. However, this instance of withdrawal raises many legal questions. Did Pyongyang validly withdraw from the NPT under Article X(1)? Can a party pause and then resume the three-month notification period? In North Korea's case, were there "extraordinary events" that "jeopardized the supreme interests" of the state?[43]

35. Nuclear Threat Initiative (2014), "North Korea: Nuclear", www.nti.org/country-profiles/north-korea/nuclear/ (accessed 4 April 2015); US Department of State (2002), "North Korean Nuclear Program", http://2001-2009.state.gov/r/pa/prs/ps/2002/14432.htm (accessed 4 April 2015).
36. US Department of State, supra note 35.
37. UN Office for Disarmament Affairs, "Democratic People's Republic of Korea", http://disarmament.un.org/treaties/a/npt/democraticpeoplesrepublicofkorea/acc/Moscow (accessed 4 April 2015).
38. Arms Control Association, supra note 34.
39. Kirgis, F.L., supra note 33.
40. Ibid.
41. IAEA (2014), "Fact Sheet on DPRK Nuclear Safeguards", www.iaea.org/newscenter/focus/dprk/fact-sheet-on-dprk-nuclear-safeguards (accessed 4 April 2015).
42. IAEA (2003), IAEA Doc. GOV/2003/48, 12 February 2003.
43. Similar questions may be raised with regards to the US withdrawal from the Anti-Ballistic Missile Treaty in June 2002 under Article XV(2), a provision very similar to Article X(1) of the NPT. President Bush declared in December 2001 that September 11 was the "extraordinary event" that "jeopardized the supreme interests" of the United States. Arms Control Association (2002), "U.S. Withdrawal From the ABM Treaty: President Bush's Remarks and U.S. Diplomatic Notes", www.armscontrol.org/act/2002_01-02/docjanfeb02 (accessed 4 April 2015).

Ordinarily, the interpretation authority would have the jurisdiction to answer these questions. However, since the NPT does not have an interpretation authority, these questions remain unanswered to this very day. If the NPT had an interpretation mechanism to give a definitive answer to this question, then the issue would have a greater chance of being resolved. Instead, Pyongyang continues to assert that it has validly withdrawn from the NPT, while many western states continue to assert that North Korea is still bound by its obligations under the NPT. These divergent starting points have made non-proliferation negotiations with North Korea much less productive than they could otherwise be.

Case Study 2: Did North Korea's and Iran's alleged plans to develop nuclear weapons violate Article II of the NPT?

The North Korean case raises another legal question. As mentioned above, when North Korea's high-enriched uranium programme was discovered and Washington confronted the North Koreans about it in 2002, Pyongyang responded that it only had "plans" to produce nuclear weapons for self-defence, which it asserted did not violate the NPT.[44] Washington rejected this interpretation and declared North Korea to be in violation of the NPT.[45]

The same question emerged regarding the Iranian nuclear programme. In December 2007, the US National Intelligence Estimate concluded with "high confidence" that Iran (a state party to the NPT) had plans to develop nuclear weapons but halted the programme in 2003.[46] Does the mere existence of plans to develop nuclear weapons violate the NPT?

A textual examination of the NPT would answer this question in the negative. Article II of the NPT states:

> Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices.[47]

The text of Article II does not expressly prohibit plans to develop nuclear weapons. It only prohibits the receipt, manufacture and solicitation of assistance in the manufacture of nuclear weapons and nuclear explosive devices. Nevertheless, the customary principles of treaty interpretation, as enshrined in Articles 31 and 32 of the Vienna Convention on the Law of Treaties (VCLT),[48] allow one to look to, *inter alia*, the "object and purpose" of the treaty in question to determine its legal effects. Thus, one could therefore argue that a fundamental purpose of the NPT was

44. Nuclear Threat Initiative, supra note 35; US Department of State, supra note 35.
45. US Department of State, supra note 35.
46. US National Intelligence Council (2007), *Iran: Nuclear Intentions and Capabilities*, US Office of the Director of National Intelligence, Washington, DC, p. 5.
47. NPT, supra note 13, art. II.
48. The VCLT does not directly apply to the NPT because under Article 4 of the VCLT, the VCLT does not apply to treaties concluded before its entry into force, i.e. 27 January 1980. However, the International Court of Justice has held that Articles 31 and 32 of the VCLT are customary international law, and therefore necessarily apply to the interpretation of any treaty. Oil Platforms (Iran v. United States), Preliminary Objection, Judgments, ICJ Reports 1996, p. 803, para. 23.

to prevent the horizontal proliferation of nuclear weapons, and thus Article II of the NPT should be read to also prohibit plans to develop nuclear weapons.

What is the authoritative interpretation of Article II? There is none. Once again, the underlying problem is that the NPT does not have an interpretation mechanism. There is no single body that has the competence to consider both sides of the argument and make a final determination on the matter. Consequently, the question remains unanswered.

Case Study 3: Does the stockpile of nuclear weapons in Russia and the United States violate Article VI of the NPT?

On 24 April 2014, the Marshall Islands filed applications against China, France, India, Israel, North Korea, Pakistan, Russia, the United Kingdom and the United States before the International Court of Justice (ICJ) for not complying with their disarmament obligations under Article VI of the NPT.[49] Article VI states:

> Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.[50]

Two key respondent states are Russia and the United States; to this day both states still possess a disproportionately large number of nuclear weapons. The International Panel on Fissile Materials estimates that Russia still has approximately 8 500 nuclear warheads in its stockpile and the United States still has approximately 7 700 nuclear warheads in its stockpile.[51] Moreover, over the past two decades, Washington has at times acted contrary to the goals of "general and complete disarmament". For example, in 2002 it withdrew from the Anti-Ballistic Missile Treaty, and for many years it has refused to ratify the Comprehensive Nuclear-Test-Ban Treaty. On the other hand, Moscow and Washington have also taken some positive steps towards disarmament. For example, they have supported negotiations over a Fissile Material Cut-off Treaty, signed a long series of bilateral disarmament treaties, down blended significant amounts of their high-enriched uranium and announced that they would seek a "nuclear free world".[52] But do these activities amount to compliance with Article VI, especially in light of the outstanding stockpiles of nuclear weapons that remain under the control of Russia and the United States?

Regrettably, the question may never be officially answered. Since the ICJ is not the interpretation authority of the NPT, it does not have the jurisdiction to issue a ruling in the Marshall Islands case with respect to Russia or the United States

49. International Court of Justice (2014), "The Republic of the Marshall Islands files Applications against nine States for their alleged failure to fulfil their obligations with respect to the cessation of the nuclear arms race at an early date and to nuclear disarmament", www.icj-cij.org/presscom/files/0/18300.pdf (accessed 4 April 2015), p. 1.
50. NPT, supra note 13, art. VI.
51. International Panel on Fissile Materials (2013), *Global Fissile Material Report 2013*, International Panel on Fissile Materials, Princeton, p. 9.
52. The White House (2009), "Joint Statement by President Dmitriy Medvedev of the Russian Federation and President Barack Obama of the United States of America", www.whitehouse.gov/the_press_office/Joint-Statement-by-President-Dmitriy-Medvedev-of-the-Russian-Federation-and-President-Barack-Obama-of-the-United-States-of-America (accessed 4 April 2015).

without their consent.[53] Assuming that Russia and the United States will not consent to the ICJ's jurisdiction, it will remain a question whether the two states are pursuing negotiations in "good faith" for a treaty on "general and complete disarmament".[54] Russia and the United States will continue to claim that they are, while other states will continue to assert the opposite.

Case Study 4: Do the NSG guidelines violate Article IV of the NPT?

The drafters of the NPT had the difficult task of drawing a line between preventing the proliferation of nuclear weapons and promoting the peaceful use of nuclear energy. One major issue was that the nuclear material and equipment required for the peaceful use of nuclear energy may also be used to produce nuclear weapons. As a result, the NPT aimed to promote the exchange of nuclear material and equipment, but not so recklessly such that non-nuclear weapon states could take advantage of the exchange and develop nuclear weapons. At an effort to strike this balance, Article III(2) of the NPT states:

> Each State Party to the Treaty undertakes not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this Article.[55]

But what items are considered "equipment or material especially designed or prepared for the processing, use or production of special fissionable material"? In order to create a list of such items, nuclear supplier states established the Zangger Committee. Since the Zangger Committee was established for the mere purpose of interpreting this phrase in Article III(2) of the NPT, the Zangger Committee's list does not extend beyond this article.

The guidelines of the NSG, however, are another story. As mentioned in Section II.C, US Secretary of State Henry Kissinger established the NSG in 1974 in the wake of India's "peaceful nuclear explosion" in order to further restrict exports to non-nuclear weapon states that could lead to the development of nuclear weapons (as the Canadian heavy water reactor and the American heavy water did in the Indian case[56]). That is to say, not only does the NSG go beyond the limits of Article III(2), but it was actually established *for the purpose of* going beyond the limits of Article III(2). Two key differences between the Zangger Committee trigger list and the NSG guidelines are: (1) the Zangger Committee trigger list is restricted to "especially designed or prepared" items, whereas the NSG trigger list includes "dual-use" items, i.e. items that could potentially be used for both peaceful and non-peaceful purposes;[57] and (2) the NSG guidelines impose more demanding conditions of supply on recipient states, such as having a comprehensive safeguards agreement

53. The ICJ does, however, have jurisdiction over India, Pakistan and the United Kingdom because they have made declarations submitting themselves to the compulsory jurisdiction of the ICJ under Article 36(2) of the ICJ Statute. See Statute of the International Court of Justice (1945), 33 UNTS 993, art. 36(2).
54. NPT, supra note 13, art. VI.
55. Ibid., art. III(2).
56. See infra Case Study 5 in Section III.B.
57. IAEA (2013), "Guidelines for Transfers of Nuclear-related Dual-use Equipment, Materials, Software, and Related Technology", IAEA Doc. INFCIRC/254/Rev.9/Part 2, 13 November 2013.

in force.[58] Unsurprisingly, many non-nuclear weapon states, as well as commentators, have argued that the NSG is therefore in violation of Article IV of the NPT, which guarantees "the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes" and "the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy."[59]

Over time, the NSG has expanded both its trigger list and its conditions of supply. The NSG agreed on its first guidelines in 1977 and transmitted them to the IAEA in January 1978.[60] In 1992, the NSG introduced guidelines for dual-use items and adopted the requirement for comprehensive safeguards.[61] After the A.Q. Khan proliferation network came to light in 2004, President George W. Bush began pushing for an absolute ban on exporting enrichment and reprocessing (E&R) technologies to non-nuclear weapon states.[62] After signing an NCA with the United Arab Emirates (UAE) that prohibited the UAE from engaging in E&R activities on its territory,[63] Washington began to publicise the agreement as a "gold standard" NCA.[64] Nevertheless, virtually all other NSG members disapproved of this policy.[65] Still, the most recent version of the NSG guidelines, adopted in 2011, are more stringent than the last. They now impose specific conditions on exports of E&R technologies, such as having an Additional Protocol in force with the IAEA.[66]

Do the NSG guidelines, especially their most recent iteration, violate Article IV of the NPT? From one point of view, yes. Enrichment technology is a classic example of a dual-use item, but it is also often necessary for a state to develop a self-sufficient peaceful nuclear programme. At the same time, however, the NSG's guidelines restricting exports of dual-use technologies can also be seen as a genuine response to proliferation threats, namely the Indian "peaceful nuclear explosion" and the A.Q. Khan proliferation network. NSG members can argue that the NSG guidelines promote the "object and purpose" of the NPT, and therefore Article IV should be read

58. IAEA (2013), "Guidelines for Nuclear Transfers", IAEA Doc. INFCIRC/254/Rev.12/Part 1, 13 November 2013 (hereinafter "NSG Guidelines Part 1"), para. 4(a). India received a waiver from the comprehensive safeguards requirement on 6 September 2008. Nuclear Threat Initiative, "Nuclear Suppliers Group (NSG)", www.nti.org/treaties-and-regimes/nuclear-suppliers-group-nsg/ (accessed 4 April 2015).
59. NPT, supra note 13, art. IV; Hibbs, M. (2011), "New Global Rules for Sensitive Nuclear Trade", Carnegie Endowment for International Peace, http://carnegieendowment.org/2011/07/28/new-global-rules-for-sensitive-nuclear-trade (accessed 4 April 2015); Joyner, D. (2013), "Why Nuclear Supplier States are in Collective Breach of the NPT", Arms Control Law, http://armscontrollaw.com/2013/04/24/why-nuclear-supplier-states-are-in-collective-breach-of-the-npt/ (accessed 4 April 2015).
60. Nuclear Threat Initiative, supra note 58.
61. Ibid.
62. Hibbs, M., supra note 59.
63. Agreement for Cooperation Between the Government of the United States of America and the Government of the United Arab Emirates Concerning Peaceful Uses of Nuclear Energy (2009), http://old.armscontrolcenter.org/policy/nonproliferation/resources/us_uae_123_fulltext.pdf (accessed 4 April 2015), art. 7.
64. Arms Control Association (2013), "The U.S. Atomic Energy Act Section 123 at a Glance", www.armscontrol.org/factsheets/AEASection123 (accessed 4 April 2015).
65. Hibbs, M. (2011), supra note 59.
66. NSG Guidelines Part 1, supra note 58, para. 6(c); Viski, A. (2012), "The Revised Nuclear Suppliers Group Guidelines: A European Union Perspective", *Non-Proliferation Papers*, No. 15, EU Non-Proliferation Consortium, Brussels, p. 10; Hibbs, M., supra note 59; Horner, D. (2011), "NSG Revises Rules on Sensitive Exports", Arms Control Association, www.armscontrol.org/act/2011_%2007-08/Nuclear_Suppliers_Group_NSG_Revises_Rules_Sensitive_Exports (accessed 4 April 2015).

to not prohibit such guidelines. Once again, the problem is that the NPT does not have an interpretation authority to answer this legal question. In the absence of an interpretation mechanism, supplier states will continue to assert that the NSG guidelines do not violate the NPT, and non-supplier states will continue to assert that they do.

B. Nuclear co-operation agreements

NCAs also face their own set of compliance problems. As explained in Section II.B, before the NPT, NCAs served as one of the principal means of assuring that transferred nuclear material and equipment would not be used to further the production of nuclear weapons. A supplier state would transfer nuclear material and equipment to a recipient state, and the recipient state would usually promise not to use the material and equipment for the development of nuclear weapons. Nevertheless, since there was often no interpretation mechanism in these NCAs, the recipient state could provide its own interpretation of the NCA's provisions, leading to disputes such as those seen in Case Studies 5 and 6 below.

Case Study 5: Did India's "peaceful nuclear explosion" violate its nuclear co-operation agreements with Canada and the United States?

On 28 April 1956, Canada and India signed an NCA under which Canada was to deliver a heavy water reactor to India.[67] India subsequently obtained heavy water from the United States,[68] which was subject to an India-US NCA.[69] In both the Canada-India NCA and the India-US NCA, India agreed that it would not use the reactor or the heavy water for non-peaceful purposes.[70] Nevertheless, in 1974, India used the plutonium produced by the heavy water reactor to conduct its first nuclear explosion.[71]

To justify its actions, India interpreted the NCAs to only prohibit military nuclear explosions, not "peaceful nuclear explosions".[72] It stressed that the NPT itself acknowledges the existence of "peaceful applications of nuclear explosions".[73] At the time the NPT was negotiated, some scientists, for example, envisioned the application of nuclear explosions for large-scale construction projects.[74] Not everyone agreed with India's interpretation, however. Four years before India conducted its "peaceful nuclear explosion", it had asked Canada and the United States whether they would distinguish between a peaceful nuclear explosion and a nuclear weapons test, and they had answered in the negative.[75]

67. Agreement on the Canada-India Colombo Plan Atomic Reactor Project (1956), 1958 Indian Treaty Series 9 (hereinafter "Canada-India 1956 Agreement"); Martin, D. (1996), *Exporting Disaster: The Cost of Selling CANDU Reactors*, Campaign for Nuclear Phaseout, Ottawa, § 3.2.1.1; Keeley, J.F. (2009), *A List of Bilateral Civilian Nuclear Co-operation Agreements*, Vol. 2, University of Calgary, Calgary, p. 91.
68. Martin, D., supra note 67, § 3.2.1.1.
69. Keeley, J.F. (2009), *A List of Bilateral Civilian Nuclear Co-operation Agreements*, Vol. 3, University of Calgary, Calgary, p. 252; India-US 1963 NCA, supra note 21.
70. Canada-India 1956 Agreement, supra note 68; India-US 1963 NCA, supra note 21, art. VI; Perkovich, G. (2002), *India's Nuclear Bomb: The Impact on Global Proliferation*, University of California Press, Oakland, p. 27.
71. Martin, D., supra note 67, § 3.2.3.
72. Ibid.
73. NPT, supra note 13, art. V.
74. Ehrlich, R. (1985), *Waging Nuclear Peace: The Technology and Politics of Nuclear Weapons*, SUNY Press, Albany, NY, United States, p. 334.
75. Ibid.

India's "peaceful nuclear explosion" was undoubtedly an alarm to nuclear supplier states like Canada and the United States. But only four states – Pakistan, Canada, Japan and Sweden – publicly deplored the act.[76] Many developing states actually congratulated India on the explosion, expressing their support for the fact that a fellow developing state had joined the nuclear weapons club. These states were able to take this position without discrediting international law because India had put forth a plausible legal theory under which the "peaceful nuclear explosion" was perfectly consistent with its international obligations. Since there was no interpretation mechanism in the NCAs, there was never an authoritative determination on whether India's "peaceful nuclear explosion" violated the NCAs.

Case Study 6: Could South Korea engage in reprocessing under the 1974 South Korea-US nuclear co-operation agreement?

On 15 May 1974, Washington and Seoul signed an NCA for the transfer of power reactors from the United States to South Korea.[77] The NCA contained restrictions on reprocessing activities in South Korea, as reprocessing produces plutonium that can potentially be used to make nuclear weapons. Article VIII(C) of the NCA specified:

> When any special nuclear material received from the United States … requires reprocessing, or any irradiated fuel elements containing fuel material received from the United States … are to be removed from a reactor and are to be altered in form or content, such reprocessing or alteration shall be performed in facilities acceptable to both Parties upon a joint determination of the Parties that the provisions of article XI [on the requirement that any transferred material or equipment be used solely for civil purposes] may be effectively applied.[78]

In more practical terms, the NCA gave the United States a veto right over (1) the reprocessing of fissile material received from the United States; and (2) the reprocessing of irradiated fuel elements containing fissile material received from the United States. Nevertheless, commentators often generalise the provision by stating that Washington had a veto right over all reprocessing in South Korea,[79] or even that the NCA banned all reprocessing in South Korea.[80] Part of the confusion stems from the fact that as a matter of policy, Washington had not permitted South Korea to engage in reprocessing at all under the NCA.[81]

This issue reached the headlines over the last couple of years because Seoul and Washington were frantically trying to negotiate a new NCA before the NCA was set to expire in March 2014.[82] Over the course of negotiations, Seoul sought to lift the reprocessing ban, in line with US NCAs with the European Union, Japan, Switzerland

76. Ibid.
77. South Korea-US 1974 NCA, supra note 21. The 1974 NCA in reality only amended an NCA signed in 1972, which in turn superseded an NCA signed in 1956. Agreement for Cooperation Between the Government of the United States of America and the Government of the Republic of Korea Concerning Civil Uses of Atomic Energy (1972), 911 UNTS 36.
78. South Korea-US 1974 NCA, supra note 21, art. VIII(C).
79. E.g. Holt, M. (2013), *U.S. and South Korean Cooperation in the World Nuclear Energy Market: Major Policy Considerations*, Congressional Research Service, Washington, DC, p. 10.
80. E.g. Nuclear Threat Initiative, "South Korea: Overview", www.nti.org/country-profiles/south-korea/ (accessed 27 November 2014) ("Since 1974, South Korea is bound by a bilateral pact with the United States banning the reprocessing of spent nuclear fuel.").
81. Kang, J. and H.A. Feiveson (2001), "South Korea's Shifting and Controversial Interest in Spent Fuel Reprocessing", *The Nonproliferation Review*, Vol. 8, No. 1, Routledge, London, p. 70.
82. Keeley, J.F., supra note 69, p. 316; South Korea-US 1974 NCA, supra note 21, art. XV.

and, to a certain extent, India.[83] Washington, on the other hand, sought to extend the ban to all reprocessing in South Korea, in line with the US-UAE "gold standard" NCA.[84] The matter was so difficult that Seoul and Washington had to extend the 1974 NCA for another two years while negotiations continued.[85] They finally reached an agreement in April 2015.[86]

The questions surrounding the 1974 NCA may soon become moot, but there is no guarantee that similar questions could not arise under the new 2015 NCA or another NCA with similar language. To what extent was reprocessing actually allowed under the 1974 NCA? Could South Korea have pursued reprocessing if it had obtained the requisite material and equipment from a non-American source? The plain text of the NCA seemed to say yes, but once again, if one considers the "object and purpose" of the NCA and then takes into account the way Seoul and Washington treated the NCA over the course of their nuclear co-operation relationship,[87] there is a stronger case for saying that Seoul indeed could not have engaged in any reprocessing at all under the 1974 NCA. Unfortunately, the lack of an interpretation mechanism in the NCA meant that there was never an authoritative interpretation on the matter.

C. Nuclear export control agreements

Although not legally binding, NECAs have also faced significant compliance problems. As with the NPT and NCAs, the lack of an interpretation mechanism in NECAs has undermined their ability to achieve their non-proliferation objectives, as Case Study 7 shows.

Case Study 7: Do the new China-Pakistan reactor contracts fall under the NSG guidelines' grandfather clause?

Pakistan's nuclear co-operation with China has always been a matter of concern for non-proliferation proponents. Pakistan is not a party to the NPT, nor does it have a comprehensive safeguards agreement with the IAEA in force. Yet under the NPT, nuclear weapon states like China can still export nuclear material and technology to Pakistan for peaceful purposes, as long as there are limited-scope safeguards on the exports in question.[88] Indeed, China has been exporting nuclear equipment to Pakistan for decades.[89] In 1986, Beijing and Islamabad signed an NCA, Article II of which states: "the fields of co-operation between the two sides may include: … Design, construction

83. Von Hippel, F.N. (2010), "South Korean Reprocessing: An Unnecessary Threat to the Nonproliferation Regime", Arms Control Association, www.armscontrol.org/act/2010_03/VonHippel (accessed 4 April 2015).
84. See supra note 64 and accompanying text.
85. Qiang, H. (ed.) (2013), "S. Korea, U.S. to extend nuclear pact for 2 more years", *Xinhua English News*, 24 April 2013, http://news.xinhuanet.com/english/world/2013-04/24/c_132336968.htm (accessed 4 April 2015).
86. Gale, A. and J.S. Kwaak (2015), "U.S., South Korea Reach Revised Nuclear Deal", *The Wall Street Journal*, 22 April 2015.
87. Article 31(3)(b) of the Vienna Convention on the Law of Treaties provides that in interpreting treaty provisions, one shall take into account "[a]ny subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation". VCLT, supra note 4, art. 31(3)(b).
88. NPT, supra note 13, art. III(2).
89. Pant, H.V. (2013), "China-Pakistan nuclear axis defies nonproliferation aims", *The Japan Times*, 19 April 2013, www.japantimes.co.jp/opinion/2013/04/19/commentary/world-commentary/china-pakistan-nuclear-axis-defies-nonproliferation-aims/ (accessed 4 April 2015).

and operation of nuclear research and power reactors and associated facilities".[90] Subsequently, Beijing signed agreements to supply Pakistan with a nuclear reactor at Chashma on 31 December 1991 and a second nuclear reactor at Chashma on 4 May 2004.[91]

After years of negotiation, nuclear supplier states finally convinced China to join the NSG in June 2004.[92] As discussed in Case Study 4, the NSG guidelines require recipient states of exports from NSG members to have a comprehensive safeguards agreement in force (which Pakistan does not);[93] so, for a moment, states thought they had finally stopped China's nuclear exports to Pakistan.

Nevertheless, on 10 April 2005, Pakistani officials announced that China planned to construct an additional two reactors at Chashma.[94] NSG members, including the United States, responded that doing so would violate the NSG guidelines. The issue died down for a few years, only to resurface in April 2010, when reports confirmed that China would be going through with the two new reactors.[95] At the NSG annual meeting that year, various NSG members, including the United States, expressed concern about the reactors. Controversy arose again when Beijing secretly concluded an agreement to sell Pakistan a fifth reactor in February 2013, and then publicly confirmed it in March 2013.[96] In November 2013, Islamabad announced that China would be building a sixth reactor as well; the last two would be located in Karachi.[97] Then in 2014, it was reported that Beijing and Islamabad were conducting negotiations for another three reactors in Muzaffargarh.[98] Despite all of these transactions, Beijing has maintained that its co-operation with Pakistan "does not violate relevant principles of the Nuclear Suppliers Group"[99] because the nuclear reactor projects fall under the NSG guidelines' grandfather clause.[100]

90. China-Pakistan 1986 NCA, supra note 21, art. II.
91. Keeley, J.F., supra note 67, p. 115.
92. Lucas, S. (2004), "China Enters the Nuclear Suppliers Group: Positive Steps in the Global Campaign against Nuclear Weapons Proliferation", Nuclear Threat Initiative, www.nti.org/analysis/articles/china-enters-nuclear-suppliers-group/ (accessed 4 April 2015); PTI, "Secret deal with Pak on nuclear reactor violates China's international promise: US", *The Indian Express*, 23 March 2013, http://indianexpress.com/article/news-archive/print/secret-deal-with-pak-on-nuclear-reactor-violates-chinas-international-promise-us/ (accessed 4 April 2015).
93. NSG Guidelines Part 1, supra note 58, para. 4(a).
94. Balachandran, G. and K. Patil (2013), "China's Reactor Sale to Pakistan: The Known Unknowns", Institute for Defence Studies and Analyses, www.idsa.in/issuebrief/ChinasReactorSaletoPakistan_gbalachandran_151113.html (accessed 4 April 2015); Bokhari, F. (2005), "China and Pakistan in Deal on Reactors", *Financial Times*, 11 April 2005, www.ft.com/intl/cms/s/0/8fc4a58c-aa26-11d9-aa38-00000e2511c8.html (accessed 4 April 2015); Keeley, J.F., supra note 67, p. 115.
95. Nuclear Threat Initiative (2014), "Pakistan: Nuclear", www.nti.org/country-profiles/pakistan/nuclear/ (accessed 4 April 2015).
96. Pant, H.V., supra note 89; Pti, supra note 92.
97. Buckley, C. (2013), "Behind the Chinese-Pakistani Nuclear Deal", *The New York Times*, 27 November 2013, http://sinosphere.blogs.nytimes.com/2013/11/27/behind-the-chinese-pakistani-nuclear-deal/?_r=0 (accessed 4 April 2015); Hibbs, M., "China Provides Nuclear Reactors to Pakistan", *Jane's Intelligence Review*, 29 November 2013, IHS Global Ltd, Englewood, CO, United States.
98. Shah, S. (2014), "Pakistan in Talks to Acquire 3 Nuclear Plants From China", *The Wall Street Journal*, 20 January 2014.
99. Pant, H.V., supra note 89; Hibbs, M. (2013), "Chinese Chashma Poker Chip?", *Arms Control Wonk*, http://hibbs.armscontrolwonk.com/archive/1526/chinese-chashma-poker-chip (accessed 4 April 2015).
100. Hibbs, M., supra note 99.

The grandfather clause of the NSG guidelines states that the requirement of comprehensive safeguards does not apply to "agreements or contracts" predating the NSG's adoption of the comprehensive safeguards requirement (3 April 1992).[101] The clause, however, does not define what qualifies as "agreements or contracts". In light of this ambiguity, China has interpreted the phrase to encompass Article II of its 1986 NCA with Pakistan. As mentioned above, Article II merely specifies that power reactors fall within the "fields of co-operation" between China and Pakistan,[102] but China has invoked it as an "agreement[] or contract[]" to justify its continued export of nuclear reactors to Pakistan.[103] Whether such vague language in an NCA counts as an "agreement[] or contract[]" under the NSG grandfather exception is questionable: arguably, the exception refers to a concrete agreement or contract for purchase, not a general agreement to co-operate. Nevertheless, under China's interpretation, China's membership in the NSG could possibly never impede it from selling reactors to Pakistan, as under its terms the China-Pakistan NCA shall remain in force indefinitely unless either China or Pakistan decides to terminate it.[104]

In the end, the issue boils down to a legal question: do the new China-Pakistan reactor contracts fall under the NSG guidelines' grandfather clause? The lack of an interpretation mechanism leaves the question unanswered. Consequently, China will continue to sell reactors to Pakistan, and most NSG members will continue to accuse China of violating the NSG guidelines. Had the NSG guidelines contained an interpretation mechanism, at the very least this legal question could be authoritatively answered.

IV. Nuclear arbitration

These case studies are just a sample of the many legal uncertainties in non-proliferation agreements that remain unresolved to this day. Indeed, commentators have been criticising the effectiveness of non-proliferation agreements for many years.[105] One could even argue that the greatest successes of the non-proliferation regime (e.g. the fact that at most "only" nine states have nuclear weapons) owe not to the plethora of legal instruments, but rather to the heavy hand of politically powerful states, such as the United States.[106] Indeed, there is substantial evidence that the most effective non-proliferation measures are political, not legal.[107]

101. NSG Guidelines Part 1, supra note 58, para. 4(a).
102. See supra note 90 and accompanying text.
103. Balachandran, G. and K. Patil, supra note 94.
104. China-Pakistan 1986 NCA, supra note 21, art. XI(2).
105. E.g. Moodie, M. and A. Sands (2001), "New Approaches to Compliance with Arms Control and Nonproliferation Agreements", *The Nonproliferation Review*, Vol. 8, No. 1, Routledge, London, pp. 3, 7; Müller, H. (2000), "Compliance Politics: A Critical Analysis of Multilateral Arms Control Treaty Enforcement", *The Nonproliferation Review*, Vol. 7, No. 2, Routledge, London, p. 77-90; Bolton, J.R. (2004), "The NPT: A Crisis of Non-Compliance", US Department of State, http://2001-2009.state.gov/t/us/rm/31848.htm (accessed 4 April 2015); Miller, S.E. (2012), "Nuclear Collisions: Discord, Reform & the Nuclear Nonproliferation Regime", in Miller, S.E. et al. (eds.), *Nuclear Collisions: Discord, Reform and the Nuclear Nonproliferation Regime*, American Academy of Arts & Sciences, Cambridge, MA, United States.
106. See Tzeng, P. (2013), "Nuclear Leverage: US Intervention in Sensitive Technology Transfers in the 1970s", *The Nonproliferation Review*, Vol. 20, No. 3, Routledge, London.
107. See ibid.

Why have non-proliferation agreements been so problematic? Commentators appear to agree on one reason: the lack of enforcement mechanisms.[108] They argue that non-proliferation agreements like the NPT need to establish bodies that have the authority to enforce non-proliferation obligations.[109] The problem, however, is that states would likely never agree to enforcement mechanisms regarding matters as critical to national security as nuclear non-proliferation.[110]

The seven case studies above suggest an alternative solution: interpretation mechanisms. As seen in the case studies, the fundamental problem underlying issues of non-compliance has been the lack of an authoritative interpretation of the non-proliferation agreement in question, not the lack of enforcement. The allegations of non-compliance, though surrounded by political considerations, always boiled down to a legal question: whether or not a state had breached a provision in a non-proliferation agreement. Yet the question could not be authoritatively answered because of the lack of an interpretation mechanism. Therefore, interpretation mechanisms could possibly go a very long way in resolving at least some of the most pressing cases of non-compliance with nuclear non-proliferation agreements.

A. The benefits of interpretation mechanisms

At first glance, interpretation mechanisms might seem very weak: an interpretation without any guarantee of being enforced may not be very effective. Nevertheless, there are four principal benefits that come from an authoritative interpretation.

First, in cases where disputing states engage in good faith interpretations of their non-proliferation obligations but come to divergent conclusions, the authoritative interpretation would resolve the legal uncertainty. Despite what many states may say, many legal questions that arise from non-proliferation agreements do not have clear legal answers. There are plausible legal arguments that North Korea validly withdrew from the NPT under Article X(1); that merely planning to develop nuclear weapons does not violate Article II of the NPT; that Russia's and the United States' nuclear stockpiles do not violate Article VI of the NPT; that the NSG guidelines do not violate Article IV of the NPT; that India's "peaceful nuclear explosion" did not violate its NCAs; that South Korea can engage in reprocessing under the South Korea-US NCA; and that the new China-Pakistan reactor contracts fall under the NSG guidelines' grandfather clause. There are also credible legal arguments to the contrary. Given that genuine legal disputes can arise over the interpretation of non-proliferation agreements, an authoritative interpretation from an impartial body could resolve legal ambiguities and even settle entire disputes.

Second, in cases where disputing states engage in self-serving interpretations of their non-proliferation obligations, the authoritative interpretation would officially declare who is "correct". At the moment, non-complying states can (and do) give completely implausible interpretations of their non-proliferation obligations without

108. Gilinsky, V. and H. Sokolski, supra note 2, p. 79; Mohan, C.R. (2012), "Living with an Imperfect NPT", in Miller, S.E. et al. (eds.), *Nuclear Collisions: Discord, Reform & the Nuclear Nonproliferation Regime*, American Academy of Arts & Sciences, Cambridge, MA, United States; Moodie, M. and A. Sands, supra note 105, pp. 3, 7; Brauer, J. and K. Hartley (2000), *The Economics of Regional Security: NATO, the Mediterranean and Southern Africa*, Harwood Academic Publishers, Amsterdam, p. 82; du Preez, J. (2005), "The 2005 NPT Review Conference: Can It Meet the Nuclear Challenge?", Arms Control Association, www.armscontrol.org/act/2005_04/duPreez (accessed 4 April 2015); Skinner, DC (2005), "Q&A: The Nuclear Nonproliferation Treaty", *The Wall Street Journal*, 9 June 2005.
109. See supra note 2.
110. See supra note 3.

any retribution. Moreover, they often garner support from their political allies, transforming the legal question of non-compliance into a political issue. The existence of an authoritative interpretation, however, would publicise the implausibility of weak legal arguments, and thereby encourage states, at least on some occasions, to admit their non-compliance. Moreover, non-complying states would have a much more difficult time trying to gain the support of third party states if an official interpretation authority found that the state had breached a non-proliferation obligation. Currently, given that there is often no authoritative determination on whether a state has breached a non-proliferation obligation or not; third party states are able to support non-complying states without risking their reputation as international law-abiding states. But if there were an authoritative interpretation, third party states would think twice about supporting behaviour declared to be in violation of international law.

Third, the authoritative interpretation would help prevent recurrent violations of non-proliferation obligations. Regardless of whether a state intends to provide a good faith or self-serving interpretation of a non-proliferation obligation, if an interpretation authority has previously held a certain action to be in violation of that obligation, then the state would be less likely to take the same action. In the absence of this precedent, states would not be discouraged from relying on the same misleading interpretations – no matter how implausible – of past non-compliant states, leading to a recurring cycle of non-compliant behaviour.

Fourth, in cases where a government leader takes a hard stance on a non-proliferation issue to satisfy an audience back home, an adverse authoritative interpretation by a third party decision maker would provide a strong "excuse" for the leader to give in. Commentators have noted that this phenomenon occurs regularly in public international law disputes: government leaders often refuse to concede very much in disputes with other states because they would receive significant criticism from their domestic constituencies, but if a neutral third party orders the concessions, then the leaders are often more than happy to comply, as they would not be perceived by their own people as having intentionally conceded anything. It is difficult to say whether non-proliferation disputes fall perfectly within this paradigm, but there is every reason to believe that states like Iran and the United States often take strong stances in international negotiations at least partly out of a desire to appease certain factions of their populations back home.

For these four reasons, interpretation mechanisms could be a very useful tool for resolving cases of non-compliance, even without enforcement mechanisms.

B. The case for nuclear arbitration

As explained in Section I, interpretation authorities come in all shapes and sizes. The ECHR and the TFEU established interpretation authorities consisting of one member from each member state. The ICESCR and the ICCPR established bodies consisting of rotating members as their interpretation authorities. And the New York Convention allowed private arbitral tribunals to serve as interpretation authorities. In the end, what's important is that the interpretation authority is impartial and has the appearance of being impartial, so that states are willing to submit to its jurisdiction.

Who should have the authority to interpret the NPT, NCAs and NECAs? Perhaps the first candidate that comes to mind is the IAEA Board; after all, the IAEA Board already serves as the interpretation authority for IAEA comprehensive safeguards

agreements.[111] Nevertheless, there are two main reasons why the IAEA Board's interpretation jurisdiction should *not* be extended to other non-proliferation agreements.

First, the IAEA Board is by its nature political: it is a geographically representative body that makes high-level decisions regarding IAEA policy. Just as legal disputes in domestic legal systems are resolved by courts rather than legislatures, an independent body free of broader policy considerations should be entrusted with deciding disputes over purely legal questions, such as whether or not a state is in compliance with a non-proliferation agreement. Second, the fact that the IAEA Board is a permanent body means that it has a lot of history: some states may have – justifiably or not – developed certain dispositions towards or impressions of the Board because of the Board's past policy decisions, jeopardising the Board's reputation as an impartial adjudicatory institution.

A promising alternative is arbitration. Arbitration is a method of dispute resolution that avoids the partiality of national courts and the political nature of international organisations. Arbitration has become the primary means for dispute resolution in international commerce. When a company from State A enters into a contract with a company from State B, they typically stipulate in their contract that if a dispute arises from the contract, they will not go to the (potentially biased) national courts of State A, the (potentially biased) national courts of State B or a (potentially politicised) international organisation. Rather, they will form an ad hoc arbitral tribunal to settle their dispute. In most cases, each party has the right to appoint one arbitrator, and the two party-appointed arbitrators appoint the third arbitrator, who presides as Chair. These three arbitrators constitute the arbitral tribunal, which hears the case and issues a final judgement called an "award".

States have used arbitration to resolve disputes over sensitive matters for centuries. For example, land and maritime boundary disputes between states are often resolved through arbitration, and investment disputes that touch on the state's fundamental regulatory powers regularly go to arbitration. In addition, many trade and intellectual property disputes end up being resolved in arbitration. Despite its ad hoc nature, arbitration has earned the trust of states to resolve the most critical legal disputes of the century.[112]

Why do states rely so much on arbitration, as opposed to a permanent adjudicatory body? The reasons are manifold, but at least some are worth discussing here. First, in an arbitration, the disputing parties have a stronger voice in the resolution of the dispute. In most cases, the parties participate in the selection of the arbitrators by selecting at least one arbitrator on their own. Therefore, the parties are assured that their arguments, even if publicly unpopular, will be considered. Second, there is a stronger guarantee that the decision-making body (the arbitral tribunal) will be impartial. Since the parties can each appoint an arbitrator, they do not need to fear that the tribunal will "happen to be" composed of biased individuals. Third, the parties are able to appoint arbitrators with the appropriate level of expertise. Therefore, the parties have greater assurance that their arguments, even if esoteric, will likely be understood. Fourth, there is greater flexibility in arbitration. The arbitral tribunal is not constrained by the procedural rules of national courts or international organisations. The tribunal can adopt the procedural rules most appropriate for the dispute at hand. It can also resolve the

111. See supra note 12.

112. Many states have questioned the legitimacy of arbitration for resolving investment disputes, but even arbitral awards in such disputes are widely complied with. In any case, arbitration is undoubtedly a popular mechanism for resolving other inter-state disputes.

dispute on a timeline most suitable for the parties; if the dispute is an emergency, for example, the tribunal could set a tighter timeline. Fifth, and finally, there is the option of confidentiality: disputes before arbitral tribunals can be kept completely (or partially) secret, for better or for worse.

All of these reasons are very much applicable to the arbitration of disputes arising from non-proliferation agreements. First, having a greater voice in the arbitration is particularly important for states such as Iran, North Korea and the United States that might feel that their perspectives on non-proliferation are not widely shared. By appointing an arbitrator, they can be sure that their perspectives are taken into consideration by the tribunal. Second, the fact that the arbitral tribunal is not a permanent body with a history and future of political decision-making would provide a guarantee of impartiality. The tribunal would be constituted solely for the dispute at hand, and would be dissolved after the dispute ends. Consequently, the parties can trust that the tribunal would resolve the dispute in a manner independent from outside considerations. Third, the interpretation of specific non-proliferation agreements may require a high degree of expertise. The ability of the parties to appoint arbitrators would allow them to choose specialists who have dedicated their careers to studying a particular legal issue, or even drafters of the non-proliferation agreement in question who would best understand the purposes and principles behind the agreement's text. Fourth, the flexibility permitted in arbitration would be particularly useful in non-proliferation disputes because the timeline for certain proliferation risks can be relatively short (e.g. enriching uranium to weapons-grade levels). Fifth, the option of confidentiality could be extremely helpful in settling certain non-proliferation disputes. States often take hard stances because they do not want to appear as politically weak before their own public or the world community. By allowing the resolution of non-proliferation disputes to be confidential, states could be more willing to come to mutually acceptable agreements. Moreover, some disputes may involve the presentation of confidential intelligence information that the proffering state may not want to become public. Allowing the arbitration to be kept confidential would confine knowledge of such information to the parties and the arbitrators.

In conclusion, arbitration is a promising interpretation mechanism for disputes arising from non-proliferation agreements. But how would it look in practice?

C. What would nuclear arbitration look like?

Arbitration comes in all shapes and sizes. First, arbitration can be institutional or ad hoc. Second, arbitration can be binding or non-binding. Third, arbitration can arise from pre-dispute or post-dispute arbitration agreements.

Institutional or ad hoc?

Arbitration can be institutional or ad hoc. Institutional arbitration is conducted under the auspices of an arbitral institution (e.g. the Permanent Court of Arbitration). Ad hoc arbitration is conducted completely in private: the parties agree to abide by whatever rules they choose.

The arbitration of disputes arising from non-proliferation agreements should be institutional, so that there is some legitimacy to the process. The arbitral institution could be called the "Nuclear Arbitration Centre" (NAC) and could be an independent branch of the IAEA. The NAC secretariat would have two responsibilities: (1) maintaining and updating the NAC Arbitration Rules; and (2) handling the purely procedural matters of each arbitration (e.g. forwarding documents and organising files). To be clear, the Nuclear Arbitration Centre would not play any role in deciding disputes; only the members of party-appointed arbitral tribunals would be responsible for examining the merits of disputes.

Binding or non-binding?

Arbitration can also be binding or non-binding. Under binding arbitration, there is often a corresponding enforcement mechanism that forces the parties to comply with the arbitral award. Under non-binding arbitration, the final arbitral award is not necessarily enforceable against the parties, but it is still an authoritative determination on the matter.

The arbitration of disputes arising from non-proliferation agreements should be non-binding, as the arbitration would serve as a mere interpretation mechanism, not an enforcement mechanism. Introducing binding arbitration into non-proliferation agreements may be ideal, but, as mentioned in the Introduction, states would likely not agree to such infringements on its sovereignty for national security reasons.[113] Non-binding arbitration (as purely an interpretation mechanism), however, would face much less opposition, as states would not be relinquishing any sovereignty and they would not be forced to comply with the arbitral award.

Pre-dispute or post-dispute arbitration agreements?

Arbitration is based on consent, and therefore any arbitral proceeding requires an arbitration agreement. That is, the parties must agree to submit the dispute in question to arbitration. The arbitration agreement can be a pre-dispute agreement (a specific clause located in the underlying agreement) or a post-dispute agreement (a separate agreement concluded after the dispute arises).

For the arbitration of disputes arising from non-proliferation agreements, it would be best to include a pre-dispute arbitration clause in the underlying agreement so as to force the disputing parties to arbitrate any disputes arising from the interpretation or application of the agreement. The clause could look like this:

> All disputes arising from the interpretation or application of any of the provisions in the present agreement shall be finally settled under the Rules of Arbitration of the Nuclear Arbitration Centre by three arbitrators. Each party shall have the right to appoint one arbitrator. The two party-appointed arbitrators shall then jointly appoint the third arbitrator, who shall preside as Chair of the tribunal.

Consequently, once a dispute arises over the interpretation of a provision in the non-proliferation agreement, the parties would be forced to appoint an arbitral tribunal and forward the case to the tribunal. The tribunal would then – after having solicited and heard arguments from the parties – render an arbitral award on the matter. The award would interpret the relevant provisions of the agreement, determine whether the agreement was breached and (if applicable) specify the consequences of the breach. Since the arbitration would be non-binding, the award would not be enforceable. However, it would be authoritative.

D. Why would states agree to nuclear arbitration?

Proposals are productive only if they are politically feasible. In the sensitive field of nuclear non-proliferation, it is difficult to present a proposal that would be accepted by all parties, especially as most proposals favour one faction over another. Indeed, one can – as a matter of gross simplification – identify two factions in the field of nuclear non-proliferation: the "non-proliferation faction" (led by the United States) supports horizontal non-proliferation at the expense of the peaceful use of nuclear energy, while the "nuclear energy faction" (led by Iran, Egypt and the Non-Aligned

113. See supra note 3.

Movement) supports the peaceful use of nuclear energy at the expense of risks of horizontal proliferation. Although it is often very difficult for a proposal to satisfy both factions, introducing arbitration as an interpretation mechanism could do so, especially as it is a procedural proposal, not a substantive one. Reasons why both factions would likely accept arbitration as an interpretation mechanism include the following.

First and foremost, it should be noted that the law – i.e. the texts of the various non-proliferation agreements that have given rise to cases of alleged non-compliance – does not favour one faction over the other. Among the cases examined in Section III, in some the law seems to be on the side of the non-proliferation faction, whereas in others the law seems to be on the side of the nuclear energy faction. Consequently, the only clear winner of establishing arbitration as the interpretation mechanism would be the rule of law.

Second, arbitration would save costs for both factions. The amount of time and resources that states from both factions have put into arguing that their legal interpretations are correct have been substantial. By allowing a private, impartial tribunal to render a final determination on such issues, states in both factions would be able to focus more of their time and energy on more productive matters.

Third, states would not be giving up any sovereignty because NAC arbitral awards would not be legally binding. Consequently, states could still resist complying with their non-proliferation obligations in cases where they find it absolutely necessary, such as if their national security interests are at stake.

V. Practical steps

Nuclear arbitration looks good on paper. How could it be implemented? Establishing a Nuclear Arbitration Centre under the auspices of the IAEA would be neither costly nor difficult. The most difficult part of implementing nuclear arbitration is having states actually include arbitration clauses within their non-proliferation agreements.

Although the NPT is the non-proliferation agreement that needs an interpretation mechanism the most, it would be extremely difficult for the treaty to be amended. Similarly, the multilateral nature of NECAs make them difficult to amend as well. The most practical starting point, then, is NCAs: states should begin amending their NCAs to include NAC arbitration clauses, and should begin including NAC arbitration clauses in their new NCAs.

The United States could be the leader in this endeavour. At the moment, Washington is negotiating and renegotiating many NCAs. The US-Vietnam NCA and the US-Taiwan NCA were renewed just last year;[114] the US-South Korea NCA was signed this year;[115] and US NCAs with China,[116] Japan,[117] Jordan,[118] Norway,[119]

114. Kerr, P.K. and M.B.D. Nikitin (2014), *Nuclear Cooperation with Other Countries: A Primer*, Congressional Research Service, Washington, DC, pp. 9-11.
115. Gale, A. and J.S. Kwaak, supra note 86.
116. Kerr, P.K. and M.B.D. Nikitin, supra note 114, p. 13.
117. Ibid., p. 7.
118. Kane, C. (2012), "US Nuclear Cooperation Agreements and the Middle East", Arms Control and Regional Security for the Middle East, www.middleeast-armscontrol.com/2012/08/03/us-nuclear-cooperation-agreements-and-the-middle-east/ (accessed 1 March 2015).
119. Kerr, P.K. and M.B.D. Nikitin, supra note 114, p. 14.

Saudi Arabia[120] and Thailand[121] are in the pipeline. In addition, the United States has many other NCAs in force that are open to amendment.[122] Many senators in Congress have been pushing for strong non-proliferation guarantees in their nuclear transfers, especially after the 2008 US-India NCA.[123] The inclusion of arbitration clauses could be one such measure of achieving this objective.

France could also play a leadership role, as it has recently signed some new NCAs at an effort to expand the market for its nuclear exports, such as with Saudi Arabia[124] and South Africa.[125] China[126] and Russia[127] have also recently expanded their exports, and are looking to sign new NCAs with states looking to develop nuclear power. Indeed, on the whole, many new states are interested in developing nuclear energy for peaceful purposes, such as Jordan, Saudi Arabia, Thailand, the UAE and Vietnam. New NCAs between supplier states and these nuclear newcomer states will need to be signed, and so opportunities to introduce NAC arbitration clauses into NCAs abound.

Including NAC arbitration clauses into new NCAs should be in the interest of all parties. While the situation may be different for the NPT, all parties to NCAs are generally interested in the complete compliance with all provisions of their NCAs, especially the non-proliferation provisions. It is widely believed that all of the nuclear newcomer states are genuinely seeking to develop purely peaceful nuclear programmes, which was not necessarily the case in the 1970s.[128] Moreover, no matter how meticulous the drafters of the NCAs are, all parties would agree that there will always be ambiguous terminology that needs to be interpreted by an impartial authority. For example, there has been some controversy over whether the reprocessing restrictions in many of the US NCAs (e.g. the South Korea-US NCA) includes pyro processing.[129] Including NAC arbitration clauses in NCAs would particularly be in the interest of supplier states like China and France that are eager to increase their nuclear exports, but also want to maintain a pro-non-proliferation image.

120. Sayler, K. (2011), "The Wisdom of a U.S.-Saudi Arabia 123 Agreement?", Center for Strategic & International Studies, http://csis.org/blog/wisdom-us-saudi-arabia-123-agreement (accessed 4 April 2015).
121. Kerr, P.K. and M.B.D. Nikitin, supra note 114, p. 15.
122. Ibid., pp. 13-15.
123. Ibid., pp. 8-9.
124. Golla, M. (2011), "*Nucléaire : Paris et Ryad ont signé un accord*" [Nuclear: Paris and Riyadh have signed an agreement], *Le Figaro*, 22 February 2011, www.lefigaro.fr/societes/2011/02/22/04015-20110222ARTFIG00426-nucleaire-francais-les-projets-se-precisent.php (accessed 4 April 2015).
125. *Le Soir* (2014), "*Afrique du Sud: Zuma autorise un accord de coopération nucléaire avec la France*" [South Africa : Zuma authorises a nuclear co-operation agreement with France], 10 October 2014, www.lesoir.be/677014/article/actualite/fil-info/fil-info-monde/2014-10-10/afrique-du-sud-zuma-autorise-un-accord-cooperation-nucleaire-avec-fr (accessed 4 April 2015).
126. World Nuclear News (2014), "China, South Africa extend nuclear cooperation", 10 November 2014, www.world-nuclear-news.org/NP-China-South-Africa-extend-nuclear-cooperation-1011144.html (accessed 4 April 2015).
127. Crail, P. (2009), "Russia, India Ink Nuke Cooperation Deal", Arms Control Association, www.armscontrol.org/act/2009_01-02/russiaindiacoop (accessed 4 April 2015); Agreement Between the Government of Australia and the Government of the Russian Federation on Cooperation in the Use of Nuclear Energy for Peaceful Purposes (2007), 2814 UNTS I-49368; World Nuclear News, supra note 126.
128. See Tzeng, P., supra note 106.
129. Weiner, S. (2012), "Reaching an Agreement on South Korean Pyroprocessing", Center for Strategic & International Studies, http://csis.org/blog/reaching-agreement-south-korean-pyroprocessing (accessed 4 April 2015).

After a critical mass of bilateral NCAs contain NAC arbitration clauses, the next step would be to include NAC arbitration clauses in the NECAs: the Zangger Committee trigger list and the NSG guidelines. Again, the member states of these groups should be interested in NAC arbitration clauses, as they would provide a non-political means of interpreting the export controls (e.g. whether a certain piece of new technology falls under the relevant trigger list). If the member states feel that NAC arbitrations lead to undesirable results, they can always edit their trigger lists and guidelines at their next plenary meeting. The NAC arbitrations, however, would still be useful in providing an impartial analysis of the trigger lists and guidelines in their current states, so as to provide for their consistent and reasonable application.

The final goal would be to include a NAC arbitration clause in the NPT. This would, however, require significant political support, as the treaty would have to be amended.

Instituting NAC arbitration may not have a noticeable impact for a few decades. What's important, though, is that the international community would be moving in the right direction. Universal compliance with nuclear non-proliferation agreements may be a lofty goal, but instituting NAC arbitration would be a significant first step.

Case law

Slovak Republic

Further developments in cases related to the challenge by Greenpeace Slovakia to the Mochovce nuclear power plant

There are four ongoing trials in the courts of the Slovak Republic that have been discussed in the last three issues of the *Nuclear Law Bulletin*.[1] The most recent updates are provided below.

On 27 September 2013, Slovenske elektrarne, the builder of the Mochovce nuclear power plant (NPP) units 3 and 4, submitted a constitutional claim to the Slovak Constitutional Court objecting to the denial of its basic rights and freedoms by the Supreme Court judgement in the Mochovce 3 and 4 court proceeding. Slovenske elektrarne brought the constitutional claim because it was not afforded an opportunity to participate in the trial, yet Slovenske elektrarne's rights were directly affected by the Supreme Court judgement.

On 28 October 20014, the Constitutional Court declared it to be a breach of the licensee's (Slovenske elektrarne) right to be a participant in the Supreme Court proceeding. But, due to the already existing second instance administrative decision issued by the Slovak Nuclear Regulatory Authority (NRA) in favour of Slovenske elektrarne (see below regarding NRA decision No. 291/2014), it was not necessary to cancel the judgement of the Supreme Court and send the decision back for a new judicial procedure.

Separately, Greenpeace Slovakia's appeal of NRA decision No. 761/2013[2] was considered together with Greenpeace Slovakia's appeal of NRA decision No. 247/2008.[3] The NRA held a public hearing on 27 February 2014 and on 23 May 2014, the NRA issued decision No. 291/2014, dismissing Greenpeace Slovakia's appeal of decision No. 246/2008, and at the same time confirming decision No. 246/2008. Upon entry into force on 30 May 2014, this decision closed Greenpeace Slovakia's claims.

Thereafter, the NRA informed the Regional Court of Bratislava (the court of first instance review of administrative decisions) about the Constitutional Court decision (above), as well as about the existing valid second instance NRA decision (No. 291/2014). When the court asked Greenpeace Slovakia for their final statement prior to the adoption of the court decision, Greenpeace Slovakia withdrew its claim and the court ceased the proceedings on the 11 March 2015.

1. For key background information on the litigation initiated by Greenpeace Slovakia, please see *Nuclear Law Bulletin*, No. 92, NEA, Paris, p. 89; *Nuclear Law Bulletin*, No. 93, NEA, Paris, p. 91; and *Nuclear Law Bulletin*, No. 94, NEA, Paris, pp. 116-117.
2. NRA administrative decision No. 761/2013 (21 August 2013) denied the suspensory effect of Greenpeace Slovakia's appeal of NRA decision No. 246/2008 (see infra note 3).
3. NRA administrative decision No. 246/2008 (14 August 2008) approved modifications to construction prior to the completion of Mochovce NPP units 3 and 4. These modifications were requested by Slovenske elektrarne.

United States

Judgment of the Nuclear Regulatory Commission denying requests from petitioners to suspend final reactor licensing decisions pending the issuance of a final determination of reasonable assurance of permanent disposal of spent fuel

On 26 February 2015, the US Nuclear Regulatory Commission (NRC) denied petitions and motions filed by several environmental groups (petitioners) requesting that the NRC suspend final reactor licensing decisions until the NRC made a "reasonable assurance" finding regarding the technical feasibility of spent fuel disposal in a repository (a "waste confidence safety decision").[4] In denying the petition and motions, the NRC reaffirmed its interpretation of the Atomic Energy Act of 1954, as amended (AEA), holding that the AEA does not require the NRC to make definitive findings that a repository for spent fuel disposal is technically feasible before issuing initial or renewed licenses for nuclear power plants.

The petitions were submitted in response to the NRC's publication of a final rule and companion generic environmental impact statement (GEIS) that addressed the safe storage of spent nuclear fuel beyond a reactor's license term. Commonly called the "Continued Storage Rule" and "Continued Storage GEIS", the documents were published in September 2014. These documents replaced the NRC's previous rule and generic analysis, known as the "Temporary Storage Rule" and "Waste Confidence Decision". The Continued Storage Rule and Continued Storage GEIS, like the Waste Confidence Decision and Temporary Storage Rule before them, generically satisfy part of the NRC's National Environmental Policy Act (NEPA) obligations to assess the environmental impacts of storing spent nuclear fuel after the end of a reactor's license term pending disposal in a deep geologic repository. The Waste Confidence Decision also included five "reasonable assurance" findings that, among other things, included statements regarding the technical feasibility of a deep geologic repository and the safe storage of spent fuel pending disposal.

The Temporary Storage Rule and Waste Confidence Decision were overturned by the US Court of Appeals for the DC Circuit in June 2012, which held that the rule and decision did not satisfy the agency's obligations under the NEPA.[5] In response, the Commission suspended all final licensing decisions that relied on the Temporary Storage Rule and directed the NRC staff to address the issues raised by the court[6] – these issues included a more robust analysis of the environmental impacts of spent fuel pool leaks and fires, along with a consideration of the impacts that would result in the event that a deep geologic repository never becomes available – a scenario that the NRC had not previously evaluated. The result of this effort was the development of the Continued Storage Rule and GEIS. The Continued Storage Rule and GEIS include analyses of spent fuel pool leaks and fires; they also provide a generic analysis of the environmental impacts of spent fuel storage over three time frames: short-term, long-term and indefinite (which assumes a repository never becomes available). The Continued Storage GEIS no longer includes the "reasonable assurance" findings made in the Waste Confidence Decision, but instead concludes that spent fuel storage and deep geologic disposal are technically feasible.

Shortly after publication of the Continued Storage Rule and GEIS, the numerous petitioners filed substantively identical petitions requesting that the NRC suspend

4. DTE Electric Co. (Fermi Nuclear Power Plant, Unit 3), CLI-15-4, 81 NRC (26 February 2015).
5. New York v. NRC, 681 F.3d 471 (DC Cir. 2012).
6. Calvert Cliffs Nuclear Project, LLC (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-12-16, 76 NRC 63 (2012).

final licensing decisions, along with motions to admit new or amended contentions to licensing proceedings, and motions to reopen closed proceedings to consider the new contentions.

The petitioners asked the NRC to suspend licensing activities because, without the "reasonable assurance findings" regarding the technical feasibility of a repository, the petitioners argued that the NRC lacks a lawful basis under the AEA to issue initial or renewed licenses. The NRC disagreed, and in CLI-15-4 denied the petitions and accompanying motions.

In CLI-15-4, the Commission reaffirmed its historic interpretation of the AEA that an explicit finding regarding the technical feasibility of spent fuel disposal is not required as a prerequisite to reactor licensing decisions.[7] Further, the Commission noted that despite numerous opportunities to do so, Congress had not revised the AEA to require the explicit finding requested by petitioners.[8]

The NRC also revisited its 1977 statement of policy that it "would not continue to license reactors if [it] did not have reasonable confidence that [spent fuel] can and will in due course be disposed of safely."[9] The NRC explained that the agency's approach to management of spent fuel continues to evolve over time and recognised that its obligation to "ensure the adequate protection of public health and safety encompasses an ongoing responsibility to regulate the continued storage of spent fuel, with or without a repository."[10] The NRC noted that deep geologic disposal remains the national policy for the disposition of spent fuel and that it was considering both the safety and environmental impacts of continued storage, including the possibility of indefinite continued storage, because of this regulatory responsibility. As it found in the Continued Storage Rule, the NRC reaffirmed the technical feasibility of deep geologic disposal and continued safe storage pending the availability of a repository (or indefinitely should such storage become necessary).

Because the NRC found that the AEA does not require the explicit findings requested by the petitioners, it denied the petitions and accompanying motions. In a separate lawsuit, the petitioners have joined other groups and several states to challenge the Continued Storage GEIS and Rule before the Court of Appeals for the District of Columbia Circuit. A briefing schedule is expected soon, with oral argument expected later this year.

7. Natural Resources Defense Council v. NRC, 582 F.2d 166 (2d Cir. 1978).
8. DTE Electric Co., supra note 1.
9. Natural Resources Defense Council, Denial of Petition for Rulemaking, 42 Fed. Reg. 34 391, 34 393 (5 July 1977).
10. DTE Electric Co., supra note 1 (slip op. at 30).

National legislative and regulatory activities

Canada

Liability and compensation

An Act respecting Canada's offshore oil and gas operations, enacting the Nuclear Liability and Compensation Act, repealing the Nuclear Liability Act and making consequential amendments to other Acts (Short title: Energy Safety and Security Act)

Canada's new Nuclear Liability and Compensation Act received Royal Assent and passed into law on 26 February 2015.[1] The Energy Safety and Security Act changes Canada's civil liability regimes in the offshore oil and gas and in the nuclear energy industries by substantially increasing the absolute liability threshold limits. The current thresholds for offshore oil and gas operations are CAD 40 million in the Arctic and CAD 30 million for all other offshore areas. For nuclear facilities, the current threshold is CAD 75 million.

The increase addresses the recommendations to update Canada's liability limits for the offshore and nuclear industries that were made in the autumn 2012 report from Canada's Commissioner of the Environment and Sustainable Development.[2] It also comes after two high profile disasters, the explosion of British Petroleum's offshore drilling rig, Deepwater Horizon, on 20 April 2010 and the incident at the Fukushima Daiichi Nuclear Power Station following a tsunami caused by the Tohoku earthquake on 11 March 2011.

The Nuclear Liability and Compensation Act contains the updated nuclear liability scheme and, when it comes into force, it will repeal the 1976 Nuclear Liability Act. The Nuclear Liability and Compensation Act strengthens and modernises Canada's nuclear liability regime to better deal with liability and compensation for a nuclear accident within Canada. The legislation puts Canada in line with international compensation levels and clarifies the heads of compensation, setting out what is covered and the process for claiming compensation. The legislation maintains the absolute liability of operators of nuclear facilities for civil injury and damage. The operator will be exclusively liable. Thus, there is no need for an affected person to prove fault when making claims for injury or damages, and only the operator will be held liable.

The new legislation provides for a gradual increase of the absolute liability amount for nuclear facility operators over a three-year period, from the current CAD 75 million up to CAD 1 billion. CAD 650 million will be the liability limit upon proclamation of the law.[3] The three-year phase-in period will see yearly increments from the initial CAD 650 million at entry into force, to CAD 750 million, CAD 850 million and then to CAD 1 billion at year three. This will provide an

1. Statutes of Canada (S.C.) 2015, Chapter 4 (Nuclear Liability and Compensation Act or NLCA). The NLCA has been reproduced in this edition of the *Nuclear Law Bulletin* and can be found in the Section "Documents and Legal Texts".
2. Office of the Auditor General of Canada (2013), "2012 Fall Report of the Commissioner of the Environment and Sustainable Development", available at: www.oag-bvg.gc.ca/internet/English/parl_cesd_201212_e_37708.html.
3. NLCA, supra note 1, subsection 24(1).

opportunity for the insurance markets to realign, for operators to get the insurance required and to have the fiscal elements in place. As well, the legislation requires the review of the limit of liability at least once every five years.[4]

The new legislation includes other domestic improvements with respect to compensable damages and the claims period. It enlarges the heads of compensable damages to include, for instance, bodily injury, loss of life, property damage, psychological trauma associated with bodily injury and economic loss. As well, the claims limitation period for bodily injury is extended from 10 to 30 years in order to address latent illnesses. All other damage claims are subject to a 10-year limitation period.

The enactment allows for the establishment of a nuclear administrative quasi-judicial claims tribunal for the purposes of examining and adjudicating claims in an expeditiously and equitable manner,[5] which will replace the regular courts system if needed.

The coming into force of the Nuclear Liability and Compensation Act will allow Canada to ratify the Convention on Supplementary Compensation for Nuclear Damage (CSC), which deals with nuclear civil liability and compensation in the event of transboundary and transportation incidents. Canada became a signatory to the CSC on 3 December 2013, and the CSC entered into force on 15 April 2015. Once Canada ratifies the CSC, it will have strengthened its nuclear civil liability structure by supplementing its domestic regime financially. Furthermore, the ratification will allow Canada to establish nuclear civil liability treaty relations with the United States, which has already ratified the CSC.

The timing of the entry into force of the Nuclear Liability and Compensation Act is divided. Firstly, those provisions of the Act that do not rely on the CSC being in force will come into force on a day or days to be fixed by order of the Governor in Council.[6] This is expected to occur once the regulations that are required for the legislative scheme to be implemented, have been finalised.[7] Those provisions which contemplate the CSC being in effect cannot take effect before the convention is in force. Finally, the provisions of the statute which affect such things as making consequential amendments to other Acts and which repeal the existing Nuclear Liability Act, will have their own coming into force date fixed by order of the Governor in Council.

France

Liability and compensation

Decree No. 2014-1049 of 15 September 2014 on the recognition and indemnification of the victims of nuclear tests conducted by France[8]

The decree of 15 September 2014 abrogates and replaces decree No. 2010-653 of 11 June 2010 implementing the Act No. 2010-2 of 5 January 2010.

4. Ibid., section 26.
5. Ibid., section 41.
6. In Canadian law, an order of the Governor-in-Council is the order of the Executive, basically the federal Cabinet.
7. For instance, pursuant to NLCA, section 7, nuclear installations, the site where a facility or facilities are located and that contain nuclear material, and the operator of nuclear installations may be designated by regulations.
8. *Décret n° 2014-1049 du 15 septembre 2014 relatif à la reconnaissance et à l'indemnisation des victimes des essais nucléaires français*, JORF 17 September 2014, p. 15200, text no. 1.

As a reminder, the Act of 5 January 2010 on the recognition and indemnification of the victims of nuclear tests conducted by France requires that in order to get compensation, a claimant must suffer radiation-induced illnesses as a result of their exposure to ionising radiation due to nuclear tests conducted by France. The type of illness shall be part of a list set out in a decree in line with the research conducted by the international scientific community. The claimant must also have lived in or visited specific geographical areas in either the Sahara or French Polynesia during precise periods.[9]

The decree of 15 September 2014 modifies the following points in particular:

- the list of radiation-induced illnesses resulting from exposure to ionising radiation due to nuclear tests conducted by France. Twenty-one types of illness are now listed;
- the geographic co-ordinates of the concerned areas of the Sahara;
- the status of the committee for the compensation of victims of nuclear tests (*comité d'indemnisation des victimes des essais nucléaires* or CIVEN), which is now recognised as an independent administrative authority having the jurisdiction to decide on the award of compensation pursuant to the Act of 5 January 2010. In the past, CIVEN was a consultative organ merely addressing recommendations to the French Minister of Defence.

Act No. 2014-1655 of 29 December 2014 amending the finance law for 2014[10]

Article 114 of the Act amending the finance law for 2014 indicates that the minister in charge of the economy is entitled to grant the French Atomic Energy and Alternative Energy Commission (CEA) a state guarantee pursuant to the third party nuclear liability regime by virtue of the environment code requiring the operator to have and maintain a financial guarantee up to an amount equivalent to that of its liability for an accident.

This guarantee shall be applied for each nuclear installation and each nuclear accident, and will be capped at EUR 700 million. It shall come into force on a date determined by decree, at the latest on 1 January 2016.

Nuclear safety and radiological protection

Tomorrow's nuclear safety: a financial and democratic issue – Information report No. 634 (2013-2014), by Mr Michel Berson of the French Senate's Finance Committee[11]

This information report, authored by the French Senate's Finance Committee, issues a variety of recommendations on the public financing of nuclear safety, of radioprotection and of nuclear transparency based on three principles: independent control, rationalised financing and democratic transparency.

It makes the following recommendations in particular:

- ensure a long-lasting financing of nuclear safety by creating a contribution for nuclear safety and transparency perceived by the Nuclear Safety

9. More information on Act No. 2010-2 of 5 January 2010 can be found in NEA (2010), *Nuclear Law Bulletin*, No. 85, Paris, pp. 104-105.
10. *Loi n°2014-1655 du 29 décembre 2014 de finances rectificative pour 2014,* JORF 30 December 2014, p. 22898, text no. 3.
11. Berson, M. (2014), *La sûreté nucléaire de demain : un enjeu financier et démocratique* – Rapport d'information n°634 (2013-2014), la Commission des finances du Sénat, available at: www.senat.fr/notice-rapport/2013/r13-634-notice.html.

Authority and paid for by operators of nuclear installations; the amount thus perceived should be capped, with the surplus being transferred to the general budget of the state;

- create an annex to the year's budget law giving an overview of the total public funding earmarked for nuclear safety, radioprotection and transparency, in order to ensure greater political clarity;
- carry out, with a view to simplification, a general review of the legal rules applicable in the field of nuclear safety and radioprotection.

Order of 20 November 2014 on the ratification of Nuclear Safety Authority decision No. 2014-DC-0462 of 7 October 2014 on criticality risk control in basic nuclear installations[12]

Nuclear Safety Authority decision No. 2014-DC-0462 of 7 October 2014 on criticality risk control in basic nuclear installations[13]

The order of 7 February 2012 setting the general rules for basic nuclear installations (INB) (so-called "INBs order") stipulates that "with a view to control the risk of nuclear chain reactions, the operator shall demonstrate that the measures adopted allow the prevention of any risk of criticality which is not sought".

Pursuant to this provision, the decision of the Nuclear Safety Authority of 7 October 2014, approved by the order of 20 November 2014, details the objectives and general principles applicable to the criticality risk control, the provisions relating to the prevention of the criticality risk as well as the organisation rules for any operator of a basic nuclear installation. It applies to all INBs in the area where fissile material is present, excluding those where criticality is physically impossible, in the stages of conception, construction, operation, definitive shutdown, dismantling, maintenance and monitoring.

Greece

Organisation and structure

Law re-establishing the regulatory authority in radiation protection and nuclear safety

The law entitled "Research, Technological Development and Innovation and other provisions" was published in the *Official Government Gazette* on 8 December 2014.[14] Specifically, Chapter E (Articles 39-46, article 90) entitled "Management of Nuclear Energy, Technology and Radiation Protection – Greek Atomic Energy Commission (EEAE)" enlarges the scope of the existing national legal, regulatory and organisational framework for ensuring radiation and nuclear safety and protection of the general public, the environment and the goods of the country against the risks arising from ionising radiation emitted by any kind of devices, nuclear installations and radioactive material (natural and artificial), as well as artificially produced non-ionising radiation.

12. *Arrêté du 20 novembre 2014 portant homologation de la décision n°2014-DC-0462 de l'Autorité de sûreté nucléaire du 7 octobre 2014 relative à la maîtrise du risque de criticité dans les installations nucléaires de base*, JORF 2 December 2014, p. 20047, text no. 15.
13. *Décision n°2014-DC-0462 de l'Autorité de sûreté nucléaire du 7 octobre 2014 relative à la maîtrise du risque de criticité dans les installations nucléaires de base*, *Bulletin officiel de l'Autorité*, available at: www.asn.fr/Reglementer/Bulletin-officiel-de-l-ASN/Decisions-de-l-ASN/Decision-n-2014-DC-0462-de-l-ASN-du-7-octobre-2014.
14. Law 4310, Government Gazette Folio No.258/A/ (8 December 2014).

Article 41 defines the competent Minister and the EEAE as the regulatory authority for the control, regulation and supervision in the fields of nuclear energy, nuclear technology, radiological, nuclear safety and radiation protection.

Article 42 lists the competencies of the Ministries involved.

Article 43 describes EEAE legal status and responsibilities. EEAE is established as a legal entity of public law, enjoying full administrative and financial independence in relation to its duties. EEAE has the legal competence and the power to attend trials independently in all cases regarding its actions, omissions or legal relationships.

Article 44 refers to EEAE management.

Article 45 refers to EEAE revenues and mechanisms of ensuring financial resources.

Article 46 describes the enforcement power of EEAE as a regulatory authority; the sanctions that can be imposed are listed in detail.

Article 90 concerns the licensing of activities and facilities where radiation use is involved (e.g. medicine, industry, research). This responsibility is fully assigned to the regulatory authority.

Hungary

General legislation

Act VII of 2015 regarding modifications to Act CXVI of 1996 on Atomic Energy and Government Decree No. 118/2011 (VII. 11.) on the nuclear safety requirements of nuclear facilities and the procedures of the Hungarian Atomic Energy Authority in nuclear safety regulatory matters have recently entered into force. The new provisions affect, among other matters:

- definitions of the Law;
- the use of standards;
- data protection, information rights and privacy issues;
- the scope of the authority; and
- remuneration of Government servants.

India

Liability and compensation

India-US Administrative Arrangement to Implement 123 Agreement

In January 2015, Indian Prime Minister Narendra Modi and United States President Barak Obama reached an understanding during President Obama's visit to India with respect to the India-US civil nuclear co-operation agreement. This understanding was reached after months of negotiations between the so-called "Contact Group", which was established during Prime Minister Modi's visit to the United States in September 2014 to advance the implementation of civil nuclear energy co-operation. The full text of the understanding has not yet been made public by either government.

In February 2015, the Indian government (through the Ministry of External Affairs) posted a "Frequently Asked Questions and Answers" page on its website, where it clarified issues related to:[15]

- suppliers' liability;
- operator's right of recourse;
- establishment of India Nuclear Insurance Pool and Nuclear Liability Fund.

The Government of India made further clarifications regarding the implementation of the 123 Agreement.[16] The clarification clearly states that there is no proposal to amend the Civil Liability for Nuclear Damage Act of 2010 (CLND Act of 2010)[17] or the Civil Liability for Nuclear Damage Rules of 2011 (CLND Rules).[18] The government of India intends to ratify the Convention of Supplementary Compensation (CSC) as there is a general understanding that the CNLD Act of 2010 is compatible with the CSC. Relating to the ambiguity raised by the operator's right of recourse under Section 17(b) of the CNLD Act of 2010, India clarified that the actions and matters contemplated in Section 17(b) should be considered in the context of the relevant clause in the contract between the operator and supplier on product liability or service contracts. The understanding makes it clear that section 17(b) of the CNLD Act of 2010 is in conformity with the CSC, since Annex 10(a) of the CSC Annex does not restrict the contents of the contract between the operator and the supplier. As a policy matter, it is clarified that the Nuclear Power Corporation of India (NPCIL), the sole operator as per the CNLD Act 2010, would insist for provisions providing a right of recourse consistent with Rule 24 of the CLND Rules of 2011 in nuclear supply contracts. In this regard, a market-based mechanism – the India Nuclear Insurance Pool – will be instituted to compensate third parties for nuclear damage and, in case of the invocation of right of recourse, the suppliers can seek insurance coverage from this Pool.

Section 46 of the CNLD Act of 2010 has raised concerns among both domestic and foreign suppliers regarding the scope as its broad language brings the possibility of legal liability on the suppliers and also allows victims to invoke foreign jurisdiction against the operator or the supplier. The clarification states that the language of section 46 of the CNLD Act of 2010 is provided routinely in similar other Indian legislations, which continue to operate in their respective domains, and that the legislative intent that should be used in interpreting statutes does not provide

15. Government of India, Ministry of External Affairs (2015), "Frequently Asked Questions and Answers on Civil Liability for Nuclear Damage Act 2010 and related issues", www.mea.gov.in/press-releases.htm?dtl/24766/Frequently_Asked_Questions_and_Answers_on_Civil_Liability_for_Nuclear_Damage_Act_2010_and_related_issues (accessed 28 April 2015).
16. A "123 Agreement" is an agreement made according to section 123 of the US Atomic Energy Act relating to significant transfers of nuclear material, equipment or components from the United States to another nation. For more information on 123 Agreements, see US National Nuclear Security Administration (n.d.), "123 Agreements for Peaceful Cooperation", http://nnsa.energy.gov/aboutus/ourprograms/nonproliferation/treatiesagreements/123agreementsforpeacefulcooperation (accessed 28 April 2015).
17. The full text of the Act can be found here: http://dae.nic.in/sites/default/files/civilnucliab.pdf. More information on the CLND Act of 2010 can be found here: NEA (2010), "India: Civil Nuclear Liability Act (2010)", *Nuclear Law Bulletin*, No. 86, NEA, Paris, pp. 78-79.
18. More information on the CLND Rules, as well as the CLND Act of 2010, can be found here: NEA (2011), "India: The Civil Liability for Nuclear Damages Act 2010 (Act) and the Civil Liability for Nuclear Damages Rules, 2011 (Rules)", *Nuclear Law Bulletin*, No. 88, NEA, Paris, p. 80.

liability to the suppliers during the adoption of the CNLD Act of 2010. Similarly, the clarification provides that section 46 of the CNLD Act of 2010 "exclusively covers the remedies that are available against the operator" and also negatives victims' ability to approach foreign courts under section 46 based on legislative intent.

The India Nuclear Insurance Pool has a total capacity of Indian National Rupee (INR) 1 500 crores[19] with INR 750 crores contributed by the Pool Administrator, GIC Re, and four others public sector insurance companies, with the balance contributed by the Indian government. The Pool covers risks related to the nuclear operator's liability under section 6(2) of the CNLD Act of 2010 and the supplier's liability under section 17 through three types of policies: a Tier 1 policy for operators, a Tier 2 policy for turn key suppliers and a Tier 3 policy for suppliers other than turn key suppliers. Section 6(1) of the CLND Act of 2010 provides a maximum liability amount of INR that is equivalent of 300 million Special Drawing Rights (SDR).[20] In the event that the total liability exceeds the operator's maximum liability of INR 1 500 crores, any gap in coverage beyond the India Nuclear Insurance Pool capacity will be contributed by the Indian government. The Indian government plans to access international funds under the CSC once it becomes a party for amounts beyond the INR equivalent of SDR 300 million. The clarification highlights the Indian government's plan to establish a Nuclear Liability Fund by charging operators based on power generation from existing and new nuclear plants over a period of 10 years.

Further, the clarification negates the possibility that operators and suppliers will be asked to provide more compensation in the future than under current existing contracts. Established jurisprudence does not support retrospective laws that affect contracting parties' substantive rights. The clarification concludes by placing the onus on the companies to continue negotiations and come up with viable techno-commercial offers and contracts consistent with Indian law and practice.

Japan

Liability and compensation

On 15 January 2015, Japan deposited its

instrument of acceptance to the Convention on Supplementary Compensation for Nuclear Damage (CSC). In November 2014, the Japanese parliament passed two pieces of legislation to ratify the CSC,[21] which came into effect on 15 April 2015, the effective date of the CSC.

Act on the Partial Amendment of the Act on Compensation for Nuclear Damage and the Government Indemnity Agreement Act

This legislation amended the two existing Acts in accordance with the CSC on the following points:

- The amendment made it clear that the contractual terms concerning right of recourse and liabilities for transportation shall be expressed in writing

19. One crore is equal to the number ten million.
20. As of 28 April 2015, 1 SDR was equivalent to approximately 88 INR. By this calculation, SDR 300 million equals approximately INR 2641 crores. This leaves a gap of approximately INR 1141 crores.
21. Unofficial English translations of the Act on Compensation for Nuclear Damage and Act on Indemnity Agreements for Compensation of Nuclear Damage (extracts) can be found in the section "Documents and Legal Texts" of this edition of the *Nuclear Law Bulletin*.

(Paragraph 2, Article 3 and Paragraph 2, Article 5 of the Act on Compensation for Nuclear Damage [the Compensation Act]).

- The Civil Code stipulates: "If the obligee is *negligent* regarding the failure of performance of the obligation, the court shall determine the liability for damage and the amount thereof by taking such elements into consideration" (emphasis added). This rule was also applicable to nuclear liability before the amendment. Instead of this rule, newly inserted Article 5-2 of the Compensation Act stipulates a special provision for nuclear liability, which eliminates the case of "slight negligence".
- The former Paragraph 1, Article 5 of the Compensation Act provided a right of recourse if the nuclear accident resulted from an act by a "third party" (including both legal entities and individuals) with intent to cause damage. Legal entities are eliminated from the scope of the new Paragraph 1, and only individuals are included.
- Newly inserted Article 9-2 of the Compensation Act stipulates restrictions on the cancellation of nuclear liability insurance contracts. The cancellation of nuclear liability insurance contracts shall take effect after 90 days from the date when the authority receives the notification of cancellation from insurer. Nuclear liability insurance contracts for transportation shall not be cancelled during the carriage, i.e. from the commencement to the end of the shipment. Article 16 of the Act on Indemnity Agreements for Compensation of Nuclear Damage (Government Indemnity Agreement Act) is also amended accordingly.

Act on Subsidisation etc. of Nuclear Damage Compensation for Enforcement of the Convention on Supplementary Compensation for Nuclear Damage

This new legislation establishes the domestic system for distribution and financing of the 2nd tier of the CSC.

Distribution

When Japan is entitled to use the 2nd tier funds, the government provides the funds in the form of subsidies to the operator who is liable for the nuclear damage. The operator may request the subsidies when:

- The total amount of compensation which the operator has already paid or on which the operator and the claimant have already reached an agreement, exceeds SDR 300 million; and
- Japanese courts have jurisdiction according to Article 13 of the CSC.

The subsidies shall be used for the compensation of damage that are specified in Article 5 of the CSC. Other procedures, terms and conditions of the subsidies are set by the government according to the Subsidy Budget Rationalisation Act.

Financing

Nuclear operators shall pay contributions to the government to finance the 2nd tier. There are two types of contributions:

- *General contributions* are paid every year by all Japanese nuclear operators. These contributions correspond to Japan's contributions to the 2nd tier in case a nuclear accident is caused by an operator of another state party to the CSC.
- *Special contributions* are paid by the nuclear operator liable for a nuclear accident. These contributions correspond to Japan's contributions to the 2nd tier in case the accident occurs at the nuclear installation of a Japanese nuclear operator.

The definition of "nuclear operator" is almost the same as in the Compensation Act, as it includes operators of nuclear power plants, research reactors, nuclear fuel cycle facilities, etc. The amount of the contributions is calculated according to the rule set by the government ordinance of 8 April 2015.

Korea

Liability and compensation

Amendment of Article 3 of the Enforcement Decree of the Nuclear Liability Act: increase of the financial security amount required from operators of nuclear power reactors

The Korean government has increased the financial security amount required from nuclear operator operating nuclear power reactors up to the liability compensation amount, i.e. SDR 300 million. This therefore aligns the financial security amount with the current nuclear liability compensation amount, which had been increased in 2001 to reflect the revision of the Vienna Convention on Civil Liability for Nuclear Damage in 1997. Until 2014, the financial security amount for nuclear power reactors per site covered by the insurance or the state indemnity agreement was only KRW 50 billion (approximately SDR 30 million). The aim of the amendment therefore was to eliminate the gap between the two amounts.

Amendment of Article 2 of the Enforcement Decree of the Act on Indemnity Agreements for Nuclear Liability: the Korean Government will take over the risks of environmental damages

The Korean government decided to take over the risks of environmental damage from the insurance market, by entering into a state indemnity agreement with the operator. Before this amendment, the risks related to environmental damage were covered by insurance, but the Korean nuclear insurance pool did not have the capacity to meet the increased level of financial security to SDR 300 million if the risks of environmental damage were to be included in the coverage.

Lithuania

General legislation

Revised rules of procedure for drafting nuclear safety requirements and rules

The Rules of Procedure for Drafting Nuclear Safety Requirements and Nuclear Safety Rules, approved by the Head of State Nuclear Power Safety Inspectorate (VATESI), establish rules of procedure for planning and implementing the process of drafting new and amended nuclear safety rules and requirements, adopted by VATESI. The amendment (new edition)[22] of the Rules was adopted in order to:

- formally introduce and elaborate on the use of the principle of a graded approach in the process of establishing rules and requirements for licensees;
- harmonise the Rules with recently amended general rules of legal technique.

The amendment came into force on 29 November 2014.

22. Rules of Procedure for Drafting Nuclear Safety Requirements and Nuclear Safety Rules, Order No. 22.3-215, 28 November 2014, approved by the Head of the State Nuclear Power Safety Inspectorate, on the amendment of Order No. 22.3-58, 15 June 2009, approved by the Head of the State Nuclear Power Safety Inspectorate, on the approval of Nuclear Safety Requirements BSR-1.1.1-2011, available in Lithuanian at: www.e-tar.lt/portal/lt/legalAct/bf22c29076d711e49710918558376243.

Transport of radioactive material

Amendment of requirements for shipment of radioactive material, radioactive waste and spent nuclear fuel

The amendment[23] to the Rules on Shipment, Import, Transit and Export of Radioactive Material, Radioactive Waste and Spent Nuclear Fuel, approved by joint order of the Minister of Health and the Head of the State Nuclear Power Safety Inspectorate (VATESI), came into force on 1 May 2015. It aims to clarify existing regulation on shipment, import, transit and export of radioactive material, radioactive waste and spent nuclear fuel by harmonising it (removing inaccuracies) with:

- recently amended and adopted Lithuanian legislation;
- IAEA's Regulations for the Safe Transport of Radioactive Material, SSR-1, 2012 edition;
- Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel.

Additionally, some of the approved application forms were amended in order to simplify their readjustment to electronic application procedure. Further, the separation of functions was clarified between two Lithuanian regulatory authorities (the State Nuclear Power Safety Inspectorate and the Radiation Protection Centre) in the area of issuing permits for shipment.

Slovak Republic

International co-operation

Details about international agreements concluded by the Slovak Republic

Since the last edition of the *Nuclear Law Bulletin*, No. 94, as regards the international agreements status, the Slovak Republic hasn't acceded, signed, ratified or terminated any treaty in the field of nuclear energy.

Liability and compensation

Act No. 54/2015 Coll.

Concerning the international nuclear liability regime under the 1963 Vienna Convention and the European Union (EU) Council Decision 2013/434/EU,[24] the Slovak Republic was considering the pros and cons of ratifying the 1997 Protocol to amend the Vienna Convention. The Nuclear Regulatory Authority (NRA) had initiated and co-ordinated the co-operation of the relevant ministries in the Interdepartmental Working Group for the Civil Liability for Nuclear Damages that provided NRA with

23. Rules on Shipment, Import, Transit and Export of Radioactive Material, Radioactive Waste and Spent Nuclear Fuel, Order No. V-1164/22.3-194, 11 November 2014, approved by the Minister of Health and the Head of the State Nuclear Power Safety Inspectorate, on the Amendment of the Order No. V-1271/22.3-139, 24 December 2008, approved by the Minister of Health and the Head of the State Nuclear Power Safety Inspectorate, available in Lithuanian at: www.e-tar.lt/portal/lt/legalAct/b82e8de0753611e4805fa6cb12e2ef99.
24. Council Decision 2013/434/EU of 15 July 2013 authorising certain member states to ratify, or to accede to, the Protocol amending the Vienna Convention on Civil Liability for Nuclear Damage of 21 May 1963, in the interest of the European Union, and to make a declaration on the application of the relevant internal rules of Union law, *Official Journal of the European Union* (OJ) L 220/1 (17 August 2013).

support when elaborating the non-legislative material "Analysis of the advisability of accession of the Slovak Republic to the Protocol amending the 1963 Vienna Convention on the Civil Liability for Nuclear Damage caused by Nuclear Incidents as fulfilment of the Council Decision 2013/434/EU" (Analysis).

The Analysis was submitted to the government in March 2014 to provide the government with a wide range of information and expected results of such ratification.

The government took the Analysis into consideration and adopted resolution No. 152 as of the 2 April 2014 based on which the NRA is supposed to:

- submit to the government a separate draft law on civil liability for nuclear damage and its financial coverage based on the 1963 Vienna Convention (until the end of December 2014);
- report to the government on the status and developments of the European legislation as regards civil liability for nuclear damage (until the end of March 2017);
- postpone the intended legislative works considering the accession to the 1997 Protocol amending the 1963 Vienna Convention until the submission of the abovementioned report in 2017.

Based on government resolution No. 152, the NRA elaborated a draft law on civil liability for nuclear damage that was adopted by the Parliament on 19 March 2015 and published as Act No. 54/2015 Coll. on civil liability for nuclear damage and its financial coverage.[25] The act will take effect on 1 January 2016.

By adoption of the separate law on civil liability for nuclear damage, the Slovak national legislation finally separated special civil law provisions on nuclear damage issues from the exclusively administrative law provisions on conditions of the peaceful use of nuclear energy as set by the 2004 Atomic Act.

New separated Act No. 54/2015 Coll. on civil liability for nuclear damage and its financial coverage provides a complete set of provisions on:

- civil liability for nuclear damage caused by nuclear incidents (causal nexus);
- competences of the NRA relating to the application of this act;
- competences of the National Bank of Slovakia as the Financial Market Authority in relation to the subjects of the financial market providing the financial security for nuclear liability coverage;
- sanctions applicable.

However, the legal provisions concerning the civil liability for nuclear damage in the new separate act are not new in the national legislation. Prior to Act 54/2015, there were provisions in Chapter VII of the 2004 Atomic Act that were applicable in the case of nuclear damage. Act 54/2015 provides for the incorporation of the non-revised 1963 Vienna Convention on civil liability for nuclear damage, which the Slovak Republic is bound by as a signatory state.

There are provisions providing for the application of the relevant provisions of the Vienna Convention. Also, definitions of nuclear incident, nuclear damage, nuclear installation, operator, insurance of the financial coverage, financial security

25. The Act is available in Slovak at: www.ujd.gov.sk/ujd/WebStore.nsf/viewKey/Zakon_54_2015/$FILE/54_2015.pdf. An unofficial English translation of the Act can be found in the Section "Documents and Legal Texts" of this edition of the *Nuclear Law Bulletin*.

and the transport of radioactive material are incorporated. Furthermore, there are provisions which provide for the liability of the operator in case an accident occurs during the operation of a nuclear installation or during transport.

The limits of the operator's liability for nuclear damage are set at the same level as in Act No. 143/2013 amending the 2004 Atomic Act (in effect since 1 January 2014), and the limits are as follows:

- for a nuclear installation with a nuclear reactor or nuclear reactors for energy purposes, during their commissioning and operation, up to EUR 300 million (for each nuclear incident);
- for a nuclear installation with a nuclear reactor or nuclear reactors used for research or training purposes exclusively, during their commissioning and operation, up to EUR 185 million (for each nuclear incident);
- for management of nuclear materials, for management of spent fuel or for the storage, conditioning and processing of radioactive waste, up to EUR 185 million (for each nuclear incident);
- for nuclear damage caused by each nuclear incident during the decommissioning of the nuclear installations as mentioned in the paragraphs above, up to EUR 185 million;
- for nuclear damage caused by each nuclear incident during the transport of radioactive material, up to EUR 185 million (except for excepted and exempted cases).

The new provisions were set to establish the claims handling process to determine the justification required regarding the financial security to cover the operator's nuclear liability, the procedure to inform the public of the occurrence of the nuclear incident, as well as the sanctions in case of breach of the provision in Act No. 54/2015.

Moreover, the one competent court for handling nuclear damage claims was set and is located in the Regional Court of Nitra (located in the vicinity of both nuclear power plant locations in the Slovak Republic).

Slovenia

General legislation

Amendments of the Decree on areas of restricted use of space due to a nuclear facility and the conditions of facility construction in these areas[26]

The Decree on areas of restricted use of space due to a nuclear facility and the conditions of construction in these areas was adopted in 2004 and amended in 2006. The latest amendments to the Decree were adopted to comply with the provisions of the Construction Act to the extent it relates to the demolition, replacement works and removal of structures, and also to align the terminology. Furthermore, the amendments also ensure compliance with the new requirements for classifying and sorting objects according to the complexity of the construction and align the terminology with the Act on Protection Against Ionising Radiation and Nuclear Safety.

26. Official Gazette of the Republic of Slovenia, No. 92/2014.

The aim of the latest amendments remain the same, i.e. to ensure the implementation of radiation and nuclear safety measures, which restrict the use of land in the vicinity of nuclear facilities, thereby reducing the possibility of industrial or other accidents outside the nuclear facility, which could have an impact on nuclear safety. The amendments also aim to impose restrictions in relation to population density and the requirements relating to local infrastructure facilities to minimise the possibility of damage to human health and to the environment if an incident at a nuclear facility occurs. The provisions of the amendments are based on the principle of integrity which provides all appropriate and reasonable measures to prevent possible harm to human health, radioactive contamination of the environment, the degradation of space and negative effects on nuclear and radiation safety.

The amendments to the Decree entered into force on the day following its publication in the Official Gazette of the Republic of Slovenia, i.e. on 20 December 2014.

Decree on the criteria for determining the compensation rate regarding the restricted use of space and intervention measures in the area of nuclear facilities[27]

This Decree lays down the criteria for determining the amount of compensation:

- for restricted use of space ("the compensation"), the nuclear operator must pay the municipalities where the use of space is limited due to nuclear facility radiation and nuclear safety measures;
- for planning and implementation of intervention measures ("the charge"), the operator must pay to the municipalities that are partly or entirely within the nuclear facility intervention planning areas.

The Decree was adopted as a corrective measure on the basis of the conclusions of the Court of Audit, which were set out in the Audit Report on the site selection of the repository for low and intermediate level radioactive waste. This Decree is now consistent with the Act on Protection Against Ionising Radiation and Nuclear Safety and with the latest amendments of the Decree on areas of restricted use of space due to a nuclear facility and the conditions of facility construction in these areas in order to eliminate the deviation of the current determination of compensation, as they were identified in the report of the Court of Audit.

This Decree entered into force on 1 January 2015. Upon entry into force of this Decree, the previous Decree on the Criteria for Determining the Amount of Compensation Due to the Restricted Use of Land in the Area of Nuclear Facility[28] ceased to apply.

Switzerland

Liability and compensation

The Swiss Federal Council adopts the revised Nuclear Energy Third Party Liability Ordinance

On 25 March 2015, the Swiss Federal Council adopted a total revision of the Nuclear Energy Third Party Liability Ordinance (ORCN).[29] This ordinance details the

27. Id.
28. Official Gazette of the Republic of Slovenia, No. 134/2003 and 100/2008.
29. Office fédéral de l'énergie OFEN (2015), *Le Conseil fédéral adopte une révision totale de l'ordonnance sur la responsabilité civile en matière nucléaire* [The Federal Council adopts a total

implementation of the new Nuclear Energy Third Party Liability Act (LRCN) that was adopted by Parliament in 2008, but which has not yet come into force. The new LRCN and the revised ORCN can only enter into force once the Paris Convention on Nuclear Third Party Liability as amended by the 2004 Protocol, already ratified by Switzerland in 2009, is in effect.

On 13 June 2008, the Swiss Parliament adopted the new Nuclear Energy Third Party Liability Act and approved the ratification of the corresponding conventions, which had been revised in 2004 (i.e. the Paris Convention and the Brussels Convention Supplementary to the Paris Convention) as well as the Joint Protocol relating to the Application of the Vienna Convention on Civil Liability for Nuclear Damage and the Paris Convention. Switzerland ratified the Paris and Brussels Supplementary Conventions in March 2009.

Pursuant to the revised LRCN, the minimum insurance to be covered at the national level increases from CHF 1 billion to EUR 1.2 billion (CHF 1.26 billion based on the exchange rate as of 10 June 2015), which is in line with the international third party liability regime. The revision also greatly simplifies the compensation procedure, thereby improving the protection of victims in the case where an accident in Switzerland would also see victims in Switzerland. In such a case, the conditions of compensation and the procedural provisions that would apply to Switzerland would be the same as for all other signatory states.

Total revision of the ORCN

The revision of the ORCN sets the amount of the minimum cover that must be paid by private insurers to CHF 1 billion and defines which types of risk insurers may exclude. The ordinance also contains the method to calculate the premiums that must be paid by nuclear operators to the Federal insurance. The latter assumes the amount of nuclear damage not covered by private insurers or exceeding their maximum cover limit up to the amount of EUR 1.2 billion.

The fully revised ordinance sets the amount of the insurance cover for nuclear research installations and for the federal interim storage site at EUR 70 million; with regard to the transport of certain nuclear substances, the cover is set at EUR 80 million. In addition, the ordinance stipulates that nuclear facilities and the transport of nuclear material must be insured separately.

An analysis report of the results of the consultation on the total revision of the ORCN was published in 2013.[30]

United States

Radioactive waste management

Nuclear Regulatory Commission publishes Proposed Rule that would update the existing regulations governing near-surface commercial disposal of low-level radioactive waste

On 26 March 2015, the US Nuclear Regulatory Commission (NRC) published a Proposed Rule in the Federal Register to amend its regulations in 10 CFR Part 61 governing

revision of the Ordinance on civil nuclear liability], Press release, available at: www.bfe.admin.ch/energie/00588/00589/00644/index.html?lang=fr&msg-id=56671.

30. Département fédéral de l'environnement, des transports, de l'énergie et de la communication, DETEC (2013), *Ordonnance sur la responsabilité civile en matière nucléaire, Rapport explicatif*, available at: www.admin.ch/ch/f/gg/pc/documents/2015/ORCN_Rapport-expl_fr.pdf.

near-surface commercial low-level radioactive waste (LLRW) disposal sites.[31] If enacted, the proposed rule would adopt a more site-specific approach to LLRW. This would ensure that LLRW streams differing from those anticipated when the LLRW rules were initially enacted in 1982 are accounted for. Additionally, the proposed rules would improve uniformity and require additional analyses with a site-specific approach.

10 CFR Part 61 regulates all phases of near-surface commercial disposal of LLRW, including site selection, design, licensing, operations, closure, monitoring and the cessation of institutional controls. The rules require licensees to meet key "performance objectives". This is intended to protect the general population from release of radionuclides, protect people at the site during operations, protect inadvertent intruders after cessation of institutional controls and ensure site stability following closure of the facility. Currently, the LLRW disposal rules in 10 CFR Part 61 emphasise passive, integrated systems, focus on site stability and specify the minimum geological and geomorphic standards for site suitability. While the current rules do not reference the concept of "defence in depth", the passive, integrated approach is conceptually similar. 10 CFR Part 61 also categorises LLRW into four classifications – A, B, C and Greater-than-class-C waste – with correspondingly stricter controls for higher classifications of waste.

The NRC has proposed revising the existing regulations for several reasons. First, while the current rules require licensees and applicants to analyse potential pathways that could lead to a release of radioactive material, they do not specify the timeframe that must be analysed. Agreement states have mandated different timeframes, resulting in inconsistency. Next, some LLRW waste streams were not anticipated when 10 CFR Part 61 was initially created in 1982. The NRC, at that time, did not foresee the high amounts or concentration of depleted uranium that would be produced by enrichment activities and did not anticipate that the United States Department of Energy would consider disposing of its significant stockpiles of depleted uranium in commercial facilities. The NRC also anticipated that only a small fraction of the waste disposed of at a site would be at the classification limit for the site. In other words, the rule makers expected that most of the material at a Class B site, for example, would have a much lower radioactivity level than the Class B upper limit. However, licensees now use a process known as blending, where different waste stream types are blended together, resulting in a waste stream where most of the material approaches the upper classification limit for the site. Because of this, the NRC believes it is possible that an inadvertent intruder could receive a greater than 5 milliSievert per year dose, even for a site that meets all regulatory requirements.

If adopted, the new rules would require licensees and applicants to perform several new site-specific technical analyses. The first of these would be a performance assessment to ensure that the site will meet the regulatory requirements to protect the general public from releases of radioactivity. The proposed rules would require the performance assessment to calculate peak dose and calculate an exposure pathway analysis for a 1 000 year compliance period, showing that no member of the general public would be exposed to more than 0.25 milliSievert per year. The dose methodology would be consistent with 10 CFR Part 20 radiation protection standards. The performance assessment would focus on what could happen, how likely a release would be, the potential impacts of a release, and how those impacts compare to the regulatory standards. The performance assessment would include a detailed description of the site and system

31. 80 Fed. Reg. 16082 (26 March 2015).

design, what events could affect long-term performance, the processes keeping radionuclides isolated from the environment, a computation of potential doses to the general population and finally an evaluation of the uncertainties in the results.

While protection of inadvertent intruders has always been a regulatory requirement of 10 CFR Part 61, the current rules do not require licensees or applicants to perform an analysis to demonstrate how their specific site will meet these requirements. As discussed earlier, the current rules rely on generally applicable passive requirements that will limit the exposure of an inadvertent intruder. The proposed rules would require a new analysis, focusing on site-specific conditions, to show that an inadvertent intruder at the site would receive no more than a 5 milliSiervert per year dose. The results of the analysis would be compared to the performance objective in 10 CFR Part 61 for protection of an inadvertent intruder and would analyse a 1 000 year compliance period.

The proposed rule would also require other new analyses including a protective assurance analysis with a 10 000 year compliance period for certain long-lived LLRW and a site stability analysis focusing on the waste forms' stability, the facility design and the geotechnical characteristics of the site. Finally, the proposed rule would require licensees to update their safety case and technical analyses when they apply to amend their license for closure. This requirement would provide greater assurance that LLRW streams different from those initially considered when issuing the license will be safely disposed of and meet the regulatory performance objectives.

If adopted, the proposed rule would affect near-surface commercial LLRW disposal licensees or license applicants that are regulated by the NRC or by an NRC agreement state. All current LLRW disposal facilities are licensed by Agreement States. Agreement States would have three years from the date of the publication of the final rule to adopt compatible regulations.

Intergovernmental organisation activities

European Atomic Energy Community

Non-legally binding instruments

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank on "a Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy"[1]

Delivering on one of the priorities set out in its 2015 Work Programme,[2] the European Commission adopted on 25 February 2015 a Communication on "a Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy", together with a Roadmap for the coming years. The Energy Union is also a priority for the European Union (EU) and, as such, over the next five years,[3] and the Framework Strategy sets out the way forward to ensure secure, sustainable and competitive energy to all energy consumers in the European Union, with a special emphasis on citizens.

It builds further on the 2030 Framework for climate and energy policies[4] and the European Energy Security Strategy[5] agreed in 2014. The objective of the Strategy is to bring EU integration in the energy area to the next level based on a holistic, cohesive and common approach to meeting common challenges. The strategy is based on five interconnected and mutually supportive dimensions: energy security, solidarity and trust; a fully integrated internal energy market; moderation of energy demand; decarbonisation of the economy; and research, innovation and competitiveness.

In the nuclear field, the Strategy reaffirms the commitment of the EU to ensure that it maintains technological leadership in the nuclear domain, including through ITER, so as not to increase energy and technology dependence and to put the EU at the forefront of the world's safest nuclear generation. In addition, the Roadmap for the Energy Union announces two initiatives, namely a proposal for a Council Regulation updating the information requirements of Article 41 of the Euratom Treaty and a Communication on a nuclear illustrative programme (PINC) pursuing Article 40 of the Euratom Treaty.

1. COM(2015)80 (25 February 2015).
2. COM(2014)910 (16 December 2014).
3. As agreed at the European Council in June 2014.
4. COM(2014)15 (22 January 2014).
5. COM(2014)330 (28 May 2014).

Report from the Commission to the European Parliament and the Council on the implementation of the work under the nuclear decommissioning assistance programme to Bulgaria, Lithuania and the Slovak Republic in the period 2010-2014[6]

Upon their accession to the European Union, Bulgaria, Lithuania and the Slovak Republic committed to close down early eight older Soviet design nuclear power plants before the end of their scheduled lifetime. In exchange, the European Union agreed to assist financially the three member states to decommission the concerned power plants, i.e. Kozloduy units 1 to 4 in Bulgaria, Ignalina units 1 and 2 in Lithuania and Bohunice V1 units 1 and 2 in the Slovak Republic.

The financial support of the European Union for the three assistance programmes was further extended for the period 2010-2014 with the adoption on 13 December 2013 of two Council Regulations of the Council of the European Union.[7]

The abovementioned report, adopted by the European Commission on 3 March 2015, presents the implementation of the three nuclear decommissioning assistance programmes to Bulgaria, Lithuania and the Slovak Republic for the period 2010–2014. It fulfils the reporting requirements laid down both under the current and previous assistance programmes.

The report acknowledges in particular that the political difficulties set out in the previous report[8] have been largely overcome, with all closure commitments being maintained. It highlights that the focus has passed irreversibly to decommissioning activities and that this would not have been achieved without the decommissioning assistance programme.

Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee on the experience gained in the implementation of Directive 2003/122/EURATOM on the control of high-activity sealed radioactive sources and orphan sources[9]

Directive 2003/122/Euratom on the control of high-activity sealed radioactive sources and orphan sources (HASS Directive) entered into force on 31 December 2003 and its legal enactment period ended two years later. The Directive puts in place a legal framework for ensuring control and security of high-activity sealed radioactive sources in Europe and obliges the EU member states to establish systems for detecting orphan radioactive sources and to recover radioactive sources left from past activities.

6. COM(2015)78 (3 March 2015).
7. Council Regulation (Euratom) No 1368/2013 of 13 December 2013 on Union support for the nuclear decommissioning assistance programmes in Bulgaria and the Slovak Republic, repealing Regulations (Euratom) No 549/2007 and (Euratom) No 647/2010, *Official Journal of the European Union* (OJ) L 346 (20 December 2013), p. 1; Corrigendum to Council Regulation (Euratom) No 1368/2013 of 13 December 2013 on Union support for the nuclear decommissioning assistance programmes in Bulgaria and the Slovak Republic, and repealing Regulations (Euratom) No 549/2007 and (Euratom) No. 647/2010, OJ L 8 (11 January 2014), p. 31; Council Regulation (Euratom) No 1369/2013 of 13 December 2013 on Union support for the nuclear decommissioning assistance programme in Lithuania, and repealing Regulation (EC) No 1990/2006, OJ L 346 (20 December 2013), p. 7; Corrigendum to Council Regulation (Euratom) No 1368/2013 of 13 December 2013 on Union support for the nuclear decommissioning assistance programmes in Bulgaria and the Slovak Republic, and repealing Regulations (Euratom) No 549/2007 and (Euratom) No 647/2010, OJ L 8 (11 January 2014, p. 30; and Corrigendum to Council Regulation (Euratom) No 1369/2013 of 13 December 2013 on Union support for the nuclear decommissioning assistance programme in Lithuania, and repealing Regulation (EC) No. 1990/2006, OJ L 121 (24 April 2014), p. 59.
8. COM(2011)432 (13 July 2011).
9. COM(2015)158 (16 April 2015).

The present report, which was adopted by the European Commission on 16 April 2015, is a requirement under Article 14 of the HASS Directive. An implementation review has been carried out in order to provide an overview of the situation in the EU on (1) the control of high-activity sources in use, (2) the management of disused sources and (3) strategies for handling orphan sources.[10] It is based on EU member states' implementation reports on the HAAS Directive, questionnaires, interviews and fact-finding missions among the European stakeholders.

The report shows that the HASS Directive has been, in general, correctly implemented in all EU member states. The objectives of the Directive have been met and there is no reason to believe that the high-activity sealed sources would not be subject to sufficient control in any of the EU member states. The report mentions, however, some areas where there have been implementation difficulties, as well as some inconsistencies in the implementation of HASS-definition, financial security of sources, training of potentially exposed personnel and source control practices. In addition, the review results indicate slightly variable practices in the practical implementation of the Directive requirements. Some states have very advanced HASS control arrangements and administration, whereas some states fulfil the EU requirements with quite modest administration. This difference is not surprising, since the number of high-activity sealed sources in the EU member states range from only a few in some member states to several thousands in others.

The HASS Directive has been repealed by the Directive 2013/59/Euratom laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation (new Basic Safety Standards Directive),[11] which incorporates its main provisions and harmonises them with the IAEA guidance on radioactive sources. The EU member states have until 6 February 2018 to transpose the new Basic Safety Standards Directive into their national legislation.

As this new Directive does not require reporting on implementation, there will not be in principle a follow-up to the present report.

Croatia was not an EU member state at the time of the HASS Directive implementation review and, consequently, is not included in this report.

International relations

Signature of an Agreement for Scientific and Technological Cooperation between the European Union and European Atomic Energy Community and the Swiss Confederation associating the Swiss Confederation to Horizon 2020 – the Framework Programme for Research and Innovation and the Research and Training Programme of the European Atomic Energy Community complementing Horizon 2020; and regulating the Swiss Confederation's participation in the ITER activities carried out by Fusion for Energy[12]

On 5 December 2014, the European Union/Euratom and Switzerland signed a comprehensive international agreement associating Switzerland to parts of Horizon 2020, Research and Training Programme of Euratom and the ITER project. This will see Swiss entities participate in project consortia in eligible programmes on

10. An orphan source is a radioactive source, which is not under regulatory control.
11. Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom, OJ L 13 (17 January 2014), p. 1. See Art. 107.
12. For more information, please see Swiss participation in Horizon 2020 (Situation on 5 December 2014), available at: http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-hi-swiss-part_en.pdf.

an equal footing with entities from EU member states, while Switzerland will be financially contributing to these programmes with an estimated approximately EUR 367 million until the end of 2016.

Under Horizon 2020 programme, Swiss beneficiaries will be able to participate with an associated status in actions under the "Excellent Science" pillar, as well as in actions under the specific objective "Spreading excellence and widening participation". In addition, Switzerland will also participate as an associated country in the Euratom Programme and the ITER project.

Switzerland's participation is effective from 15 September 2014 until 31 December 2016. Beyond 2016, association to these programmes will depend on Swiss measures to ensure the non-discrimination of Croatian citizens and researchers. If Switzerland ratifies the Protocol extending the Free Movement of Persons Agreement to Croatia by 9 February 2017, the association will expand to the whole of Horizon 2020 including the parts not yet covered. Otherwise, the whole agreement will be automatically terminated.

International Atomic Energy Agency

Convention on Nuclear Safety (CNS)

At their Sixth Review Meeting held in March-April 2014, the contracting parties to the CNS decided by a two-thirds majority to convene a Diplomatic Conference to consider a proposal by Switzerland to amend Article 18 of the CNS (the Swiss Proposal) addressing the design and construction of both existing and new nuclear power plants. The Diplomatic Conference was convened at IAEA Headquarters in Vienna, Austria on 9 February 2015 and was attended by 71 Contracting Parties. The Conference thoroughly considered the Swiss Proposal and concluded that it would not be possible to reach consensus on the proposed amendment. Instead, in order to achieve the same objective as the proposed amendment, the Contracting Parties unanimously adopted the "Vienna Declaration on Nuclear Safety", which includes principles for the implementation of the objective of the Convention to prevent accidents and mitigate radiological consequences should they occur. The "Vienna Declaration on Nuclear Safety" is available at the following link: www.iaea.org/sites/default/files/cns_viennadeclaration090215.pdf.

Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (JC)

The Fifth Review Meeting of the contracting parties to the JC was held from 11 to 22 May 2015 at the IAEA headquarters in Vienna. Sixty-one out of the 69 contracting parties participated in the Review Meeting. The contracting parties discussed in particular the progress made since the Fourth Review Meeting with regard to the management of disused sealed sources, the safety implications of very long storage periods and delayed disposal of spent fuel and radioactive waste and international co-operation in finding solutions for the long-term management and disposal of different types of radioactive waste and/or spent fuel.

They also identified some overarching issues, including:

- staffing, staff development, funding and other human resources areas;
- maintaining and increasing public involvement and engagement on waste management to provide public confidence and acceptance;
- management of disused sealed sources; and

- developing and implementing a holistic and sustainable management strategy for radioactive waste and spent fuel at an early stage.

A Topical Session on "Progress on Lessons Learnt from the Fukushima Daiichi Accident" was also organised during the Review Meeting, focusing on spent fuel and radioactive waste management but also on related issues such as the relevance of the Fukushima Daiichi nuclear power plant accident for non-nuclear power contracting parties, the management of large volumes of accident waste and lessons learnt from decontamination following a radiological accident.

Finally, the contracting parties decided on a number of actions with a view to, *inter alia*, encourage adherence to the Joint Convention and active participation in the review process, and also to increase the effectiveness of the review process for contracting parties without a nuclear power programme. An Extraordinary Meeting will be held in 2017 prior to the Organisational Meeting for the Sixth Review Meeting to address some of these issues.

The Summary Report of the JC 5th Review Meeting is available on the IAEA website.

The Convention on Supplementary Compensation for Nuclear Damage (CSC)

The CSC, which was adopted on 12 September 1997 at the same time as the Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage, entered into force on 15 April 2015.

Pursuant to Article XX, the CSC "shall come into force on the ninetieth day following the date on which at least 5 States with a minimum of 400 000 units of installed nuclear capacity have deposited an instrument referred to in article XVIII", i.e. an instrument of ratification, acceptance or approval. On 15 January 2015, Japan signed and at the same time deposited an instrument of acceptance of the Convention, in accordance with Articles XVII and XVIII thereof. With the acceptance of the Convention by Japan, the conditions for its entry into force under Article XX were met.

With Montenegro acceding to the Convention on 17 April 2015, the Convention will count seven contracting parties[13] as of 16 July 2015.

International Expert Group on Nuclear Liability (INLEX)

The 15th regular INLEX meeting was held in Vienna from 28 to 30 April 2015. The Group discussed, *inter alia*, whether there is a need to establish a special liability regime covering radioactive sources; the implications of the entry into force of the CSC; the proposal to revise the paper adopted in 2013 on "Benefits of joining the international nuclear liability regime and corresponding key messages"; revision of the model provisions on nuclear liability in the *Handbook on Nuclear Law* Vol. II; and IAEA/INLEX outreach activities.

The Fourth Workshop on Civil Liability for Nuclear Damage was held in Vienna on 27 April 2015 and was attended by 65 diplomats and experts from 38 member states. The workshop provided participants with an introduction to the international legal regime of civil liability for nuclear damage. It also included a roundtable discussion on topical issues of nuclear liability, moderated by legal experts from the IAEA and INLEX. It covered, among others, the CSC, civil liability for nuclear damage

13. Those contracting parties are: Argentina, Japan, Montenegro, Morocco, Romania, the United Arab Emirates and the United States.

from the perspective of coastal states, the role of insurance and the IAEA's legislative assistance programme available to member states.

A Sub-regional Workshop on Civil Liability for Nuclear Damage was held in Panama from 23 to 25 June 2015, which provided participants with information on the existing international nuclear liability regime and advised them on the development of national implementing legislation.

In addition, a joint IAEA/INLEX mission was held in Mexico in June 2015 to raise awareness among policy makers on the international legal instruments relevant for achieving a global nuclear liability regime.

Legislative assistance activities

The IAEA Secretariat continued to support member states, upon request, under its legislative assistance programme. Several draft national laws were reviewed and comments were provided to the countries concerned. The IAEA Office of Legal Affairs also trained scientific visitors and fellows from a number of member states in various aspects of nuclear law.

A workshop on nuclear law for member states in the Latin American region was held in the Dominican Republic in December 2014, which was attended by 27 participants from 16 member states. The workshop created a forum for an exchange of views on topics relating to relevant international legal instruments and allowed for the planning of future legislative assistance activities in the participating member states based on an assessment of their needs.

In addition, the IAEA Secretariat's outreach capabilities are being further enhanced through, *inter alia*, the development of new online training material and a third volume of the Handbook on Nuclear Law, which will cover various areas of nuclear law beyond the regulatory matters covered in the previous two volumes.

OECD Nuclear Energy Agency (NEA)

GIF Framework Agreement extended for ten years

On 26 February 2015, the Framework Agreement for International Collaboration on Research and Development of Generation IV Nuclear Energy Systems (GIF Framework Agreement) was extended for ten years, paving the way for continued collaboration among participating countries in this important area of generation IV research and development. A signing ceremony was held at the OECD headquarters in the presence of Mr Angel Gurría, OECD Secretary-General and Depositary of the Framework Agreement, and Mr William D. Magwood, IV, NEA Director-General. The Generation IV International Forum (GIF) is a co-operative international endeavour which was set up in 2005 to carry out the research and development needed to establish the feasibility and performance capabilities of the next generation of nuclear energy systems. For more information, see www.gen-4.org.

Technology Roadmap: Nuclear Energy

The 2015 edition of the *Technology Roadmap: Nuclear Energy*, jointly prepared by the International Energy Agency (IEA) and the NEA, was published in January 2015. The new edition of the Roadmap addresses changes since the 2010 edition in the nuclear energy landscape affecting the development of nuclear power, including the Fukushima Daiichi accident, which heightened public concern over the safety of nuclear energy in many countries, and the subsequent safety reviews and development of new safety requirements to ensure even higher levels of safety for existing and future nuclear power plants; the shift towards generation III reactors for

nuclear new build; and the economic and financial crises that lowered energy demand and made the financing of capital-intensive infrastructure projects more challenging, especially in liberalised electricity markets. By identifying these major barriers and providing recommendations on how they can be overcome, the Roadmap aims to assist governments interested in introducing, maintaining or developing nuclear energy technologies to do so in a safe, publicly accepted and affordable manner.

The Roadmap can be downloaded free of charge at the following address: www.oecd-nea.org/pub/techroadmap/techroadmap-2015.pdf.

Steering Committee Policy Debate: Health Effects of Low-dose Radiation

The NEA Steering Committee held a policy debate on the health effects of low-dose radiation on 24 April 2015. Particularly since the Fukushima Daiichi accident, there has been significant public and government interest concerning the radiological risks of low-dose radiation. To address this, the NEA invited some of the world's top experts to the Steering Committee meeting to present the state-of-the-art in radiological epidemiology studies (statistical studies of exposed and non-exposed groups to compare health statuses, e.g. the number of cancer cases, and thus to gauge risk), and radiation biology studies (studies of cellular, tissue and organism effects of exposure to ionising radiation). Discussions indicated that, while scientific uncertainty remains, there are small but statistically significant and biologically visible risks at doses of 50 to 100 mSv. The safety of workers and the public remains the first priority of industry and regulators, recognising that public concerns drive protection to be rather conservative in nature. Research continues in many venues to attempt to refine the understanding of the effect of low doses of ionising radiation.

Multilateral agreements

In an effort to reach a wider audience, and keep the information regarding the status of multilateral agreements more up-to-date, this content has been moved online and is available at: www.oecd-nea.org/law/multilateral-agreements.

Canada

Nuclear Liability and Compensation Act

ENACTMENT OF ACT

120. The *Nuclear Liability and Compensation Act*, whose text is as follows and whose schedule is set out in Schedule 4 to this Act, is enacted:

An Act respecting civil liability and compensation for damage in case of a nuclear incident, repealing the Nuclear Liability Act and making consequential amendments to other acts.

SHORT TITLE

1. This Act may be cited as the *Nuclear Liability and Compensation Act*.

INTERPRETATION

2. The following definitions apply in this Act.

"approved insurer" means an insurer or association of insurers that is designated under section 29 as an approved insurer.

"Contracting State" means a State that has ratified, accepted or approved the Convention in accordance with its Article XVIII or that has acceded to it in accordance with its Article XIX.

"Convention" means the Convention on Supplementary Compensation for Nuclear Damage, done at Vienna on September 12, 1997 and signed by Canada on 3 December, 2013, as amended from time to time.

"Installation State" means a Contracting State within whose territory is situated a nuclear installation as defined in Article 1.I(b) of the Annex to the Convention or, if the nuclear installation is not within the territory of a Contracting State, the Contracting State by which or under whose authority the nuclear installation is operated.

"nuclear fuel" means material that is capable of a self-sustaining nuclear fission chain reaction.

"nuclear incident" means an occurrence or a series of occurrences having the same origin that causes damage for which an operator is liable under this Act.

"nuclear installation" means, other than in the definition "Installation State" and subparagraphs 9(1)(*b*.1)(i) and (*b*.2)(i) and 9(4)(*b*)(i) and (*c*)(i) of the English version, any site or means of transport that is designated under section 7 as a nuclear installation.

"nuclear material" means

(a) nuclear fuel, other than natural uranium or depleted uranium, that can produce energy by a self-sustaining nuclear fission chain reaction outside a nuclear reactor, either alone or in combination with another material; and

(b) radioactive products or waste, other than radioisotopes that have reached the final stage of fabrication so as to be usable for any scientific, medical, agricultural, commercial or industrial purpose.

"nuclear reactor" means a structure containing nuclear fuel arranged such that a self-sustaining nuclear fission chain reaction can occur in the structure without an additional source of neutrons.

"operator" means a person who is designated by a regulation made under section 7 as an operator.

"public funds" means an amount that Contracting States must contribute when a call for funds is made under Article VII.1 of the Convention.

"radioactive products or waste" means

(a) radioactive material that is produced in the production or use of nuclear fuel other than natural uranium or depleted uranium; or

(b) material that is made radioactive by exposure to radiation consequential on or incidental to the production or use of nuclear fuel other than natural uranium or depleted uranium.

"Tribunal" means a nuclear claims tribunal established under subsection 41(1).

PURPOSE OF ACT

3. The purpose of this Act is to govern civil liability and compensation for damage in case of a nuclear incident.

DESIGNATION OF MINISTER

4. The Governor in Council may, by order, designate a minister of the Crown to be the Minister referred to in this Act.

NON APPLICATION

5. (1) This Act does not apply to a nuclear incident that results from an act of war, hostilities, civil war or insurrection, other than a terrorist activity as defined in subsection 83.01(1) of the *Criminal Code*.

(2) This Act does not apply to damage to the nuclear installation of an operator who is responsible for that damage or to any property at the installation that is used in connection with the installation, including property under construction.

HER MAJESTY

6. This Act is binding on Her Majesty in right of Canada or a province.

DESIGNATION OF NUCLEAR INSTALLATIONS AND OPERATORS

7. (1) The Governor in Council may, on the Minister's recommendation and after consultation with the Canadian Nuclear Safety Commission, designate by regulation any site at which is located a facility or facilities that are authorized by a license issued under the *Nuclear Safety and Control Act* and that contain nuclear material as a nuclear installation.

(2) The regulation must describe the site, list the facilities on it that are authorized to contain nuclear material and designate the holder of a license described in subsection (1) as the operator of the nuclear installation.

(3) The regulation may be made before a license has been issued, but it must not come into force before the day on which the license is issued.

(4) The Governor in Council may, on the Minister's recommendation and after consultation with the Canadian Nuclear Safety Commission, designate by regulation any means of transport that is equipped with a nuclear reactor as a nuclear installation and designate by regulation the holder of a license issued under the *Nuclear Safety and Control Act* respecting that means of transport as the operator of the nuclear installation.

LIABILITY FOR NUCLEAR INCIDENTS

OPERATOR'S LIABILITY

8. An operator is not liable for damage that is caused by a nuclear incident except for any liability that is provided for under this Act.

9. (1) An operator – and no person other than an operator – is liable for damage that is caused within Canada or its exclusive economic zone by

(a) ionizing radiation emitted from any source of radiation within, or released from, the operator's nuclear installation;

(b) ionizing radiation emitted from nuclear material being transported

(i) from the operator's nuclear installation until it is placed in another nuclear installation or until liability is assumed by the operator of that other nuclear installation, under the terms of a written contract,

(ii) to the operator's nuclear installation from outside Canada,

(iii) from the operator's nuclear installation to a person who is within the territory of a State that is not a Contracting State until it is unloaded from the means of transport by which it arrived in that State, or

(iv) with the operator's written consent, from a person who is within the territory of a State that is not a Contracting State to the operator's installation, from the time that it is loaded on the means of transport by which it is to be carried from that State;

(b.1) ionizing radiation emitted from nuclear material being transported from the operator's nuclear installation

(i) before liability is assumed under the terms of a written contract, by a person who is within the territory of a Contracting State other than Canada and who is designated or recognized under the laws of that State

as operating a nuclear installation as defined in Article 1.I(b) of the Annex to the Convention, or

(ii) in the absence of a contract, before that person takes charge of the nuclear material;

(b.2) ionizing radiation emitted from nuclear material being transported to the operator's nuclear installation

(i) after liability is assumed by the operator under the terms of a written contract, from a person who is within the territory of a Contracting State other than Canada and who is designated or recognized under the laws of that State as operating a nuclear installation as defined in Article 1.I(b) of the Annex to the Convention, or

(ii) in the absence of a contract, after the operator takes charge of the nuclear material; or

(c) a combination of the radioactive properties and toxic, explosive or other hazardous properties of a source referred to in paragraph (a) or nuclear material referred to in paragraph (*b*), (*b.1*) or (*b.2*).

(2) An operator – and no person other than an operator – is liable for damage that is caused within Canada or its exclusive economic zone if the damage is caused by a preventive measure that is taken under subsection 20(1) in relation to that operator's nuclear installation or in relation to any transportation for which the operator is responsible.

(3) If provided for in regulations made under subsection 70(2) to implement an agreement between Canada and a reciprocating country, an operator – and no person other than an operator – is liable for damage that occurs in the reciprocating country or its exclusive economic zone and that results from the production, processing, transport, storage, use or disposition of the nuclear material for which the operator is responsible.

(4) An operator – and no person other than an operator – is liable for damage that is caused within a Contracting State other than Canada or within that State's exclusive economic zone by

(*a*) ionizing radiation emitted from any source of radiation within, or released from, the operator's nuclear installation;

(*b*) ionizing radiation emitted from nuclear material being transported from the operator's nuclear installation

(i) before liability is assumed, under the terms of a written contract, by a person who is within the territory of the Contracting State other than Canada and who is designated or recognized under the laws of that State as operating a nuclear installation as defined in Article 1.I(b) of the Annex to the Convention, or

(ii) in the absence of a contract, before that person takes charge of the nuclear material;

(*c*) ionizing radiation emitted from nuclear material being transported to the operator's nuclear installation

(i) after liability is assumed by the operator, under the terms of a written contract, from a person who is within the territory of the Contracting State other than Canada and who is designated or recognized under the

laws of that State as operating a nuclear installation as defined in Article 1.I(b) of the Annex to the Convention, or

(ii) in the absence of a contract, after the operator takes charge of the nuclear material; or

(*d*) a combination of the radioactive properties and toxic, explosive or other hazardous properties of a source referred to in paragraph (*a*) or nuclear material referred to in paragraph (*b*) or (*c*).

(5) An operator – and no person other than an operator – is liable for any damage that is caused within a Contracting State other than Canada or within that State's exclusive economic zone if the damage is caused by a preventive measure that is taken under subsection 21(1) in relation to that operator's nuclear installation or in relation to any transportation for which the operator is responsible.

(6) An operator– and no person other than an operator – is liable for damage that is caused within a Contracting State other than Canada or within that State's exclusive economic zone by

(*a*) ionizing radiation emitted from nuclear material being transported

(i) from the operator's nuclear installation to a person who is within the territory of a State that is not a Contracting State until it is unloaded from the means of transport by which it arrived in that State; or

(ii) with the operator's written consent, from a person who is within the territory of a State that is not a Contracting State to the operator's nuclear installation, from the time it is loaded on the means of transport by which it is to be carried from that State; or

(*b*) a combination of the radioactive properties and toxic, explosive or other hazardous properties of nuclear material referred to in paragraph (*a*).

10. (1) The liability of an operator for damage that is caused by a nuclear incident is absolute.

(2) For the purposes of subsection (1), no proof of tort or of fault within the meaning of the *Civil Code of Québec* is required.

11. If liability under this Act is incurred by two or more operators, each is jointly and severally, or solidarily, liable to the extent that it cannot reasonably be determined what portion of the liability is attributable to each operator.

12. An operator is not liable for damage that is suffered by a person if that person intentionally caused the nuclear incident wholly or partly by an act or omission or under circumstances amounting to gross negligence or, in Québec, gross fault.

13. In respect of damage that is caused by a nuclear incident, an operator has no right of recourse against any person other than an individual who intentionally caused the nuclear incident by an act or omission.

COMPENSABLE DAMAGE

14. Bodily injury or death and damage to property that are caused by a nuclear incident are compensable.

15. Psychological trauma that is suffered by a person is compensable if it results from bodily injury to that person that was caused by a nuclear incident.

16. Economic loss that is incurred by a person as a result of their bodily injury or damage to their property and that is caused by a nuclear incident, or psychological trauma that results from that bodily injury, is compensable.

17. (1) The costs that are incurred by a person who loses the use of property as a result of a nuclear incident and the resulting wage loss by that person's employees are compensable.

(2) If a nuclear incident occurs at a nuclear installation that generates electricity, the costs resulting from a failure of the installation to provide electricity are not compensable under subsection (1).

18. Reasonable costs of remedial measures that are taken to repair, reduce or mitigate environmental damage that is caused by a nuclear incident are compensable if the measures are ordered by an authority acting under federal or provincial legislation relating to environmental protection.

19. Unless the damage is insignificant, reasonable costs of remedial measures that are taken to repair, reduce or mitigate environmental damage that is caused by a nuclear incident are compensable if the measures are ordered by an authority of a Contracting State other than Canada acting under the laws of that State relating to environmental protection.

20. (1) If an authority – acting under a nuclear emergency scheme established under federal or provincial legislation – has recommended that measures be taken in a specified area to prevent damage, the following costs and losses of persons who live in, carry on business in, work in or are present in the area are compensable:

(*a*) the reasonable costs of the measures; and

(*b*) the costs and economic loss – including lost wages – arising from the loss of use of property.

(2) For greater certainty, any federal, provincial or municipal authority, or any of its agencies, that establishes or implements a nuclear emergency scheme is not to be compensated under subsection (1).

21. (1) If an authority – acting under an emergency scheme established under the laws of a Contracting State other than Canada – has recommended that, because of grave and imminent danger of damage, measures be taken in a specified area to prevent such damage, the following costs and losses of persons who live in, carry on business in, work in or are present in the area are compensable:

(*a*) the reasonable costs of the measures; and

(*b*) the costs and economic loss – including lost wages – arising from the loss of use of property.

(2) For greater certainty, any authority, or any of its agencies, that establishes or implements a nuclear emergency scheme is not to be compensated under subsection (1).

22. Any damage resulting from a nuclear incident and any concomitant non-nuclear incident is deemed to be damage that is caused by the nuclear incident to the

extent that it cannot be identified as having been caused only by the non-nuclear incident.

23. If a nuclear incident occurs during the transportation of nuclear material to or from a nuclear installation, or any storage incidental to the transportation, damage to the means of transport or the structure or site where the nuclear material is stored is not compensable under this Act.

FINANCIAL PROVISIONS

24. (1) The liability of an operator under this Act for damage resulting from a nuclear incident is limited to

(*a*) $650 million for a nuclear incident arising within one year after the day on which this paragraph comes into force;

(*b*) $750 million for a nuclear incident arising within one year after the year referred to in paragraph (*a*);

(*c*) $850 million for a nuclear incident arising within one year after the year referred to in paragraph (*b*); and

(*d*) $1 billion for a nuclear incident arising after the year referred to in paragraph (*c*).

(2) The Governor in Council may, by regulation,

(*a*) amend subsection (1) to increase any amount of liability; or

(*b*) reduce the amount of liability applicable to an operator of a nuclear installation, or operators of a class of nuclear installations, having regard to the nature of the installation and the nuclear material contained in it.

(3) Subsection (1) does not relieve an operator from payment of the costs of administering claims, court costs or interest on compensation.

25. If a nuclear incident occurs during the transportation of nuclear material or storage incidental to the transportation and more than one operator is liable for the damage that is caused by that nuclear incident, the total liability of those operators is limited to the amount referred to in subsection 24(1) in relation to one operator.

26. (1) The Minister must review the limit of liability, referred to in subsection 24(1), on a regular basis and at least once every five years.

(2) In carrying out the review, the Minister must have regard to

(*a*) changes in the Consumer Price Index, as published by Statistics Canada under the authority of the *Statistics Act*;

(*b*) financial security requirements under international agreements respecting nuclear liability; and

(*c*) any other considerations that the Minister considers relevant.

27. (1) An operator, other than a department listed in Schedule I to the Financial Administration Act, must maintain, for each of the operator's nuclear

installations, financial security to compensate persons who suffer damage that is caused by a nuclear incident in an amount that is equal to the amount referred to in subsection 24(1) or, if the operator is subject to a regulation made under paragraph 24(2)(*b*), the amount set out in that regulation.

(2) The Minister may require an operator, as defined in Article 1.I(d) of the Annex to the Convention but who is not an operator as defined in section 2 of this Act, and who is transporting nuclear material within Canada to maintain financial security in an amount prescribed by regulation but not more than the amount referred to in subsection 24(1) to compensate persons who suffer damage that is caused by a nuclear incident.

(3) Subsection (2) does not apply

(*a*) to transport by sea if, under international law, there is a right of entry into a Canadian port in a case of distress, or if there is a right of innocent passage through Canadian territory; and

(*b*) to transport by air if, under an agreement to which Canada is a party or under international law, there is a right to fly over or land on Canadian territory.

(4) The financial security is not to be used by an operator referred to in subsection (1) to pay their costs of administering claims, court costs, legal fees or interest on compensation.

28. (1) The financial security is to be in the form of insurance with an approved insurer, containing only the terms and conditions set out in a standard insurance policy that is approved by the Minister.

(2) The Minister may enter into an agreement with the operator that authorizes that a portion of the financial security be an alternate financial security.

(3) The amount of the alternate financial security must not, unless another percentage has been fixed by regulation, exceed 50% of the operator's liability that is applicable under section 24.

(4) The agreement must identify the financial instrument being used as the alternate financial security, specify its dollar value and set out any conditions that the Minister considers appropriate, including a requirement that the operator submit reports or allow the Minister to undertake financial audits in respect of the security or that the operator pay a fee for the authorisation of the security or for the audits.

(5) The Minister may amend the conditions of an agreement or revoke an agreement.

29. The Minister may, subject to any terms and conditions that he or she may impose, designate as an approved insurer any insurer or association of insurers that, in his or her opinion, is qualified to fulfil the obligations of an approved insurer under this Act.

30. An approved insurer or any provider of an alternate financial security referred to in subsection 28(2) may suspend or cancel an operator's insurance or alternate financial security only if written notice is given to the Minister at least two months before the suspension or cancellation, but, if the insurance or security

relates to the transportation of nuclear material, the cancellation or suspension is not to take effect during the period of transportation to which it relates.

31. (1) The Minister may enter into an indemnity agreement with an operator under which Her Majesty in right of Canada covers any risks that, in the Minister's opinion, would not be assumed by an approved insurer.

(2) If the nuclear damage is caused by an operator who is subject to a regulation made under paragraph 24(2)(*b*) and that damage exceeds that operator's liability under that regulation, the indemnity agreement may also provide that Her Majesty in right of Canada must cover that operator for the difference between the operator's liability under the regulation and the liability of any other operator under subsection 24(1). Despite the indemnity agreement, the operator remains liable for the damage.

(3) Any indemnity agreement may provide for the payment of fees to Her Majesty in right of Canada.

(4) The Minister must cause a copy of each indemnity agreement that is entered into under this section to be laid before each House of Parliament on any of the first 30 days on which that House is sitting after the agreement is entered into.

32. (1) The Nuclear Liability Reinsurance Account, established in the accounts of Canada under the *Nuclear Liability Act*, is continued as the Nuclear Liability Account to which are to be

(*a*) credited all amounts received by Her Majesty in right of Canada as fees under an indemnity agreement; and

(*b*) charged all amounts that are payable by Her Majesty in right of Canada under an indemnity agreement.

(2) If the amount standing to the credit of the Nuclear Liability Account is insufficient for the payment of the amounts that are required under the terms of an indemnity agreement, an amount that is sufficient to meet the deficit is, with the Minister of Finance's approval, to be paid from the Consolidated Revenue Fund and credited to the Nuclear Liability Account.

PRESERVATION OF CERTAIN RIGHTS AND OBLIGATIONS

33. Nothing in this Act is to be construed as limiting any right or obligation arising under

(*a*) any contract of insurance;

(*b*) any scheme or system of health insurance, employees' compensation or occupational disease compensation; and

(*c*) any survivor or disability provision of a pension plan.

JUDICIAL PROCEEDINGS

34. (1) An action involving damage that is caused by a nuclear incident is to be brought in the court in Canada that has jurisdiction in the place where the incident occurs.

(2) The Federal Court has jurisdiction if the nuclear incident occurs

(*a*) in more than one province;

(*b*) partly within a province and partly within Canada's exclusive economic zone; or

(*c*) within Canada's exclusive economic zone.

(3) If the nuclear incident occurs outside the territory or the exclusive economic zone of any Contracting State, or the place where the nuclear incident occurred cannot be determined with certainty, the Federal Court has jurisdiction if the nuclear incident is caused by an operator.

(4) If a court of a Contracting State other than Canada has concurrent jurisdiction for a claim or action for damage under this Act, Canada and the other Contracting State must determine, by agreement, which court is to have exclusive jurisdiction.

(5) A court of competent jurisdiction in Canada must, as soon as feasible on receipt of an application, recognize and enforce a judgment of a court of a Contracting State other than Canada that, in addition to meeting the criteria under Canadian law for being recognized in Canada, is rendered in accordance with the Convention.

(6) Except as provided in this Act, no court in Canada and no tribunal has jurisdiction to entertain any application or grant any relief or remedy relating to damage that occurs outside Canada or its exclusive economic zone.

35. (1) An action or claim must be brought within three years

(*a*) in the case of an action or claim for loss of life, after the day on which the person bringing the action or making the claim had knowledge or ought reasonably to have had knowledge of both the loss of life and the identity of the operator who is responsible for the loss of life;

(*b*) in the case where conclusive evidence of the loss of life is not available, after the day on which both an order presuming the person to be dead is made by a court having jurisdiction and the person bringing the action or making the claim had knowledge or ought reasonably to have had knowledge of the identity of the operator who is responsible for the presumed loss of life; and

(*c*) in any other case, after the day on which the person bringing the action or making the claim had knowledge or ought reasonably to have had knowledge of both the damage and the identity of the operator who is responsible for the damage.

(2) No action or claim is to be brought

(*a*) in relation to bodily injury or death, 30 years after the day on which the nuclear incident to which the action or claim relates occurred; and

(*b*) in any other case, 10 years after the day on which the nuclear incident to which the action or claim relates occurred.

(3) Despite subsection (2), if the damage is the result of a nuclear incident involving nuclear material that was, at the time of the nuclear incident, lost,

stolen, jettisoned or abandoned, no action or claim is to be brought 20 years after the day on which the loss, theft, jettison or abandonment occurred.

(4) The Governor in Council may, by regulation, extend the period set out in subsection (1).

NUCLEAR CLAIMS TRIBUNAL

GOVERNOR IN COUNCIL'S DECLARATION

36. (1) The Governor in Council may declare that claims in respect of a nuclear incident are to be dealt with by a Tribunal, if he or she believes that it is in the public interest to do so, having regard to the extent and the estimated cost of the damage, and the advantages of having the claims dealt with by an administrative tribunal.

(2) The declaration is not a statutory instrument for the purposes of the *Statutory Instruments Act*, but it must be published, without delay, in the *Canada Gazette*, Part II.

37. (1) Section 34 ceases to apply in respect of a nuclear incident on the day on which a declaration is made under subsection 36(1), and any proceedings brought or taken before the declaration is made are discontinued.

(2) Any claims that could have been made before the declaration is made are, after the day on which it is made, only to be brought before the Tribunal.

REPORT TO PARLIAMENT

38. The Minister must, without delay, after a declaration is made under subsection 36(1), cause a report estimating the cost of the indemnification for the damage arising from a nuclear incident to be laid before each House of Parliament.

INTERIM FINANCIAL ASSISTANCE

39. (1) During the period that begins when a declaration is made under subsection 36(1) and ends when the notice is published under subsection 42(2), the Minister may pay interim financial assistance to persons who, in the Minister's opinion, have suffered damage as a result of the nuclear incident to which the declaration relates. The Minister must inform the Tribunal of the names of those persons and the amounts paid.

(2) The maximum amount that is to be paid under subsection (1) must not exceed 20% of the difference between

(a) the amount set out in subsection 24(1), and

(b) the total amounts that are paid by the operator, before the declaration is made under subsection 36(1), to compensate persons for damage arising from the nuclear incident.

40. The Minister may enter into an agreement with any person, association of insurers or province for the carrying out of the Minister's duties or functions by that person, association of insurers or province in relation to the payment of interim financial assistance.

ESTABLISHMENT OF A NUCLEAR CLAIMS TRIBUNAL

41. (1) The Governor in Council must, as soon as feasible after a declaration is made under subsection 36(1), establish a nuclear claims Tribunal and designate the location of its head office in Canada.

(2) The Tribunal's purpose is to examine and adjudicate claims for damage arising from the nuclear incident as expeditiously as the circumstances and considerations of fairness permit.

(3) The Tribunal must carry out its duties and functions with respect to claims for damage in an equitable manner, without discrimination on the basis of nationality or residence.

42. (1) The Tribunal must notify the public, in a manner that it considers appropriate, of the details of its purpose and how to obtain information on bringing a claim.

(2) A notice of the Tribunal's purpose and how to obtain information on bringing a claim must also be published, without delay, in the *Canada Gazette*.

43. (1) The Governor in Council must appoint a minimum of five persons to the Tribunal, one of whom is to be designated as the chairperson.

(2) A majority of the members of the Tribunal are to be appointed from among persons who are sitting or retired judges of a superior court or members of at least 10 years' standing at the bar of a province or the Chambre des notaires du Québec.

(3) The members are to be paid the remuneration and expenses fixed by the Governor in Council.

44. Each member of the Tribunal is to be appointed to hold office during good behaviour for a term that the Governor in Council considers appropriate and may be removed for cause.

45. No civil proceedings lie against any member of the Tribunal for anything done or omitted to be done by the member in good faith in the exercise or purported exercise of a power or in the performance or purported performance of a duty or function of the Tribunal.

46. The Tribunal may employ the staff that it considers necessary for the proper conduct of its duties or functions, prescribe their duties and, subject to any regulations, their terms and conditions of employment and, with the approval of the Treasury Board, fix and pay their remuneration.

47. The Tribunal may engage, on a temporary basis, the services of counsel and other persons having technical or specialized knowledge to assist the Tribunal in its work, establish the terms and conditions of their employment and, with the approval of the Treasury Board, fix and pay their remuneration and expenses.

48. In the event of an inconsistency between a provision of the *Judges Act* and any provision of this Act that is applicable to a sitting or retired judge, the *Judges Act* prevails to the extent of the inconsistency.

TRIBUNAL'S POWERS AND DUTIES

49. The Tribunal is to hold its hearings in Canada at the times and locations that it considers appropriate.

50. The Attorney General of Canada and the competent authority of any other Contracting State may intervene in proceedings that are before the Tribunal.

51. (1) The Tribunal has, with respect to the attendance, swearing and examination of witnesses, the production and inspection of documents, the enforcement of its orders and other matters that are necessary or proper for the due exercise of its jurisdiction, all of the powers, rights and privileges that are vested in a superior court.

(2) The Tribunal is not, in the hearing of any claim, bound by the legal rules of evidence, but it must not receive as evidence anything that would be inadmissible in a court by reason of any privilege under the law of evidence.

(3) The Tribunal may issue commissions to take evidence outside Canada and may make orders for that purpose and for the return and use of the evidence so obtained.

52. The Tribunal may require persons claiming compensation to undergo medical or other examinations that are, in the Tribunal's opinion, reasonably necessary to enable it to determine their claims.

53. The Tribunal may refuse to hear any claim referred to it that it considers to be frivolous or vexatious.

54. The Tribunal must, at the Minister's request, submit to him or her a report on its activities. The Minister must cause the report to be laid before each House of Parliament on any of the first 15 days on which that House is sitting after he or she receives it.

55. The Tribunal may make any rules that it considers necessary for the exercise of its powers and the performance of its duties and functions, including rules respecting

(a) procedures for bringing claims;

(b) the form and manner in which evidence is to be submitted;

(c) a quorum;

(d) procedures that claims officers are to follow in dealing with claims;

(e) fees and travel expenses that are to be paid to witnesses;

(f) the allowance of costs; and

(g) appeals and rehearings

CLAIMS

56. (1) The chairperson may establish panels of the Tribunal consisting of one or more members to hear claims.

(2) The Tribunal may, in order to process claims expeditiously, establish classes of claims that may be determined by the claims officer without an oral hearing and designate as a claims officer anyone that it considers qualified.

(3) A panel or claims officer must exercise the powers and perform the duties and functions of the Tribunal with respect to claims that are before that panel or claims officer.

57. The chairperson must assign a claim to a panel or claims officer and notify the claimant, the operator and the Minister of the assignment.

58. Panel hearings are to be held in public. However, a panel may hold all or part of a hearing in private if, in its opinion, a person's privacy interest outweighs the principle that hearings be open to the public.

59. (1) The Tribunal may award interim compensation in respect of a claim that is heard by it before it makes a decision with respect to the claim.

(2) The Tribunal must inform the Minister of the amount of the interim compensation awarded, and the Minister must pay that amount to the claimant.

60. (1) The Tribunal must notify the claim- ant and the operator of its decision with respect to the claim.

(2) If the Tribunal decides to award compensation in respect of a claim, the notification must also be sent to the Minister and must indicate

(a) the amount of the award;

(b) any reduction in that amount applicable under the regulations; and

(c) any amounts that have already been paid with respect to the claim in accordance with this Act.

(3) The amount of the award must not include any costs awarded to the claimant in any proceeding that is before the Tribunal or any interest payable on that award.

REHEARING AND APPEAL

61. A claimant or operator who is dissatisfied with a claims officer's decision may, within 30 days after receiving notification of the decision, apply to the Tribunal for a rehearing by a panel.

62. (1) If a claim has been heard by a panel that consists of fewer than three members, the claimant or operator may, within 30 days after receiving notification of the decision, apply in writing to the chairperson for leave to appeal.

(2) The appeal is to be heard and decided by a panel consisting of three other members.

(3) The appeal is to be heard on the basis of the record of the panel whose decision is appealed and on the submissions of interested parties. The panel hearing the appeal may, in exceptional circumstances, if, in its opinion, it is essential in the interests of justice to do so, admit additional evidence or testimony.

63. Subject to sections 61 and 62, every decision of the Tribunal is final and conclusive and is not to be questioned or reviewed in any court except in accordance with the *Federal Courts Act* on the grounds referred to in paragraph 18.1(4)(*a*), (*b*) or (*e*) of that Act.

FINANCIAL PROVISIONS

64. At the end of the period to apply for a rehearing or make an appeal, the Minister must pay to the claimant the amount of the award less the total of the amounts referred to in para- graphs 60(2)(*b*) and (*c*).

65. Any overpayment is a debt that is due to Her Majesty in right of Canada and may be recovered in accordance with section 155 of the *Financial Administration Act*.

66. (1) All payments made by the Minister are to be paid out of the Nuclear Liability Account.

(2) If the amount standing to the credit of the Nuclear Liability Account is insufficient for the payment of the amounts that are required, an amount that is sufficient to meet the deficit is, with the Minister of Finance's approval, to be paid from the Consolidated Revenue Fund and credited to the Nuclear Liability Account.

67. (1) When a declaration is made under subsection 36(1), the operator who is liable for the damage that is caused by a nuclear incident must pay to Her Majesty in right of Canada an amount that is equal to the lesser of

(*a*) the amount set out in subsection 24(1) – or, if the operator is subject to a regulation made under paragraph 24(2)(*b*), the amount set out in that regulation – less the total amounts that were paid by the operator to compensate persons for damage arising from the nuclear incident before the declaration under subsection 36(1) is made, and

(*b*) the total of all amounts that are paid by the Minister under section 64.

(2) If the operator fails to pay any amount that is due, it must be paid to Her Majesty in right of Canada by

(*a*) the approved insurer, for the financial security that is in the form of insurance; or

(*b*) the issuer of the financial instrument, for alternate financial security.

(3) The operator, the approved insurer or the issuer of the financial instrument, as the case may be, must pay to Her Majesty in right of Canada, at the Minister's request, any amount that is specified in the request.

(4) The total amount that is requested by the Minister under subsection (3) in respect of any year must not be more than the total amount that is paid by the Minister under section 39, subsection 59(2) and section 64.

(5) An amount that is not paid as required under subsection (3) is a debt that is due to Her Majesty in right of Canada and may be recovered in accordance with section 155 of the *Financial Administration Act*.

(6) Any amount received by Her Majesty in right of Canada under this section is to be credited to the Nuclear Liability Account.

68. (1) The Tribunal must not award, in respect of a nuclear incident, an amount that is more than the amount set out in subsection 24(1) less the total of all amounts that are paid by the operator to compensate persons for damage arising from the nuclear incident before the declaration is made under subsection 36(1).

(2) Despite subsection (1), if the Minister makes a call for public funds under subsection 72(1), the Tribunal may award an additional amount of funds that are equal to the amount of public funds that are paid by Contracting States.

(3) If further funds are appropriated by Parliament to provide compensation for damage arising from the nuclear incident, the Tribunal may award those further funds for the damage.

69. (1) If a regulation made under paragraph 80(*b*) is amended, the Tribunal must inform the Minister of any change to applicable reductions that is to the advantage of any claimant who was not fully compensated because of the previous regulation.

(2) The Minister must pay to the claimant the difference between the amount that has already been paid and the amount that would be paid under the amended regulation.

(3) If a regulation made under paragraph 80(c) is amended, the Tribunal may consider any new claim for which compensation could not be awarded because of the previous regulation.

RECIPROCATING AGREEMENTS

70. (1) If in the Governor in Council's opinion satisfactory arrangements exist in any country for compensation in that country and in Canada for damage resulting from the production, processing, transport, storage, use or disposition of nuclear material, he or she may declare that country to be a reciprocating country for the purposes of this Act.

(2) The Governor in Council may, with respect to a reciprocating country, make any regulations that he or she considers necessary to implement any agreement between Canada and the reciprocating country relating to damage resulting from the production, processing, transport, storage, use or disposition of nuclear material.

OTHER INTERNATIONAL OBLIGATIONS

71. (1) When a call for public funds is made under subsection 72(1), those funds are to be used to compensate the damage that is suffered, if it

(*a*) occurs in the territory of a Contracting State;

(*b*) occurs in or above the exclusive economic zone of a Contracting State or on the continental shelf of a Contracting State, and relates to the exploitation or exploration of the natural resources of that exclusive economic zone or continental shelf; or

(*c*) occurs in or above the maritime areas beyond the territorial sea of a Contracting State – on board or by a ship flying the flag of a Contracting State, on board or by an aircraft registered in a Contracting State, on or by an artificial island, on or by an installation or a structure under a Contracting State's jurisdiction or by a national of a Contracting State.

(2) The public funds are not to be used to compensate the damage that is referred to in paragraph (1)(*c*) if the damage that is suffered occurs in the territorial sea of a non-Contracting State.

(3) The public funds may also be used to compensate the damage that is caused in one of the areas referred to in paragraph (1)(*a*) or (*b*) by a preventive measure that was taken under subsection 20(1) or 21(1) in relation to the operator's nuclear installation or in relation to any transportation for which the operator is responsible.

(4) In subsection (1), a "national of a Contracting State" includes any subdivision of the Contracting State and any entity that is established or incorporated in that State.

72. (1) If in the Minister's opinion a nuclear incident for which the Tribunal or any other Canadian court has jurisdiction will result, or is likely to result, in compensation for damage that exceeds the amount made available by Canada, under Article III.1(a) of the Convention, and public funds may be necessary to compensate the damages that are caused in one of the areas that are referred to in subsection 71(1), he or she must immediately give notice under Article VI of the Convention to all other Contracting States and, if in his or her opinion public funds are necessary to compensate the damage, he or she must make a call for public funds under Article VII.1 of the Convention.

(2) When the Minister makes a call for public funds, he or she must calculate the amount of public funds that are to be contributed by Canada, in accordance with the formula provided for by regulation.

(3) If the amount standing to the credit of the Nuclear Liability Account is insufficient for the purposes of subsection (2), an amount that is sufficient to meet the deficit is, with the Minister of Finance's approval, to be paid from the Consolidated Revenue Fund and credited to the Nuclear Liability Account.

(4) The Minister must have all public funds to be contributed by Canada and other Contracting States, as a result of a call for public funds, credited to the Nuclear Liability Account.

(5) When an award is final or when a decision concerning an action for damage is final or not subject to an appeal, the public funds that are payable by the Minister to compensate the damages that are caused in one of the areas that are referred to in subsection 71(1) are to be paid out of the Nuclear Liability Account.

73. (1) When a Contracting State other than Canada makes a call for public funds under Article VII.1 of the Convention and if in the Minister's opinion the claims for compensation cannot be satisfied out of the amount that the Installation State has made available in accordance with Article III.1(a) of the Convention, the Minister must, without delay, cause public funds to be paid by Canada to that Contracting State that are calculated in accordance with the formula provided for by regulation.

(2) If the amount standing to the credit of the Nuclear Liability Account is insufficient for the purposes of subsection (1), an amount that is sufficient to meet the deficit is, with the Minister of Finance's approval, to be paid from the Consolidated Revenue Fund and credited to the Nuclear Liability Account.

(3) Any public funds that are payable are to be paid by the Minister out of the Nuclear Liability Account.

74. Members of the nuclear industry who are prescribed by regulations must reimburse the Minister, in the prescribed manner and by the prescribed proportion, for any

public funds that were contributed by Canada under section 72 or 73, in accordance with the prescribed formula, within the fiscal year in which the payments are made. The amounts received by the Minister are to be credited to the Nuclear Liability Account.

75. The Minister must recognize a settlement by a Contracting State other than Canada that is made in accordance with the laws of that Contracting State and that is, in respect of the payment out of public funds, for compensation for the damage to which the Convention applies.

76. (1) If the public funds that were contributed by Canada under section 72 have been paid by the Minister, the Attorney General of Canada may exercise an operator's right of recourse under section 13.

(2) If public funds were contributed by a Contracting State other than Canada under Article VII.2 of the Convention, that Contracting State may exercise an operator's right of recourse under section 13.

(3) The Attorney General of Canada may, at the request of a Contracting State other than Canada that contributed public funds under Article VII.2 of the Convention, exercise an operator's right of recourse under section 13 on that Contracting State's behalf.

(4) If, despite the request referred to in subsection (3), the Attorney General of Canada does not exercise an operator's right of recourse under section 13 within three months after that request, the Contracting State may exercise that right.

(5) The Minister must, within a reasonable time, distribute any public funds recovered under subsection (3) to the Contracting States in proportion to the public funds that they contributed.

OFFENCE AND PUNISHMENT

77. (1) An operator who contravenes sub- section 27(1) or who does not hold financial security in the form and manner required by section 28 commits an offence and is liable on summary conviction to a fine of not more than $300,000 for each day on which the offence is committed or continued.

(2) No operator is to be found guilty of the offence if it is established that the operator exercised due diligence to prevent its commission.

REGULATIONS

78. The Governor in Council may make regulations

(*a*) fixing another percentage for the purpose of subsection 28(3);

(*b*) prescribing classes of nuclear installations;

(*c*) providing for the formula that is to be used to calculate the amount referred to in subsections 72(2) and 73(1);

(*d*) prescribing the members of the nuclear industry who are required to reimburse the Minister under section 74, and respecting the manner of calculating the amount of those payments and the manner in which those payments are to be made;

(*e*) prescribing any matter or thing that under this Act is to be or may be prescribed; and

(*f*) generally, for carrying out the purposes and provisions of this Act.

79. The Governor in Council may make regulations respecting the Tribunal, including regulations

(*a*) prescribing the terms and conditions of appointment of its members;

(*b*) respecting conflict of interest;

(*c*) prescribing the chairperson's powers and duties;

(*d*) respecting the absence or incapacity of the chairperson or another member; and

(*e*) respecting the hiring and terms and conditions of employment of claims officers and other employees of the Tribunal.

80. The Governor in Council may make regulations respecting the compensation that may be awarded by the Tribunal, including regulations

(*a*) establishing priorities for classes of damage;

(*b*) reducing awards on a pro rata basis for specified classes of damage and fixing a maximum award within a specified class of damage, for the purposes of paragraph 60(2)(*b*); and

(*c*) establishing classes of damage for which compensation is not to be awarded.

AMENDMENTS TO THE NUCLEAR LIABILITY AND COMPENSATION ACT

121. (1) Subparagraph 9(1)(*b*)(ii) of the *Nuclear Liability and Compensation Act* is repealed.

(2) Subsection 9(3) of the Act is repealed.

122. Section 70 of the Act is repealed.

CONSEQUENTIAL AMENDMENTS

Transportation of Dangerous Goods Act, 1992

123. Subsection 22(7) of the *Transportation of Dangerous Goods Act*, 1992 is replaced by the following:

(7) Nothing in this section relieves an operator, as defined in section 2 of the *Nuclear Liability and Compensation Act*, from any duty or liability imposed on them under that Act.

Nuclear Safety and Control Act

124. Subsection 42(3) of the *Nuclear Safety and Control Act* is replaced by the following:

(3) Nothing in this section shall be construed as limiting an operator's liability under the *Nuclear Liability and Compensation Act*.

125. Section 64 of the Act is replaced by the following:

64. Nothing in section 58, 59, 60, 62 or 63 shall be construed as restricting

(a) any right, obligation or liability of any person arising under the *Nuclear Liability and Compensation Act*; or

(b) the jurisdiction of a nuclear claims tribunal established under the *Nuclear Liability and Compensation Act*.

126. Section 82 of the Act is repealed.

TERMINOLOGY

127. (1) Unless the context requires otherwise, "Nuclear Liability Reinsurance Account" is replaced with "Nuclear Liability Account" in any other Act of Parliament.

(2) Unless the context requires otherwise, "Nuclear Liability Reinsurance Account" is replaced with "Nuclear Liability Account" in any regulation, as defined in section 2 of the Statutory Instruments Act, made under an Act of Parliament.

REPEAL

128. The *Nuclear Liability Act*, chapter N-28 of the Revised Statutes of Canada, 1985, is repealed.

COMING INTO FORCE

129. (1) The following provisions of the *Nuclear Liability and Compensation Act*, as enacted by section 120, come into force on a day or days to be fixed by order of the Governor in Council: section 1, the definitions "approved insurer", "nuclear fuel", "nuclear incident", "nuclear installation" – except for the words "other than in the definition "Installation State" and subparagraphs 9(1)(b.1)(i) and (b.2)(i) and 9(4)(b)(i) and (c)(i) of the English version" – "nuclear material", "nuclear reactor", "operator", "radioactive products or waste" and "Tribunal" in section 2, sections 3 to 8, paragraph 9(1)(a), subparagraphs 9(1)(b)(i) and (ii), paragraph 9(1)(c) – except when the combination is in relation to materials referred to in subparagraph 9(1)(b)(iii) or (iv) or paragraph 9(1)(b.1) or (b.2) – subsections 9(2) and (3), sections 10 to 18, 20 and 22 to 26, subsections 27(1) and (4), sections 28 to 33, subsections 34(1), (2) and (6), sections 35 to 40, subsections 41(1) and (2), sections 42 to 49 and 51 to 67, subsections 68(1) and (3), sections 69, 70 and 77, paragraphs 78(a), (b), (e) and (f) and sections 79 and 80.

(2) The following provisions of the *Nuclear Liability and Compensation Act*, as enacted by section 120, come into force on a day to be fixed by order of the Governor in Council, but that day may not be earlier than the day on which the Convention, as defined in section 2 of that Act, comes into force: the definitions "Contracting State", "Convention", "Installation State", the words "other than in the definition "Installation State" and subparagraphs 9(1)(b.1)(i) and (b.2)(i) and 9(4)(b)(i) and (c)(i) of the English version" in the definition "nuclear installation" and the definition "public funds" in section 2, sub- paragraphs 9(1)(b)(iii) and (iv), paragraphs 9(1)(b.1) to (c) – when the combination is in relation to materials referred to in subparagraph 9(1)(b)(iii) or (iv), paragraph 9(1)(b.1) or (b.2) – subsections 9(4) to (6), sections 19 and 21, subsections 27(2) and (3), 34(3) to (5) and 41(3), section 50, subsection 68(2), sections 71 to 76 and paragraphs 78(c) and (d).

(3) Sections 121 to 128 come into force on a day or days to be fixed by order of the Governor in Council.

SCHEDULE 4
(Section 120)

SCHEDULE

(Section 2 and subsections 9(4), 27(2), 72(1), 73(1) and 76(2) and (3))

CONVENTION ON SUPPLEMENTARY COMPENSATION FOR NUCLEAR DAMAGE

PART 1

CERTAIN ARTICLES OF THE CONVENTION

Article III

...

Undertaking

1. Compensation in respect of nuclear damage per nuclear incident shall be ensured by the following means:

(a) (i) the Installation State shall ensure the availability of 300 million SDRs or a greater amount that it may have specified to the Depositary at any time prior to the nuclear incident, or a transitional amount pursuant to subparagraph (ii);

(ii) a Contracting Party may establish for the maximum of 10 years from the date of the opening for signature of this Convention, a transitional amount of at least 150 million SDRs in respect of a nuclear incident occurring within that period.

...

Article VI

Notification of Nuclear Damage

Without prejudice to obligations which Contracting Parties may have under other international agreements, the Contracting Party whose courts have jurisdiction shall inform the other Contracting Parties of a nuclear incident as soon as it appears that the damage caused by such incident exceeds, or is likely to exceed, the amount available under Article 111.1 (a) and that contributions under Article 111.1 (b) may be required. The Contracting Parties shall without delay make all the necessary arrangements to settle the procedure for their relations in this connection.

Article VII

Call for Funds

1. Following the notification referred to in Article VI, and subject to Article X.3, the Contracting Party whose courts have jurisdiction shall request the other Contracting Parties to make available the public funds required under Article 111.1 (b) to the extent and when they are actually required and shall have exclusive competence to disburse such funds.

2. Independently of existing or future regulations concerning currency or transfers, Contracting Parties shall authorize the transfer and payment of any contribution provided pursuant to Article III.I (b) without any restriction.

Article VIII

List of Nuclear Installations

1. Each Contracting State shall, at the time when it deposits its instrument of ratification, acceptance, approval or accession, communicate to the Depositary a complete listing of all nuclear installations referred to in Article IV.3. The listing shall contain the necessary particulars for the purpose of the calculation of contributions.

2. Each Contracting State shall promptly communicate to the Depositary all modifications to be made to the list. Where such modifications include the addition of a nuclear installation, the communication must be made at least three months before the expected date when nuclear material will be introduced into the installation.

3. If a Contracting Party is of the opinion that the particulars, or any modification to be made to the list communicated by a Contracting State pursuant to paragraphs 1 and 2, do not comply with the provisions, it may raise objections thereto by addressing them to the Depositary within three months from the date on which it has received notice pursuant to paragraph 5. The Depositary shall forthwith communicate this objection to the State to whose information the objection has been raised. Any unresolved differences shall be dealt with in accordance with the dispute settlement procedure laid down in Article XVI.

4. The Depositary shall maintain, update and annually circulate to all Contracting States the list of nuclear installations established in accordance with this Article. Such list shall consist of all the particulars and modifications referred to in this Article, it being understood that objections submitted under this Article shall have effect retrospective to the date on which they were raised, if they are sustained.

5. The Depositary shall give notice as soon as possible to each Contracting Party of the communications and objections which it has received pursuant to this Article.

...

Article XVIII

Ratification, Acceptance, Approval

1. This Convention shall be subject to ratification, acceptance or approval by the signatory States. An instrument of ratification, acceptance or approval shall be accepted only from a State which is a Party to either the Vienna Convention or the Paris Convention, or a State which declares that its national law complies with the provisions of the Annex to this Convention, provided that, in the case of a State having on its territory a nuclear installation as defined in the Convention on Nuclear Safety of 17 June 1994, it is a Contracting State to that Convention.

2. The instruments of ratification, acceptance or approval shall be deposited with the Director-General of the International Atomic Energy Agency who shall act as the Depositary of this Convention.

3. A Contracting Party shall provide the Depositary with a copy, in one of the official languages of the United Nations, of the provisions of its national law referred to in Article II.1 and amendments thereto, including any specification made pursuant to Article III. I (a), Article XI.2, or a transitional amount pursuant to Article III.1 (a)(ii). Copies of such provisions shall be circulated by the Depositary to all other Contracting Parties.

Article XIX

Accession

1. After its entry into force, any State which has not signed this Convention may accede to it. An instrument of accession shall be accepted only from a State which is a Party to either the Vienna Convention or the Paris Convention, or a State which declares that its national law complies with the provisions of the Annex to this Convention, provided that, in the case of a State having on its territory a nuclear installation as defined in the Convention on Nuclear Safety of 17 June 1994, it is a Contracting State to that Convention.

2. The instruments of accession shall be deposited with the Director-General of the International Atomic Energy Agency.

3. A Contracting Party shall provide the Depositary with a copy, in one of the official languages of the United Nations, of the provisions of its national law referred to in Article II.1 and amendments thereto, including any specification made pursuant to Article III.1 (a), Article XI.2, or a transitional amount pursuant to Article III.1 (a)(ii). Copies of such provisions shall be circulated by the Depositary to all other Contracting Parties.

PART 2

PORTIONS OF THE ANNEX TO THE CONVENTION

Article 1

Definitions

1. In addition to the definitions in Article I of this Convention, the following definitions apply for the purposes of this Annex:

...

(b) "Nuclear Installation" means:

(i) any nuclear reactor other than one with which a means of sea or air transport is equipped for use as a source of power, whether for propulsion thereof or for any other purpose;

(ii) any factory using nuclear fuel for the production of nuclear material, or any factory for the processing of nuclear material, including any factory for the re-processing of irradiated nuclear fuel; and

(iii) any facility where nuclear material is stored, other than storage incidental to the carriage of such material;

provided that the Installation State may determine that several nuclear installations of one operator which are located at the same site shall be considered as a single nuclear installation.

(*d*) "Operator", in relation to a nuclear installation, means the person designated or recognized by the Installation State as the operator of that installation.

Japan

Act on Compensation for Nuclear Damage[1]

(Act No. 147 of 1961)

As Amended by Act No. 134 of 2014

Chapter I

General Provisions

Purpose

Article 1

The purpose of this act is to protect persons suffering from nuclear damage and to contribute to the sound development of the nuclear industry by establishing a basic system regarding compensation in case of nuclear damage caused by reactor operation etc.

1. This document is an unofficial English translation of the original Japanese text.

Definitions

Article 2

(1) As used in this Act, "reactor operation etc." means any activity which falls under any of the following items as well as shipment, storage or disposal, of nuclear fuel material or material contaminated by nuclear fuel material (including fission products; the same shall apply to the item (v)), which are incidental to the acts of the following items and provided by Cabinet Order:

(i) reactor operation;

(ii) fabricating and enrichment;

(iii) reprocessing;

(iv) use of nuclear fuel material;

(iv-2) interim storage of spent fuel;

(v) radioactive waste disposal and storage of nuclear fuel material or material contaminated by nuclear fuel material (hereinafter referred to as "nuclear fuel material etc.").

(2) As used in this act, "nuclear damage" means damage caused by the effects of the fission process of nuclear fuel material, or of the radiation from nuclear fuel material etc. or of the toxic nature of such materials (an effect that gives rise to toxicity or its secondary disease on the human body by ingesting or inhaling such materials); provided, however, that this shall not apply to damage suffered by the nuclear operator who is liable for such damage pursuant to the following Article.

(3) As used in this act, "nuclear operator" means person who falls under any of the following items (including a person who fell under any of these items).

(i) A person who obtains the permission as provided in Article 23(1) of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Act No. 166 of 1957; hereinafter referred to as "Regulation Act") (including approval to the State under the same paragraph applied by replacing the terms and phrases pursuant to Article 76 of the Regulation Act) (including a person who is deemed a licensee of research and test reactor operation pursuant to Article 39(5) of the Regulation Act).

(ii) A person who obtains the permission as provided in Article 23-2 (1) of the Regulation Act.

(iii) A person who obtains the permission as provided in Article 43-3-5 (1) of the Regulation Act (including approval to the State under the same paragraph applied by replacing the terms and phrases pursuant to Article 76 of the Regulation Act).

(iv) A person who obtains the permission as provided in Article 13 (1) of the Regulation Act (including approval to the State under the same paragraph applied by replacing the terms and phrases pursuant to Article 76 of the Regulation Act.

(v) A person who obtains the permission as provided in Article 43-4 (1) of the Regulation Act (including approval to the State under the same paragraph applied by replacing the terms and phrases pursuant to Article 76 of the Regulation Act).

(vi) A person who obtains the permission as provided in Article 44 (1) of the Regulation Act (including approval to the State under the same paragraph

applied by replacing the terms and phrases pursuant to Article 76 of the Regulation Act).

(vii) A person who obtains the permission as provided in Article 51-2 (1) of the Regulation Act (including approval to the State under the same paragraph applied by replacing the terms and phrases pursuant to Article 76 of the Regulation Act).

(viii) A person who obtains the permission as provided in Article 52 (1) of the Regulation Act (including approval to the State under the same paragraph applied by replacing the terms and phrases pursuant to Article 76 of the Regulation Act).

(4) As used in this Act, "reactor" means a reactor as provided in Article 3 (4) of the Atomic Energy Basic Act (Act No. 186 of 1955), "nuclear fuel material" means nuclear fuel material as provided in Article 3 (2) of the Atomic Energy Basic Act (including spent fuel as provided in Article 2 (10) of the Regulation Act), "fabricating and enrichment" means fabricating and enrichment as provided in Article 2 (9) of the Regulation Act, "reprocessing" means reprocessing as provided in Article 2(10) of the Regulation Act, "interim storage of spent fuel" means the storage of spent fuel as provided in Article 43-4(1) of the Regulation Act; "radioactive waste disposal or storage of nuclear fuel material or material contaminated by nuclear fuel material", means waste disposal and radioactive waste storage as provided in Article 51-2(1) of the Regulation Act; "radiation" means radiation as provided in Article 3(5) of the Atomic Energy Basic Act, and "nuclear vessel" and "foreign nuclear vessels" mean nuclear vessel and foreign nuclear vessel as provided in Article 23-2(1) of the Regulation Act.

Chapter II

Liability for Nuclear Damage

Absolute liability, channelling of liability, etc.

Article 3

(1) When nuclear damage is caused by reactor operation etc. during the operation, the nuclear operator who is engaged in the reactor operation etc. on this occasion shall be liable for the damage, provided, however, that this shall not apply to the damage caused by a grave natural disaster of an exceptional character or by an insurrection.

(2) In the case referred to in the preceding paragraph, if the damage is caused by the transport of nuclear fuel material etc. between nuclear operators, the nuclear operator who is the consignor of the nuclear fuel material etc. shall be liable for the damage unless there is a special agreement in writing between the nuclear operators.

Article 4

(1) In the case referred to in the preceding Article, no person other than the nuclear operator who is liable for the damage pursuant to the Article shall be liable for the damage.

(2) In the case referred to in the preceding Article(1), the liability of the nuclear operator who furnishes the financial security as provided in Article 7-2(2) and has a foreign nuclear vessel enter into Japanese territorial waters shall be limited to the amount as provided in Article 7-2(2).

(3) The provisions of Article 798(1) of the Commercial Code (Act No. 48 of 1899), the Act on Limitation of Liability of Shipowners (Act No. 94 of 1975) and the Product Liability Act (Act No. 85 of 1994), shall not apply to nuclear damage which is caused by reactor operation etc.

Calculation of the amount of compensation in the case a victim is grossly negligent

Article 4-2

In the case referred to in Article 3, when a victim is grossly negligent, the court may determine the amount of compensation by taking this into consideration.

Rights of recourse

Article 5

(1) In the case referred to in Article 3, when there is another natural person who shall be liable for the cause of the occurrence of that damage (limited to cases when such damage is caused by an intentional act of such natural person), the nuclear operator who has compensated the damage pursuant to Article 3 shall have a right of recourse against such natural person.

(2) The provision of the preceding paragraph shall not preclude a nuclear operator from entering into a special agreement in writing regarding rights of recourse.

Chapter III

Financial Security

Section 1

Financial Security

Duty to provide financial security

Article 6

A nuclear operator is prohibited from reactor operation etc. unless financial security for compensation of nuclear damage (hereinafter referred to as "financial security") has been provided.

Details of financial security

Article 7

(1) Except when the provisions of the following Article are applicable, financial security shall be provided by the conclusion of a contract of liability insurance for nuclear damage and an indemnity agreement for compensation of nuclear damage or by deposit, approved by the Minister for Education, Culture, Sport, Science and Technology as an arrangement that makes available for compensation of nuclear damage 120 billion yen (The Cabinet Order may provide for a lesser amount than 120 billion yen for the reactor operation etc. which the Cabinet Order stipulates; hereinafter this amount is referred to as "financial security amount") for each installation or site or nuclear vessel, or by an equivalent arrangement approved by the Minister of Education, Culture, Sports, Science and Technology.

(2) Where the amount available for compensation of nuclear damage falls below the financial security amount because the nuclear operator has paid compensation for nuclear damage pursuant to Article 3, the Minister of Education, Culture, Sports, Science and Technology may, if it deems it necessary to ensure full compensation of nuclear damage, specify the time limit and order the nuclear operator to make the amount available for compensation of nuclear damage up to the financial security amount.

(3) In the case referred to in the preceding paragraph, the preceding Article shall not apply until the Order pursuant to the preceding paragraph is made (until the time limit set by the Order, where such Order has been made pursuant to the preceding paragraph).

Article 7-2

(1) Where a nuclear operator has a nuclear vessel enter into foreign territorial waters, financial security shall be provided by the conclusion of a contract of liability insurance for nuclear damage and an indemnity agreement for compensation of nuclear damage or by other financial measures, approved by the Minister of Education, Culture, Sports, Science and Technology as an arrangement that is sufficient for the compensation of nuclear damage, in the amount agreed between the Government of Japan and the Government of such foreign country and subscribed by the nuclear operator of the nuclear vessel who is liable for the nuclear damage.

(2) Where a nuclear operator has a foreign nuclear vessel enter into Japanese territorial waters, the financial security shall be approved by the Minister of Education, Culture, Sports, Science and Technology as an arrangement that is sufficient for the compensation of nuclear damage, in the amount (not less than 36 billion yen in respect of nuclear damage caused by each incident) agreed between the Government of Japan and the Government of such foreign country and subscribed by the nuclear operator of the foreign nuclear vessel liable for the nuclear damage.

Section 2

Contract of Liability Insurance for Nuclear Damage

Contract of Liability Insurance for Nuclear Damage

Article 8

The contract of liability insurance for nuclear damage (hereinafter referred to as "liability insurance contract") shall be the contract under which an insurer undertakes to indemnify a nuclear operator for his loss arising from compensating nuclear damage, where the nuclear operator becomes liable for such nuclear damage, and under which the insurance policyholder has undertaken to pay a premium to the insurer (this provision applies only to a person who is authorised to engage in liability insurance activities pursuant to the Insurance Business Act (Act No. 105 of 1995), such as Non-Life Insurance Company under Article 2(4) of this Act, or Foreign Life Insurance Company under paragraph 9 of the same Article, this being the meaning given to the term insurer used hereinafter).

Article 9

(1) A victim shall, with regard to the right to demand compensation for nuclear damage, have the right to have his/her own claim satisfied prior to other obligees from the amount provided by the liability insurance contract.

(2) The insured person may request the insurer to make the insurance payment only to the extent of the amount of compensation which the insured person paid or to the extent to which the insured person acquired the consent of the victim.

(3) The right to demand insurance payment under the liability insurance contract shall not be assigned, mortgaged or seized; provided, however, that this shall not apply to the case that a victim proceeds with a seizure with regard to his claim for nuclear damage.

Restrictions on cancellation of liability insurance contract

Article 9-2

(1) An insurer, when intending to cancel a liability insurance contract, shall in advance give notice to that effect to the Minister of Education, Culture, Sports, Science and Technology.

(2) The Minister of Education, Culture, Sports, Science and Technology shall, when receiving the notification specified in the preceding paragraph, give notice to that effect to the insured person of the liability insurance contract.

(3) The cancellation of the liability insurance contract shall take effect after 90 days from the date when the Minister of Education, Culture, Sports, Science and Technology receives the notification specified in paragraph 1 pertaining to the cancellation.

(4) With respect to liability insurance contract pertaining to the shipment of nuclear fuel material etc., an insurer shall not cancel this contract from the commencement to the end of the shipment of nuclear fuel material etc.

(5) Any special provisions that run counter to the provisions of the preceding two paragraphs and that are disadvantageous to the insured person shall be invalid.

Section 3

Indemnity Agreements for Compensation of Nuclear Damage

Indemnity agreements for compensation of nuclear damage

Article 10

(1) An indemnity agreement for compensation of nuclear damage (hereinafter referred to as "indemnity agreement") shall be the contract by which the Government undertakes to indemnify a nuclear operator for his loss arising from compensating nuclear damage not covered by the liability insurance contract or other financial security measures for compensation of nuclear damage, where the nuclear operator becomes liable for such damage, and under which that operator has undertaken to pay an indemnity fee to the Government.

(2) Provisions relating to indemnity agreements shall be laid down in another act.

Article 11

The provisions of Article 9 shall apply mutatis mutandis to the indemnity payment under the indemnity agreement.

Section 4

Deposit

Deposit

Article 12

A deposit for financial security shall be made in the Legal Affairs Bureau or the District Legal Affairs Bureau nearest to the main office of the nuclear operator, either in money or in securities as provided by the Ordinance of the Ministry of Education, Culture, Sports, Science and Technology (including book-entry transfer bonds specified in the Act on Book-Entry Transfer of Company Bonds, Shares, etc. (Act No. 75 of 2001) Article 278(1). The same shall apply hereinafter in this Chapter).

Payment from Deposit

Article 13

Any victim shall, with regard to the right to demand compensation for damages, have a right to receive the payment of claims from the money or securities deposited by the nuclear operator pursuant to the preceding Article.

Recovery of Deposited Property

Article 14

(1) A nuclear operator may, in the cases referred to in the following items, recover the money or securities deposited pursuant to Article 12 with the approval of the Minister of Education, Culture, Sports, Science and Technology where the nuclear operator:

(i) compensated nuclear damages;

(ii) took other financial security measures in place of the deposit;

(iii) ceased the reactor operation etc.

(2) When the Minister grants the approval under the preceding items (ii) or (iii), it may, to the extent that the Minister of Education, Culture, Sports, Science and Technology deems it necessary to ensure full compensation of nuclear damages, designate the time when the nuclear operator may recover the deposited money or securities, as well as the amount of such recovery.

Specifications by Orders

Article 15

In addition to what is prescribed in this Chapter, matters regarding deposits shall be provided by Orders of the Ministry of Education, Culture, Sports Science and Technology and the Ministry of Justice.

Chapter IV

Measures taken by the State

Measures taken by the State

Article 16

(1) Where a nuclear damage occurs, the Government shall give a nuclear operator (except the nuclear operator of a foreign nuclear vessel) such aid as is required for him to compensate the damage, when the actual amount of damages to be paid pursuant to Article 3 exceeds the financial security amount and when the Government deems it necessary in order to achieve the purposes of this Act.

(2) The aid provided for in the preceding paragraph shall be given to the extent of the power of the Government which is authorised by decision of the Diet.

Article 17

Where the proviso in Article 3(1) applies or where nuclear damage is deemed to exceed the amount provided under Article 7-2(2), the Government shall take the necessary measures to relieve victims and to prevent damages from spreading.

Chapter V

Dispute Reconciliation Committee for Nuclear Damage Compensation

Article 18

(1) The Dispute Reconciliation Committee for Nuclear Damage Compensation (hereinafter referred to as "Reconciliation Committee" in this Article) may be established as an organisation attached to the Ministry of Education, Culture, Sports, Science and Technology, pursuant to the provisions laid down by Cabinet Order; this Committee shall be in charge of arranging settlement of any dispute arising from compensation of nuclear damage and of preparing general instructions to help operators reach a voluntary settlement of such disputes.

(2) The Reconciliation Committee shall:

(i) arrange settlement of any dispute arising from compensation of nuclear damage;

(ii) in the event of a dispute arising from compensation of nuclear damage, establish guidelines to judge the extent of the nuclear damage and other general guidelines to help operators reach a voluntary settlement of the said dispute;

(iii) conduct necessary investigation and assessment of nuclear damage to deal with the matters specified in the preceding two items.

(3) In addition to what is prescribed in the preceding two paragraphs, necessary matters regarding the organisation and operation of the Reconciliation Committee as well as procedures of the request for, and handling of mediation of settlement shall be provided in the Cabinet Order.

Chapter VI

Miscellaneous Provisions

Presentation of reports and written opinions to the Diet

Article 19

(1) Where nuclear damage occurs on a substantial scale, the Government shall report to the Diet as soon as possible on the extent of the damage and on the measures taken by the Government pursuant to this Act.

(2) When nuclear damage occurs, the Government must present to the Diet the written opinion regarding handling, prevention etc. of the damage, which the Atomic Energy Commission has submitted to the Prime Minister.

Application of Article 10(1) and Article 16 (1)

Article 20

The provisions of Article 10(1) and Article 16(1) shall apply to nuclear damage arising from reactor operation etc. which have begun the activity, falling under items provided in Article 2(1), by 31 December 2019.

Collection of reports and inspections

Article 21

(1) The Minister Education, Culture, Sports, Science and Technology may, if it deems it necessary to ensure implementation of the provisions of Article 6, require a nuclear operator to present any necessary reports or allow his officials to enter the latter's office, installation, site or nuclear vessel, to inspect the books, documents and other necessary objects, or to question persons concerned.

(2) When an official enters premises pursuant to the preceding paragraph, he shall carry an identification card and present it if requested by persons concerned.

(3) The right to conduct an inspection pursuant to paragraph 1 shall not be construed as what is approved for criminal investigation.

Consultations with the Minister of Economy, Trade and Industry or with the Minister of Land, Infrastructure, Transport and Tourism

Article 22

When the Minister of Education, Culture, Sports, Science and Technology takes actions pursuant to Article 7(1) or Article 7-2(1) or (2), or makes Orders pursuant to Article 7(2), it shall hold prior consultations with the Minister of Economy, Trade and Industry regarding matters pertaining to operation of reactors used for power generation, fabricating and enrichment, reprocessing, interim storage of spent nuclear fuel or radioactive waste disposal and storage of nuclear fuel material or materials contaminated by nuclear fuel material, or the Minister of Land, Infrastructure, Transport and Tourism regarding operation of reactors installed in vessels.

Exclusion from application to the State

Article 23

The provisions of Part III, Article 16 and Part VII shall not apply to the State.

Chapter VII

Penal Provisions

Article 24

A person who violates the provisions of Article 6 shall be punishable by imprisonment with work up to one year, or by a fine not exceeding one million yen, or by both.

Article 25

A person who falls under any of the following shall be punishable by a fine not exceeding one million yen:

(i) where a person has failed to make the reports or made false reports under Article 21(1);

(ii) where a person has refused, obstructed or avoided an entry or inspection under Article 21(1) or failed to make any statement or made false statements.

Article 26

When the representative of a legal entity, or the agent or any other worker for a legal entity or a natural person has, committed offences referred to in Article 24 and 25 in connection with the business of the legal entity or the natural person, not only the offender but also the legal entity or the natural person shall be punished by a fine prescribed in the respective Articles.

Supplementary Provisions

(Extract)

Article 1 Date of entry into force

This Act shall come into effect as of the day when the Convention on Supplementary Compensation for Nuclear Damage becomes effective for Japan.

Article 2 Transitional Measures

(1) With regard to shipment of nuclear fuel material etc. (meaning nuclear fuel material etc. specified in the provision of Article 2(1)(v) of the Act on Compensation for Nuclear Damage prior to revision by the provision of Article 1 (hereinafter referred to as "Old Compensation Act" in the following paragraph)), the provisions then in force shall remain applicable, notwithstanding the provisions of Article 3(2) of the Act on Compensation for Nuclear Damage revised by the provision of Article 1 (hereinafter referred to as "New Compensation Act")

(2) With regard to calculation on the amount of compensation for damage in the case that the fact causing nuclear damage (meaning nuclear damage specified in Article 2(2) of the Old Compensation Act. The same shall apply in the following

paragraph.) has occurred before entry into force of this Act, the provisions of Article 4-2 of the New Compensation Act shall not apply.

(3) With regard to right of recourse in the case that the fact causing nuclear damage has occurred before entry into force of this Act, the provisions then in force shall remain applicable, notwithstanding the provisions of Article 5 of the New Compensation Act and Article 4(2) of the Supplementary Provisions.

(4) With regard to liability insurance contract of compensation for nuclear damage concluded prior to entry into force of this Act, the provision of Article 9(2) of the New Compensation Act shall not apply.

Act on Indemnity Agreements for Compensation of Nuclear Damage[1]

(Act No. 148 of 1961)

As amended by Act No. 134 of 2014

(Extract)

Indemnity agreement for compensation of nuclear damage

Article 2

Where a nuclear operator becomes liable, the Government may conclude a contract with the nuclear operator under which the Government promise to indemnify the nuclear operator for his loss arising from compensating nuclear damage not covered by a liability insurance contract or other measures to compensate nuclear damage and under which the nuclear operator promises to pay an indemnity fee to the Government.

Indemnified loss

Article 3

The loss which the Government indemnifies under the agreement provided in the preceding Article (hereinafter referred to as "indemnity agreement") shall be the loss of the nuclear operator as result of compensating nuclear damage in the following items:

(i) nuclear damage caused by earthquake or volcanic eruption;

(ii) nuclear damage caused by normal operation (meaning reactor operation etc. performed under the conditions specified by Cabinet Order);

(iii) (as far as the cause for the occurrence is concerned, nuclear damage which can be covered by a liability insurance contract, but for which the persons suffering therefrom have not claimed compensation within a period of ten years from the day of the occurrence of the event (with regard to the nuclear damage appearing in such period, this shall apply only to the case where there is a justifiable reason for their failure to claim compensation within such period);

(iv) nuclear damage which occurs along with the entry of a foreign nuclear vessel into Japanese territorial waters, and which shall not be covered by the financial security or other arrangements for compensation of nuclear damage specified in Article 7(1) of the Compensation Act (limited to the financial security approved as a part of the financial security specified in Article 7-2(1) of the Compensation Act);

1. This document is an unofficial English translation of the original Japanese text.

(v) nuclear damage other than listed in the preceding items and specified by Cabinet Order.

Period of indemnity agreement

Article 5

(1) The period of the indemnity agreement concerning the nuclear damage mentioned in Article 3, item (i) to (iii) and (v) shall run from the time of its conclusion to the time when the reactor operation etc. has ceased.

(2) The period of the indemnity agreement concerning the nuclear damage mentioned in Article 3, item (iv) shall run from the time when the nuclear vessel leaves Japanese territorial waters to the time when it arrives back in Japanese territorial waters.

Article 16

With respect to an indemnity agreement pertaining to shipment of nuclear fuel material etc. (meaning nuclear fuel material etc. prescribed in Article 2(1), item (v) of the Compensation Act. Hereinafter the same shall apply in this Article and Article 18(2)), the Government, notwithstanding the provisions of Article 14(1) and Article 15(1), shall not cancel the agreement during the period after the commencement up to the completion of such shipment of nuclear fuel material etc.

Slovak Republic

Act on Civil Liability for Nuclear Damage and on its Financial Coverage and on Changes and Amendments to Certain Laws[1]

The National Council of the Slovak Republic has resolved on this Act:

Article I

Section 1

Scope of the Act

This Act regulates

a) The civil liability for nuclear damage incurred in the causation of a nuclear incident,

b) The scope of powers of the Nuclear Regulatory Authority (hereinafter only as the "Authority") in relation to the application of this Act,

c) The competence of the National Bank of Slovakia in relation to the supervised financial market entities in the financial coverage of liability for nuclear damage; and

d) The penalties for violation of this Act.

Section 2

In matters of civil liability for nuclear damage provisions of Article I, par.1, sub-par. a), b), d) up to i), k), sub-par. i), l), Article II, par. 1 to 6, Article III, Article IV, par.1,4 and 7, Art. V, par. 2 to 4, Art. VI, par. 2, Art. VII, par.2 to 4, Art. IX, par. 2, Art. X, Art. XI, par. 1 and 3, Art. XII, par. 1, sub-par. a) and par.3, Art. XIV and Art. XVI of the Vienna Convention on Civil Liability for Nuclear Damage[1] (hereinafter only as an "International Treaty") apply.

Section 3

Definitions

(1) "Nuclear incident" means any occurrence according to the International Treaty.

(2) "Nuclear damage" means damage resulting and causally linked to a nuclear incident in accordance with the provisions of an International Treaty.

(3) "Nuclear installation" means an installation according to a special regulation.[2]

1. This document is an unofficial translation of the original Slovak text.

(4) For the purposes of this Act

a. Operator is a person to whom license was issued for commissioning, for operation, for the decommissioning phase of a nuclear installation, or for transport of radioactive materials according to special regulation[3] except from license for operation of a repository,[4]

b. Insurance means financial coverage of operator's liability for nuclear damage provided by an authorised person under a special regulation[5] (hereinafter only as the insurance provider), and subject to other conditions laid down in this Act,

c. Financial security is a different kind of financial coverage[6] of the operator's liability for nuclear damage as insurance, if the financial satisfaction from such financial security and hence satisfying the rights of the injured party to compensation for nuclear damage is the same as for insurance,

d. Transport of radioactive materials means transport under a special regulation.[7]

Section 4

Operator's Liability

1) The operator shall be liable for any nuclear damage that has been caused by a nuclear incident at his nuclear installation, except as provided in paragraph 2.

2) The operator shall not be liable for nuclear damage that has been caused by a nuclear incident in his nuclear installation, which is a direct result of armed conflict, hostilities, civil war, insurrection, or a grave natural disaster of an exceptional nature.

3) Liability for nuclear damage cannot be transferred to another person, unless paragraph 4 provides otherwise.

4) In case of transport of radioactive materials, with the approval from the Authority, at the request of the carrier supported with the consent of the operator of a nuclear installation and on the basis of a contract between the carrier and the operator of a nuclear installation, to which or from which the radioactive materials are transported, the carrier can be regarded as an operator with respect to a given transport of radioactive materials,[8] in which case the operator proceeds under an international treaty. A certificate of coverage of liability for nuclear damage issued by insurance provider or by financial guarantee provider shall be delivered to the operator.

5) Where nuclear damage engages the liability of more than one operator, the operators shall be liable according to the provisions of the international treaty, and in case of a settlement between these operators they are liable for such damage according to their share on it.

6) If a nuclear incident was caused by one operator with more of its nuclear installations, the operator is liable for each nuclear installation up to the limit of liability under Section 5, par.1, 2 or 3, if it is not a single nuclear installation according to paragraph 7.

7) If one operator has more nuclear installations for the same or different purpose or life cycle and there is a common internal emergency plan[9] approved for these installations, such installations are considered as a single nuclear installation.

8) If there are several nuclear installations regarded as a single nuclear installation according to paragraph 7, they shall have one common liability limit according to Section 5, par.1, 2 or 3, which is the same as the maximum liability limit of the individual nuclear installation from among those several nuclear installations.

9) The operator may be wholly or partly relieved from his obligation to pay damages, if he proves that the nuclear damage resulted wholly or partly as a result of gross negligence by the injured party in respect of the consequences, the content and the extent of the damage suffered as a result of the negligent act or omission or as a result of act or omission with the intent to cause nuclear damage.

Section 5

Operator's Liability Limits

1) The operator is liable for any nuclear incident resulting in nuclear damage in the phase of commissioning[10] or during operation[10] of any nuclear installation

a. With a nuclear reactor or nuclear reactors[11] for energy purposes up to maximum amount of Euro 300 000 000.

b. With a nuclear reactor or nuclear reactors[11] serving exclusively for scientific, educational or research purposes up to maximum amount of Euro 185 000 000.

c. For handling nuclear material, for handling spent nuclear fuel[12] or for storage, conditioning, treatment of radioactive waste[13] up to maximum amount of Euro 185 000 000.

2) The operator is liable for any nuclear incident resulting in nuclear damage in the phase of decommissioning[14] of any nuclear installation according to par.1, up to maximum amount of Euro 185 000 000.

3) The operator is liable for any nuclear incident resulting in nuclear damage occurred during any transport of radioactive materials up to maximum amount of Euro 185 000 000.

4) If the operator is also a holder of license for the transport of radioactive materials under special regulation,[15] liability for nuclear damage during each shipment of radioactive materials for each nuclear incident, which resulted in nuclear damage, is covered under the scope of paragraphs 1 and 2, and is part of the coverage of liability for nuclear damage for nuclear installations from which or to which the shipment of radioactive materials is carried out.

5) Liability for nuclear damage and the obligation to cover liability for nuclear damage by insurance or financial security shall not apply to:

a. Transport of radioactive materials of such small quantities or of such low activity that there is a low risk of nuclear damage,

b. Nuclear installation in a decommissioning phase, if it does not contain any fresh fuel or spent nuclear fuel, while containing nuclear materials or radioactive waste of such small quantities or of such low activity that there is a low risk of nuclear damage.

6) List of materials in accordance with par. 5, their quantities and their physical and chemical parameters justifying the low risk of nuclear damage, shall be laid down by generally binding legal regulation to be issued by the Authority.

Section 6

Financial coverage for the liability for nuclear damage

1) The operator is obliged to cover its liability for nuclear damage up to the liability limit according to Section 5, par. 1, 2 or 3 by insurance or by financial security. The public funds cannot be used for financial security.

2) Financial security may be provided by:

a. a domestic legal entity or foreign legal entity associating funds of several operators, including foreign operators;

b. a bank guarantee provided by a bank or branch of a foreign bank under special regulation;[16]

c. deposit tied for this purpose in a bank or branch of a foreign bank;[16] or

d. any other form of security than under sub-par. a) to c), which provides financial cover for liability for nuclear damage equally as the financial security under sub-par. a) to c).

3) Financial cover for liability for nuclear damage under par.1 can be fully provided for by insurance or fully by financial security under par.2, or by combination of insurance and financial security, while the condition of total coverage of liability for nuclear damage minimum to a liability limit under Section 5, par. 1, 2 or 3 must be always met.

4) If the financial cover for the liability is provided by a financial security under par. 2, the provider of financial security or the operator must be able to provide financial security and comparable activities required for reporting and registration of nuclear damage, survey and determining the extent of nuclear damage, the timeliness in satisfying claims for compensation for nuclear damage and the payment of compensation for nuclear damage to the extent, to which they are provided by the insurance provider.

5) If a financial liability coverage is provided by insurance, such insurance must be provided by an independent insurance provider. The independence of the insurance provider is secured in a way that the operator, who concludes an insurance policy, cannot control such insurance provider.[17]

6) The insurance or financial security shall cover the operator's liability for nuclear damage for all nuclear installations or for all transports of radioactive materials so that the condition for the cover at minimum up to the liability limit according to Section 5, par. 1, 2 or 3 for each nuclear incident at each nuclear installation resulting in nuclear damage or for each nuclear incident during each transport of radioactive material resulting in nuclear damage.

7) The insurance shall cover the liability of the operator for nuclear damage up to the liability limit according to Section 5, par. 1, 2 or 3 also with respect to claims, which will be made within ten years from the date of occurrence of a nuclear incident. Cover by financial security up to the liability limit shall be valid on the date of the

nuclear incident, due to which the nuclear damage occurred, and it must be possible to satisfy the claims made within ten years from the date of the nuclear incident.

8) The insurance or financial security shall cover the operator's liability for nuclear damage separately for the commissioning, separately for the operation of a nuclear installation, separately for the decommissioning phase and separately for the transport of radioactive materials. This does not apply for shipments of radioactive materials if the same operator is also a holder of license for the transport of radioactive materials and the condition under Section 5, par. 4 is met.

9) The commissioning phase and the operation of a nuclear installation, as well as the decommissioning phase of a nuclear installation involves also handling of nuclear materials, transport and management of spent nuclear fuel, or transport and management of radioactive waste and transport of radioactive materials. The operator does not need to conclude an extra insurance or arrange a special financial security for the transport and management of nuclear material, the spent nuclear fuel or radioactive waste if he already has an insurance policy or another financial security for the existing nuclear installation that is under commissioning, in operation or in the decommissioning phase.

10) The funds provided from insurance or from the financial security shall be provided solely for the purposes of compensation of nuclear damage. Funds provided by the insurance or from the financial security cannot be used to pay for damages to a nuclear installation or any property located on the site of such nuclear installation, which is used or to be used in connection with this nuclear installation, or on the means of transport, which at the time of the event transported radioactive material that caused the event.

11) If none of the authorised persons according to par. 5 provide insurance, the operator shall provide financial cover for the liability up to the liability limit under Section 5, par. 1, 2 or 3 in full by financial security.

Section 7

Exercise of the right to compensation for nuclear damage and division of compensation for nuclear damage

1) The injured party shall seek compensation for nuclear damage from the operator.

2) When exercising the right to compensation for nuclear damage the injured party is required to demonstrate the origin and the extent of nuclear damage and the causal link between the nuclear incident and the nuclear damage.

3) If the claimant, who is a natural person dies or an injured party, who is a legal entity, is wound up with a legal successor, paragraphs 1 and 2 shall apply mutatis mutandis to the heir of the injured party[18] or to the legal successor of the injured party.

4) The operator shall be freed from liability for nuclear damage if he proves that the damage was not causally linked to the nuclear incident.

5) Compensation for nuclear damage in settlement of claims for compensation of nuclear damage is:

a) 50% of the financial volume intended to cover the liability for nuclear damage in accordance with Section 5, par.1, 2 or 3 shall be allocated to full or pro rata compensation for nuclear damage, which was applied to the end of the sixth

month following the date of the nuclear incident, which resulted in nuclear damage;

b) Another 30% of the financial volume intended to cover liability for nuclear damage in accordance with Section 5, par.1, 2 or 3 and the unused portion of the volume under sub-par. a) shall be allocated to full or pro rata compensation for nuclear damage, which has been applied from the beginning of the seventh month until the end of the 24th month from the date of the nuclear incident, which resulted in nuclear damage;

c) Further 20% of the financial volume intended to cover liability for nuclear damage in accordance with Section 5, par. 1, 2 or 3 and the unused portion of the volume under sub-par. b) shall be allocated to full or pro rata compensation for nuclear damage, which was applied from the beginning of the 25th month until the end of the tenth year from the date of the nuclear incident, which resulted in nuclear damage;

6) The claim for compensation for nuclear damage shall be satisfied pro rata in proportion of all claims for compensation for nuclear damage to the financial volume allocated to satisfy them in a given time period according to par. 5. In case the financial cover of the whole liability limit is not used up in accordance with Section 5, par.1, 2 or 3 following the procedure according to par. 5, while in a certain period, due to overdrawing the allocated financial amount, the compensation for nuclear damage was only proportional, after the expiration of ten years from the nuclear incident, which resulted in nuclear damage, there is a settlement and eventual full or proportional additional payment for all claims made.

7) The right to compensation for nuclear damage is barred, if the injured party or the heir of the injured party, or the legal successor of the injured party, who suffered nuclear damage, did not exercise his right to compensation within three years from the date when he learnt or could have learnt about the nuclear damage and about who is responsible for it.

8) The right to compensation for nuclear damage shall cease if not exercised not later than ten years from the date of nuclear incident, which resulted in nuclear damage.

(9) Limitation periods according to the general regulation[19] do not apply for exercising the right to compensation for nuclear damage.

Section 8

Demonstrating financial liability coverage for nuclear damage

1) An applicant for license under a special regulation[20] is required to submit to the Authority a proof of financial cover for the liability for nuclear damage in the procedure for issuing the license in a form and in a manner provided under a separate regulation.[21] From such document it must be clear that the insurance policy will be effective or that the financial security will be effective no later than the date of the license and shall cover the liability for nuclear damage within the limits of liability in accordance with Section 5, par. 1, 2 or 3 and the methods of coverage according to par. 6.

2) It is prohibited to commission, operate and decommission a nuclear installation or to transport radioactive materials without the financial coverage for liability for nuclear damage up to the liability limit according to Section 5, par.1, 2 or 3.

3) The operator, insurance provider or provider of financial security are independently required to notify the Authority of material changes in the insurance or material changes in the financial security, especially if there is a termination of the relevant policy, change in the period of insurance or the term of financial security, any change in the limit of indemnity or financial security, in the conditions for releasing or pay out of the insurance claims, or other claims from the financial security, change in the method of joint guarantee or change affecting the performance of obligations arising from an international treaty and from another international convention, by which the Slovak Republic is bound,[22] and that is by written notice not later than 15 days from the date of effect of such material change in the insurance or in the financial security.

4) If the previous method of financial cover for liability for nuclear damage was terminated, the operator is required to provide for a following financial cover for liability for nuclear damage so that coverage for liability for nuclear damage is continuous under this Act and this fact must be demonstrated to the Authority within 15 days from the date of effect of such change.

5) Documents and notices referred to in par. 1 and 4 shall be delivered to the Authority by electronic means signed by a certified electronic signature[23] or in paper form by registered mail. The deadline shall be deemed to be respected if the document or notice was handed over for posting or sent by electronic means and signed by certified electronic signature[23] on the last day of the period.

6) In the procedure for license under a special regulation[24] the Authority is required, when reviewing the proof of coverage for liability for nuclear damage, to seek from the National Bank of Slovakia information on the eligibility of the proposed entity, designated as the insurer or provider of financial security, to provide such insurance or financial security.

7) If the insurance provider or provider of financial security is not an entity supervised by the National Bank of Slovakia,[25] but it is an entity supervised by the financial market, supervised by the relevant authority in the State, in which the insurance provider or the provider of financial security has its offices or domicile, the applicant for the license is required, together with the proof of insurance or proof of financial security, to submit to the Authority also the information from the competent regulatory authority on the eligibility of the proposed entity to provide insurance or financial security in the Slovak Republic.

8) If there are several insurance providers or several providers of financial security, information according to par. 6 and 7 on the eligibility of all proposed entities to provide insurance or financial security, is needed.

9) Upon request from the Authority, according to par. 6, the National Bank of Slovakia is required to issue the information within 30 days from the date of delivery of such request to the Authority.

10) If the information according to par. 9 shows that the proposed insurance provider or provider of financial security is not authorised to provide insurance or financial security to cover liability for nuclear damage in the Slovak Republic, the Authority shall stop the proceeding for a license according to special regulation.[26] When combining coverage of liability for nuclear damage using methods according to Section 6, par. 1 to 3, the condition of eligibility of an entity to provide insurance or to provide financial security shall be met in each method of covering liability for nuclear damage in parallel, so that the condition of overall financial coverage up to the liability limit according to Section 5, par. 1, 2 or 3 is met.

Section 9

Notice of Occurrence of a Nuclear Incident

1) The Authority is required, within 24 hours from the time when it learnt from the operator that the operator announced the 3rd level – emergency condition – in the vicinity of the nuclear installation,[27] to place on its website and in the media a notice of occurrence of a nuclear incident at a nuclear installation, the date of occurrence of a nuclear incident and at which nuclear installation the nuclear incident occurred. The Authority shall promptly deliver a written notice of occurrence of a nuclear incident and at which nuclear installation it occurred, and on the operator of that nuclear installation, to all District Offices in the seat of the region.

2) The Authority is required, within 24 hours from the time when he learnt from the operator about the incident or an accident in transport of radioactive materials,[27] to place on its website and in the media a notice of occurrence of a nuclear incident in transport of radioactive materials, on the date and the location of the incident or accident. The Authority shall promptly deliver a written notice of occurrence of a nuclear incident in transport of radioactive materials and on the operator of transport of radioactive materials to all District Offices at the seat of the region.

3) In the notice of occurrence of a nuclear incident according to par. 1 or 2 the Authority shall state the date, month and year of occurrence of a nuclear incident, the place of occurrence of a nuclear incident with the identification of the nuclear installation, in which the nuclear incident occurred, or definition of the place, at which the nuclear incident occurred in transport of radioactive materials, the name, address, identification number and the details of incorporation in the Commercial Registry or a similar registry of an entity, which is the operator of this nuclear installation or which was the operator during a nuclear incident in transport of radioactive materials. The notice contains also other information, in particular the preliminary statement on the assumption of the nuclear damage resulting from this nuclear incident.

4) The District Office at the seat of the region is required to promptly send out the notice according to par. 1 or 2 to the towns and villages belonging to the territory of the region. The towns and villages are required to display this notice on the official notice board and to make it public also in another way that is customary.

Section 10

Other Administrative Offences and Penalties

1) For breach of obligations pursuant to Section 6, par. 1 and the prohibition under Section 8, par. 2 the Authority shall impose a penalty to the operator amounting from Euro 100 000 up to Euro 1 000 000.

2) For breach of the obligation to notify according to Section 8, par. 3, the Authority shall impose a penalty to the operator amounting from Euro 5 000 up to Euro 20 000.

3) To an operator, who has failed to correct the deficiencies for which he was fined within the defined period, an additional penalty may be imposed up to the double amount of the penalty that can be imposed.

4) The penalty is due within 30 days from the date of effect of the decision on imposing the penalty.

5) The penalties become an income of the National Nuclear Fund for decommissioning of nuclear facilities and management of spent nuclear fuel and radioactive waste.[28]

6) Penalties according to par. 1 and 2 can be imposed within three years from the day when the breach of obligation occurred.

7) When imposing a penalty and determining its amount according to par. 1 and 2, particular attention is given to the seriousness, method, duration and possible consequences of the breach of obligations, the co-operation and the attitude of the operator in eliminating the consequences of deficiencies and on the measures adopted.

8) If the insurance provider or the provider of financial security fails to comply with the notification obligation according to Section 8, par. 3, which is supervised by the National Bank of Slovakia, the Authority shall send a written complaint to the National Bank of Slovakia to commence proceedings for the imposition of penalty under a special regulation.[29]

9) If the notification obligation according to Section 8, par. 3 is not complied with by the insurance provider or the provider of financial security, where the National Bank of Slovakia does not exercise the oversight, the Authority shall send a complaint on such breach to the body, whose competence includes the insurance provider or provider of financial security and asks the National Bank of Slovakia for co-operation.

10) Provisions of the general regulation on administrative proceedings[30] shall apply for the proceeding of the Authority on imposition of a penalty under this Act.

Section 11

Within its scope of powers the Authority exercises also control of implementation of this Act under special regulations.[31]

Section 12

Unless this Act provides otherwise, the legal relations of liability for nuclear damage are covered by the provisions of the Civil Code.

Interim and Repealing Provisions

Section 13

The operator shall submit to the Authority a written document on financial coverage of liability for nuclear damage under this Act by 15 January 2016.

Section 14

Decree of the Nuclear Regulatory Authority of the Slovak Republic No. 47/2006 Coll. on maximum limits of small quantities of nuclear material and radioactive waste in respect of which no nuclear damage is expected and therefore subject to exclusion from the third party liability regime is repealed.

Article III

Act No. 541/2004 Coll. on Peaceful Use of Nuclear Energy (the Atomic Act) and on changes and amendments to certain laws as amended by the Act No. 238/2006 Coll., Act No. 21/2007 Coll., Act No. 94/2007 Coll., Act No. 335/2007 Coll., Act No. 408/2008 Coll., Act No. 120/2010 Coll., Act No. 145/2010 Coll., Act No. 350/2011 Coll. and Act No. 143/2013 Coll. is changed and amended as follows:

1. The words "State Fund for decommissioning of nuclear installations and management of spent nuclear fuel and radioactive waste" in all forms throughout the text of the Act are replaced by the words "National Nuclear Fund for decommissioning of nuclear facilities and management of spent nuclear fuel and radioactive waste." in the relevant form.

2. In Section 1 par. 1 sub-par. h) is deleted.

Current sub-par. i) and j) are changed to h) and i).

3. In Section 2 sub-par. f) the words "except the seventh part of this Act," are deleted.

4. In Section 4 par. 1 is complemented with sub-par. r) and s) with the following wording:

"r) controls compliance with the obligations arising from special regulation,[7b]

s) issues certificate on the operator under a special regulation.[7c]"

Footnotes to references 7b and 7c read as follows:

"7b Act No. 54/2015 Coll. on Civil Liability for Nuclear Damage and on its Financial Coverage and on changes and amendments to certain laws.

7c Section 4, par. 4 of the Act No. 54/2015 Coll."

5. In Section 8 after par. 8 a new paragraph 9 is added, with the following wording:

"9 Provisions of par. 7 and 8 shall apply mutatis mutandis also if the applicant failed to provide a proof of insurance or a proof of financial security under a special regulation[11aa]) or if according to the opinion of the National Bank of Slovakia or other authority under special regulation[11ab]) the entity referred to as the provider of insurance or provider of financial security is not authorised to provide such insurance or to provide financial security under special regulation.

Footnotes to references 11aa and 11ab read as follows:

"11aa) Section 8 par. 1 of the Act No. 54/2015 Coll.

11ab) Section 8 par. 5 to 8 of the Act No. 54/2015 Coll."

6. Sections 29 and 30 are deleted.

7. In Section 34 par. 11 the words "Income from fines" are replaced by the word "Fines".

8. In Annex 1 part C sub-par. n) at the end the following words are attached "under a special regulation,[7b]"

9. In Annex 1 part D sub-par. h) at the end the following words are attached "under a special regulation,[7b]"

10. In Annex 2 part A sub-par. g) at the end the following words are attached "under a special regulation,[7b]".

Article IV

Act No. 371/2004 Coll. on courts seats and districts in the Slovak Republic and on amendment to the Act No. 99/1963 Coll. on the Code of Civil Procedure as amended by the Act No. 428/2004 Coll., Act No. 757/2004 Coll., Act No. 511/2007 Coll., Act No. 517/2008 Coll., Act No. 59/2009 Coll., the judgement of the Constitutional Court of the Slovak Republic No. 290/2009 Coll., Act No. 291/2009 Coll., Act No. 503/2009 Coll., Act No. 332/2011 Coll., Act No. 348/2011 Coll., Act No. 388/2011 Coll., Act No. 75/2013 Coll., Act No. 495/2013 Coll. and Act No. 336/2014 Coll., is complemented as follows:

After Section 14e a new Section 14f is added, which reads as follows, including its title:

"Section 14f

Court with agenda of proceedings on compensation for nuclear damage

(1) The competent court for proceedings in the matter of compensation of damages, which occurred in the causation of a nuclear incident,[1ad] is the District Court Nitra; its district is the whole territory of the Slovak Republic.

(2) For proceedings on remedies in the matters according to par. 1, the competent court is the Regional Court Nitra."

Footnote to reference 1ad reads as follows:

"1ad) Act No. 54/2015 Coll. on Civil Liability for Nuclear Damage and on its Financial Coverage and on changes and amendments to certain laws."

Article VI

This Act comes into force on 30 March 2015, except Art. I, III and IV, which come into force on 1 January 2016.

Andrej Kiska s.m.

Peter Pellegrini s.m.

Robert Fico s.m.

---

1. Notification of Ministry of Foreign Affairs No. 70/1996 Coll.
2. Section 2 sub-par. f) of the Act No. 541/2004 Coll. on Peaceful Use of Nuclear Energy (Atomic and on changes and amendments to certain laws as amended.
3. Section 5 par. 3 sub-par. b) to d) and j) of the Act No. 541/2004 Coll.
4. Section 2 sub-par. q) of the Act No. 541/2004 Coll. as amended by the Act No. 143/2013 Coll.
5. Act No. 39/2015 Coll. on insurance and on changes and amendments to certain laws.

6. For example Act No. 483/2001 Coll. on the banks and on changes and amendments to certain laws as amended.
7. Section 2 sub-par. i), Sections 15 to 16l of the Act No. 541/2004 Coll. as amended.
8. Sections 16 to 16l of the Act No. 541/2004 Coll. as amended.
9. Section 28 par. 6 of the Act No. 541/2004 Coll. as amended.
10. Section 19 of the Act No. 541/2004 Coll.
11. Section 2 sub-par. f) first point of the Act No. 541/2004 Coll. as amended by the Act No. 350/2011 Coll.
12. Section 2 sub-par. f) second and third point of the Act No. 541/2004 Coll. as amended by the Act No. 350/2011 Coll.
13. Section 2 sub-par. f) fourth point of the Act No. 541/2004 Coll. as amended by the Act No. 350/2011 Coll.
14. Section 2 sub-par. t), Section 5 par. 3 sub-par. d) of the Act No. 541/2004 Coll. as amended by the Act No. 350/2011 Coll.
15. Section 5 par. 3 sub-par. d) and j) of the Act No. 541/2004 Coll.
16. Act No. 483/2001 Coll. as amended.
17. Section 66a of the Commercial Code as amended by the Act No. 127/1999 Coll.
18. Sections 460 to 487 of the Civil Code.
19. Section 106 of the Civil Code.
20. Section 4 par. 1 sub-par. d) and Section 5 of the Act No. 541/2004 Coll.
21. Section 6 par. 2 sub-par. h) of the Act No. 541/2004 Coll.
22. Vienna Convention on Civil Liability for Nuclear Damage (Notification of Ministry of Foreign Affairs No. 70/1996 Coll.), Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention (Notification of Ministry of Foreign Affairs No. 71/1996 Coll.).
23. Section 3 of the Act No. 215/2002 Coll. on the electronic signature and on changes and amendments to certain laws as amended by the Act No. 214/2008 Coll.
24. Sections 5 to 9 of the Act No. 541/2004 Coll.
25. Section 1 par. 3 of the Act No. 747/2004 Coll. on Financial Market Supervision and on changes and amendments to certain laws as amended.
26. Section 8 par. 8 of the Act No. 541/2004 Coll. as amended by the Act No. 143/2013 Coll.
27. Section 27 par. 7 and Section 28 par. 21 of the Act No. 541/2004 Coll. as amended by the Act No. 350/2011 Coll.
28. Section 7 par. 1 sub-par. c) of the Act No. 238/2006 Coll. on National Nuclear Fund for Decommissioning of Nuclear Facilities and Management of Spent Nuclear Fuel and Radioactive Waste (Act on Nuclear Fund) and on changes and amendments to certain laws as amended.
29. Act No. 566/1992 Coll. on the National Bank of Slovakia as amended. Act No. 747/2004 Coll. As amended.
30. Act No. 71/1967 Coll. on Administrative Proceedings (Administrative Code) as amended.
31. Section 29 of the Act No. 575/2001 Coll. on Organisation of Governmental Activities and of Central State Administration as amended by the Act No. 408/2008 Coll. Section 4 of the Act No. 541/2004 Coll. as amended.

News briefs

29th Plenary meeting of the European Nuclear Safety Regulators Group (ENSREG) – 15 January 2015, Brussels

At ENSREG's 29th plenary meeting, the Heads of the European Radiological protection Competent Authorities (HERCA) and the Western European Nuclear Regulators' Association (WENRA) presented their recently published work on emergency preparedness and response, with particular emphasis on better cross-border co-ordination of protective actions during the early phase of a nuclear accident. ENSREG encouraged HERCA and WENRA to continue their work on this issue and emphasised the importance of this preparatory work for the national implementation of the revised Basic Safety Standards Directive due by early 2018.

ENSREG had an initial exchange of views regarding the first Topical Peer Review to be organised in 2017 pursuant to Council Directive 2014/87/Euratom amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations (Nuclear Safety Directive).[1] Consensus was reached on the fact that the Topical Peer Review should be performed on technical safety related issues. ENSREG also agreed on the process and calendar for the preparation of the 2017 exercise.

Furthermore, ENSREG members exchanged views on the potential for collaboration on licensing issues related to new fuel suppliers for VVER reactors, in the context of supply diversification and energy security. ENSREG also discussed the potential safety implications associated with the drone overflights of some European nuclear reactor sites. While it was considered to be primarily a security issue, ENSREG indicated that it will continue to monitor the situation.

Internal organisational issues were also addressed by ENSREG, with a preliminary review of the structure of its working groups and its current work programme; the approval of the objectives of the 3rd ENSREG Nuclear Safety conference, to be held in Brussels on 29 and 30 June 2015; and the nomination of Dr C. Housiadas, chairman of the Greek Atomic Energy Commission, as vice chairman of ENSREG and as chair of ENSREG Working Group 3, in replacement of Mr Andreas Molin in both roles.

Further information is available on the ENSREG website: www.ensreg.eu/news.

Third IAEA – EU Senior Officials Meeting, Luxembourg, 4-5 February 2015

Senior officials from the International Atomic Energy Agency (IAEA), the European Commission and the European External Action Service met on 4-5 February 2015 for the third annual senior officials meeting in Luxembourg to review and further strengthen their nuclear co-operation.

1. *Official Journal of the European Union* (OJ), L 219 (25 July 2014), p.42.

The meeting discussed how to further strengthen co-operation on nuclear safety, nuclear security, safeguards, nuclear applications and research and innovation in nuclear energy.

The meeting also debated closer co-ordination on education and training, emergency preparedness and response, as well as cooperating on the economic modelling of energy systems.

Continuous support provided by the European Union to IAEA's activities in a variety of areas has delivered concrete and visible achievements, including through the implementation of assistance projects on a global scale. In the area of nuclear applications for sustainable development, the potential for maximizing achievements through enhancing co-operation will be further explored.

The next senior officials meeting will take place in Vienna in early 2016.

International Nuclear Law Association (INLA), 2016 Congress

Every two years, the INLA organises a Congress called a "Nuclear Inter Jura" in which nuclear lawyers from around the world participate. The next INLA Congress will be held in New Delhi, India, from Monday 7 to Friday 11 November 2016. This will be the first Congress held in the South Asian region.

Under the overarching theme of "Nuclear Law – Towards a New Paradigm?", the XXII Congress will address contemporary topics with a focus on comparative studies, including:

- climate change and nuclear law;
- India's civil nuclear liability law and the new India Nuclear Insurance Pool (INIP);
- comparing financing models in new build countries;
- nuclear liability treaties and energy co-operation in the Asian region;
- domestic implementations of the Convention on Supplementary Compensation;
- comparing legal and financing approaches in the nuclear, aviation and oil sectors;
- defining the role of nuclear regulators;
- license to abandon nuclear facilities and brownfield legislations;
- regulatory strategies towards long-term management of high and intermediate level waste;
- social license experiences in large-scale infrastructure projects;
- the ICRP and protection of the environment;
- Intellectual Property Rights (IPRs) and cybersecurity;
- IPRs and 3-D printing in the nuclear sector;
- the draft Convention on Nuclear Security;
- transport of nuclear material;
- licensing of small modular reactors;
- nuclear safety approaches post-Fukushima;

- public international law and case law of the International Court of Justice of relevance to the nuclear sector.

Any law firm or organisation interested in sponsoring this event should please contact INLA at: secretary@nlain.org. Any questions can be directed to: info@aidn-inla.be.

International Nuclear Law Association (INLA), German Branch, 2015 Nürnberg Conference

The German Branch of the International Nuclear Law Association (INLA) will hold its 14th regional conference on 28 and 29 September 2015 in Nürnberg, Germany.

In five sessions, German and international speakers will address the following topics:

- turnkey – a viable contractual concept for nuclear new build and decommissioning?;
- access to justice in environmental law and related to international investments disputes;
- legal requirements on the final disposal of nuclear waste – a global overview;
- nuclear liability – latest developments;
- nuclear safety in the EU and worldwide.

The conference will be conducted in English and German, with simultaneous translation being provided.

For more details and for registration, see the website of the German Branch: www.deutsche-inla.de.

Nuclear liability for transport – World Nuclear Transport Institute activities

Following the success of past workshops on nuclear liability and insurance, which took place in 2005 and 2007, and presentations at several International Nuclear Law Association (INLA) conferences, the World Nuclear Transport Institute (WNTI) organised a one-day workshop on the nuclear liability for transport in July 2014 aimed at updating stakeholders on the liability framework in place for the transport of nuclear substances. The workshop, which saw presentations from the Head of Legal Affairs, Nuclear Energy Agency (NEA); the Director of the Office of Legal Affairs, International Atomic Energy Agency (IAEA); industry representatives and experts, attracted over 50 participants and concluded on the benefits of more detailed information and frequent exchanges on the issue of nuclear liability for transport.

Subsequently, the WNTI decided to work on a factsheet that would provide generic information on the international framework of liability for transport. This factsheet is due to be published in June 2015 and will be freely available from the WNTI website.

In November 2014, the WNTI delivered a presentation at the NEA Nuclear Law Committee (NLC) Topical Session on the nuclear liability and transportation. This session allowed for further exchanges on the issues of nuclear liability for international transport with members of the NLC and participants in the session.

In April 2015, the WNTI organised jointly with the Cargo Incident Notification System (CINS) organisation a workshop on maritime and nuclear insurance, liability

and operations. This workshop discussed the maritime and nuclear liability and insurance matters associated with the transport of nuclear fuel cycle materials by sea and the respective roles of the maritime and nuclear insurances in covering specific risks associated with the transport. The WNTI factsheet and more information on these subjects can be found on the WNTI website: www.wnti.co.uk.

Recent publications

Key Developments in Environmental Law (2014) by Stanley D. Berger[1]

Over the past eight years, Thomson Reuters, through Canada Law Book, has been publishing *Key Developments in Environmental Law*, an annual review highlighting topical subjects and trends in environmental law, and the related field of energy law. It has also become a custom recently to feature an article from the international legal community. In this 2014 edition, the contributing authors do not simply report the legal news and instead have made great efforts to examine developments in the context of larger public policy. This is wholly consistent with the maturation of environmental and energy law. Gradually, the global community has come to appreciate the profound legal implications not only in matters of the environment, but on the economy and global security as well.

In January 2014, the Canadian Parliament introduced Bill C-22, The Energy Safety and Security Act, which addresses the prevention, response, accountability and transparency for offshore oil and gas and nuclear incidents. The Bill attempted to promote the polluter pays principle by imposing increased liability on the operators of offshore oil and gas operations. No-fault liability will jump from CAD 30-40 million to CAD 1 billion, with minimum financial assurance requirements. Losses now covered will extend to the intangible, e.g. the loss of environmental resources to future generations. Jim Thistle, a partner at McInnes Cooper in Newfoundland, reviews the reports and debates surrounding the oil and gas portion of the Bill, its detailed provisions and its economic and legal implications.

Sarah Diebel, Counsel at the Ontario Power Authority (as of January 2015 merged with and renamed the Independent Electricity System Operator [IESO]), looks at the emergence of renewable energy in Ontario reviewing competitive, non-competitive and standard offer procurements both from the perspective of market experience to date and its evolution. Ms Diebel reviews the sobering revelations in the 2011 Ontario Auditor's Report on Renewable Energy Initiatives, as well as the follow-up 2013 Annual Report, which showed some improvement in pricing and capacity allocation. Ms Diebel explains that this was partly as a result of a more inclusive public policy decision-making process and partly as a result of a maturing market for renewables.

Stanley Berger then provides an update into the Joint Review Panel's environmental assessment and licensing hearing into Ontario Power Generation's proposed deep geologic repository for low and intermediate level radioactive waste near Lake Huron. The hearing commenced in September 2013 and resumed again in September 2014. The paper, originally presented at the 21st International Nuclear Law Association Congress in October in Buenos Aires, offers lessons learnt from the hearing. Mr Berger addresses such diverse topics as regulatory independence, the

1. Berger, S. (2014), *Key Developments in Environmental Law*, ISBN 978-0-88804-701-4, 200 pages, Canada Law Book, Toronto.

scope of environmental assessment, the proper dividing line between environmental assessment and subsequent licensing phases, public and aboriginal consultation and the manner of addressing potential impacts which can be thousands of years into the future.

In 2012, Joe Castrilli and Ramani Nadarajah of the Canadian Environmental Law Association (CELA) wrote about the Ontario Court of Appeal decision in Castonguay Blasting Ltd. v Ontario, which defined the scope of environmental regulation when it overlapped with other regulation. The case clarified reporting obligations to environmental and health and safety regulators. Mr Castrilli and Ms Nadarajah have returned again in this issue, to close the loop with the Supreme Court of Canada's decision on the appeal in Castonguay. This decision fundamentally expanded the scope of environmental regulation. Mr Castrilli and Ms Nadarajah's article elucidates the extent of this expansion, particularly through the Court's reliance on the precautionary principle and the application of international legal norms. Readers will also benefit from the direct involvement of the authors in the Supreme Court hearings, as they acted as counsel to CELA, one of the interveners. In that capacity they had access to the parties' and interveners' factums and reference the arguments from the factums in their paper.

Dan Kirby, Jennifer Fairfax and Patrick Welsh at Osler, Hoskin & Harcourt LLP examine recent trends in the issuance of environmental remediation orders and court decisions in civil claims for damages for contaminated land. The authors note that Canadian courts and regulators appear to favour administrative orders over civil claims in matters of environmental protection, even orders that indiscriminately apply to innocent officers and directors. The authors observe that the courts are less likely to certify class actions and find in favour of plaintiffs suing for contaminated land. Technical proof of causality and damage make it difficult for blameless subjects of administrative orders to recover compensation for loss they've suffered. The authors conclude that this trend has a potentially disastrous effect on the economy because the administrative orders target deep pockets without regard to fault, frustrate redress and thereby discourage businesses from locating in Canada.

This year's international contribution provides a rare glimpse into the environmental law of India, a nation that has just gone through a transformative election. Els Reynaers Kini, a partner in the Indian law firm of M.V. Kini & Co. and General Secretary to the Indian Nuclear Law Association, reviews the Civil Liability for Nuclear Damage Act 2010 and the 2011 Rules against the backdrop of India's environmental case law and the 2014 election of Indian Prime Minister Narendra Modi. The Act, unlike international conventions and domestic laws elsewhere in the world, gives nuclear operators, in the case of catastrophic nuclear incidents, a right of recourse against suppliers who have provided sub-standard services or whose supplied material contains latent defects. Many countries like Canada and the United States had lifted bans on nuclear exports and investments with India, contemplating greater trade with India and their respective countries in nuclear energy. The Act however, creates a potentially chilling effect on foreign trade with India in the nuclear energy sphere. Ms Reynaers Kini reviews the arguments for and against the law, particularly focusing on the legal question of whether the law conforms with the international Convention on Supplementary Compensation for Nuclear Damage. She also looks at how the law is being addressed by insurers, operators and indeed the government.

Finally, Duff Harper at Blake, Cassels & Graydon LLP in Calgary reviews the recent legal developments in the transport of oil out West since the Lac-Mégantic tragedy in Québec. The article includes an up-to-date comparison of the regulation and potential environmental liability relating to the transport of oil by rail under the Transportation of Dangerous Goods Act and Regulations and the delivery of oil by pipeline under the National Energy Board Act and Onshore Pipeline Regulations.

Stanley David Berger, partner Fogler Rubinoff LLP, is President of the Canadian Nuclear Law Organization and a Board member and Former President of the International Nuclear Law Association.

Nuclear Energy and Liability in South Asia: Institutions, Legal Frameworks and Risk Assessment within SAARC (2015), by M P Ram Mohan, published by Springer India, Mumbai

In 2007, the International Atomic Energy Agency (IAEA) estimated that on account of the massive energy requirements to fuel economic progress and to meet the demands of a large population, Asia may well be the engine of world's nuclear energy growth. Even though the IAEA revised its projection estimates in 2011 subsequent to the Fukushima Daiichi accident in Japan, a major portion of the global expansion of nuclear power is still projected to be in Asia.

Nuclear Energy and Liability in South Asia focuses on the nuclear energy programmes in the South Asian countries of Afghanistan, Bangladesh, Bhutan, India, Pakistan, Nepal, Maldives and Sri Lanka. South Asia is one of the most densely populated regions in the world. A nuclear disaster in one country will have a significant impact on the life and livelihood of the population across the region. Currently, the major economies in South Asia are expanding their nuclear energy programmes, and this poses transboundary risk. Most of the proposed nuclear power plants (NPPs) are geographically not far from each other. Considering the transboundary impacts of Chernobyl, and recently in Fukushima Daiichi, these projects could be seen as a shared concern for the region. The risk is aggravated by the fact that countries in South Asia are not a part of any common international nuclear liability framework, nor do they have reciprocal domestic law. This subjects the region to an uncertain liability and compensation regime.

The book is divided in five chapters.

- Chapter 1 details the evolution of international nuclear liability laws. The chapter covers nuclear technology development from military applications to its civilian use and subsequent development of principles relating to civil nuclear liability regimes. The author argues that though the regional Paris Convention and international Vienna Convention on liability and compensation became the template, many countries followed these conventions with varying degrees of discretion, and several countries remained outside the regime. It appears that even after many decades of the Chernobyl transboundary nuclear accident and the recent Fukushima Daiichi accident, the creation of a universal regime is far from complete.

- Chapter 2 deals with India's Civil Liability for Nuclear Damage Act, 2010. The author argues that the making of this law is one of the finest legislative endeavours by Indian Parliament. The exercise was significant because the resultant liability law had exceptional domestic political acceptability, though it appears to defy conventional international practices. Examining the law through two specific perspectives – limitation of liability and right of recourse – the author argues that while the Indian law gives the impression of defiance, the Parliament has only utilised the provisions of international nuclear law conventions and expanded the boundaries of interpretation. Further, a section on transboundary applicability of the Indian law and India's commitment under the Convention on Supplementary Compensation for Nuclear Damage to its neighbours is analysed to bring out the operational difficulties.

- Chapter 3 maps the nuclear energy programmes, and national and international laws, applicable in South Asia. The current level of nuclear

energy expansion is discussed in detail and concludes that South Asia does not have any common nuclear liability legal practise, which therefore subjects the region to an uncertain liability and compensation regime. This chapter explores the legal response mechanisms available with respect to state liability and compensation, and argues that the South Asian Association for Regional Cooperation (SAARC), a regional community of South Asian countries, is the appropriate institutional mechanism available to form a regional nuclear risk community.

- Chapter 4 undertakes a Geographical Information System (GIS) based technical risk analysis within SAARC. In order to understand a probable transboundary risk among SAARC nations from a nuclear accident, this chapter plots risks zones to visually represent the emergency planning zones. The mapping result shows the existence of transboundary risk in South Asia. This chapter calls on the SAARC countries to address the expanding nuclear energy programme as a shared concern.
- In Chapter 5, an empirical analysis is undertaken in order to understand the possibility of establishing a South Asian Nuclear Risk Community. Interviews were conducted with diplomatic missions of SAARC countries in Delhi, nuclear policy makers and officials from the SAARC institutions. The purpose of the study is to understand the risk perception of the nuclear energy programme in South Asia. The chapter presents the results of the empirical study and concludes that SAARC nations are willing to explore regional approaches.

The author is an Associate Professor at the Department of Policy Studies, TERI University, India. The book is a product of author's doctoral thesis submitted at the Indian Institute of Technology, Kharagpur. He is a nominated member of the "Nuclear energy for peaceful applications committee", Bureau of Indian Standards, Government of India. He is the President of the Nuclear Law Association, India. International Union for Conservation of Nature (IUCN) has recognised him as the India focal point of IUCN World Commission on Environmental Law. He is an alumnus of the International School of Nuclear Law (2005).

List of correspondents to the *Nuclear Law Bulletin*

ALBANIA	Mr F. YLLI, Director, Institute of Nuclear Physics
ALGERIA	Mr F. CHENNOUFI, Head of Nuclear Regulation Division, Atomic Energy Commission
ARGENTINA	Mr M. PAEZ, Deputy Director of Legal Affairs, National Commission of Atomic Energy
ARMENIA	Mr A. MARTIROSYAN, Chairman, Armenian Nuclear Regulatory Authority
AUSTRALIA	Mr S. MCINTOSH, Manager, International Relations, Government Affairs and Policy, Australian Nuclear Science and Technology Organisation Mr M. REYNOLDS, Corporate Counsel, Australian Radiation Protection and Nuclear Safety Agency
AUSTRIA	Mr T. AUGUSTIN, Deputy Director for Nuclear Co-ordination, Federal Ministry of Agriculture, Forestry, Environment and Water Management
BANGLADESH	Mrs S. RAHMAN, Chairman, Bangladesh Atomic Energy Regulatory Authority (BAERA) Mr M. RAHMAN, Director, International Affairs Division, Bangladesh Atomic Energy Commission (BAEC)
BELARUS	Mr D. LOBACH, Head of Division for Organisation of Scientific Research and Elaboration of Documentation, Department of Nuclear and Radiation Safety (*Gosatomnadzor*), Ministry for Emergency Situations
BELGIUM	Ms K. GEERTS, Head of Legal Service, Federal Agency for Nuclear Control
BRAZIL	Ms D. FISCHER, Brazilian Association of Nuclear Law
BULGARIA	Ms M. MINKOVA, Chief Expert, International and European Matters, Department of International Co-operation, Nuclear Regulatory Agency Mr A. ROGATCHEV, Director, Department of International Cooperation, Nuclear Regulatory Agency
CANADA	Mr S.D BERGER, Partner, Fogler Rubinoff Ms L. THIELE, Senior General Counsel, Legal Services, Canadian Nuclear Safety Commission
CHINA	Ms Z. LI, Director of the Law Office, China National Nuclear Corporation Mr J. YUAN, Partner, Jun He Law Offices
CZECH REPUBLIC	Mr J. HANDRLICA, Law Faculty, Charles University, Prague
DENMARK	Ms T.C. MOGENSEN, Ministry of Justice
EGYPT	Mr A. ALI, Acting Chairman, Nuclear Law Department, National Centre for Nuclear Safety and Radiation Control, Egyptian Atomic Energy Authority
ESTONIA	Mr I. PUSKAR, Head of Radiation Safety Department, Environmental Board
FINLAND	Ms E. MELKAS, Senior Adviser, Energy Department, Ministry of Employment and the Economy
FRANCE	Ms F. TOUITOU-DURAND, Head of Legal Services, Atomic Energy Commission
GEORGIA	Mr G. BASILIA, Chief specialist of Department of Nuclear and Radiation Safety Service, Ministry of Energy and Natural Resources of Georgia

GERMANY	Prof. N. PELZER, Consultant, University of Göttingen
GREECE	Dr C. HOUSIADAS, Chairman, Greek Atomic Energy Commission Ms V. TAFILI, International and Public Relations Office, Greek Atomic Energy Commission
HUNGARY	Mr Z. ZOMBORI, Legal Adviser, Hungary Atomic Energy Authority Dr L. CZOTTNER, Senior Legal Adviser, Hungary Atomic Energy Authority Prof. V. LAMM, Institute for Legal Studies, Academy of Sciences
ICELAND	Mr S. MAGNUSSON, Director, Icelandic Radiation Protection Institute
INDIA	Mr Y. T. MANNULLY, Advocate, High Court of Kerala, India Mr R. MOHAN, Fellow, The Energy and Resources Institute Ms E. REYNAERS KINI, Partner, M.V. Kini & Co., Advocates & Solicitors
INDONESIA	Ms V. DEWI FAUZI, Legal Officer, National Nuclear Energy Agency Mr M. POERNOMO, Consultant
IRELAND	Ms I. BOLGER, IAEA/INIS Liaison Officer, Radiological Protection Institute of Ireland
ISRAEL	Mr R. LAHAV, Legal Adviser, Atomic Energy Commission
ITALY	Mr V. FERRAZZANO, Director of Corporate Affairs, Legal Affairs and Industrial Security, Nuclear Plant Management Company (SO.G.I.N. S.p.A.) Ms S. SCARABOTTI, Head of the Legal Affairs, Nuclear Plant Management Company (SO.G.I.N. S.p.A.)
JAPAN	Mr H. KAMAI, First Secretary, Permanent Delegation of Japan to the OECD Dr T. YAMAMURA, Policy Research Office, Department of Science and Technology for Nuclear Material Management, Japan Atomic Energy Agency
KOREA	Dr S. KIM, Principal Engineer, Department of Nuclear Emergency Management, Korea Institute of Nuclear Safety (KINS) Prof. K.G. PARK, Faculty of Law, Korea University
LITHUANIA	Ms U. ADOMAITYTE, Head of Legal Affairs and Personnel Division, State Nuclear Power Safety Inspectorate (VATESI)
LUXEMBOURG	Mr P. MAJERUS, Radiation Protection Division, Health Directorate, Ministry of Health
MEXICO	Mr J. GONZALEZ ANDUIZA, Legal Affairs Department, Federal Commission on Electricity Mr M. PINTO CUNILLE, Head of the Legal and International Affairs Department, National Commission on Nuclear Safety and Safeguards (NARNRA)
MOLDOVA (REPUBLIC OF)	Ms E. MURSA, Head of Monitoring, Analysing and Planning Service, National Agency for Regulation of Nuclear and Radiological Activities
MONTENEGRO	Prof. S. JOVANOVIC, Professor and Head of the University Centre for Nuclear Competence and Knowledge Management
NETHERLANDS	Dr N. HORBACH, Consultant Mr M.C. ZEEMAN, Legal Adviser, Ministry of Finance
NORWAY	Mr S. HORNKJØL, Acting Head of Section, Norwegian Radiation Protection Authority
POLAND	Mr P. KORZECKI, Director, Legal Department, National Atomic Energy Agency of the Republic of Poland Mr K. SIECZAK, Head of the Regulation Division, Legal Department, National Atomic Energy Agency of the Republic of Poland
PORTUGAL	Ms M. MERUJE, Legal Adviser, Nuclear and Technological Institute Mr M. SOUSA FERRO, Counsel, Eduardo Paz Ferreira & Associados

ROMANIA	Ms R. BANU, International Affairs Counselor, National Commission for Nuclear Activities Control Mr V. CHIRIPUS, Attorney, Nuclear Electrica Ms B. VAJDA, President, National Commission for Nuclear Activities Control
RUSSIA	Mr A. SHKARBANOV, Counsel, State Atomic Energy Corporation ROSATOM
SERBIA (REPUBLIC OF)	Ms M. ĆOJBAIŠIĆ, Head of Unit for International Co-operation, Agency for Ionising Radiation Protection and Nuclear Safety
SLOVAK REPUBLIC	Mr M. POSPÍŠIL, Director, Legal Affairs Division, Nuclear Regulatory Authority of the Slovak Republic Ms G. ŠPAČKOVÁ, Legal Adviser, Division of Legislation and Legal Affairs, Nuclear Regulatory Authority
SLOVENIA	Mr A. ŠKRABAN, Head of Office of General Affairs, Slovenian Nuclear Safety Administration
SPAIN	Ms I. DOVALE HERNANDEZ, Technical Counselor, Cabinet of the Secretariat of State for Energy, Ministry of Industry, Energy and Tourism Ms E. MENENDEZ-MORAN ALVAREZ, Head of Service, Deputy Direction General for Nuclear Energy, Ministry of Industry, Energy and Tourism
SOUTH AFRICA	Mr David DAVIES, Nuclear Law Consultant
SWEDEN	Mr S. CARROLL, Analyst, Operation and Decommissioning of Nuclear Facilities, Swedish Radiation Safety Authority Mr T. ISENSTAM, Senior Legal Adviser, Swedish Radiation Safety Authority Mr T. LOFGREN, Senior Legal Adviser, Swedish Radiation Safety Authority
SWITZERLAND	Mr C. PLASCHY, Legal Specialist, Swiss Federal Office of Energy Ms F. PORTMANN-BOCHSLER, Legal Specialist, Swiss Federal Office of Energy
TUNISIA	Mr M. CHALBI, Ministry of Education and Science, National School of Engineering
TURKEY	Mr F. KURHAN, Legal Adviser, Turkish Atomic Energy Authority Ms E. ATALAY, Energy Adviser, Permanent Delegation of Turkey to the OECD
UKRAINE	Mr V. SHVYTAI, Head of Presidential Office, National Nuclear Energy Generating Company (*Energoatom*)
UNITED ARAB EMIRATES	Mr E. MAHADEEN, Director of Legal Affairs, Federal Authority for Nuclear Regulation
UNITED KINGDOM	Mr A. PEYCHERS, Senior Policy Adviser, Office for Nuclear Development, Department of Energy and Climate Change
UNITED STATES	Ms S. ANGELINI, Attorney Adviser, Office of Civilian Nuclear Programs, US Department of Energy Ms A. CAPOFERRI, Deputy Assistant General Counsel for Civilian Nuclear Programs, US Department of Energy Mr B. MCRAE, Assistant General Counsel, US Department of Energy Mr T. ROTHSCHILD, Associate General Counsel, US Nuclear Regulatory Commission
URUGUAY	Prof. D. PUIG, Professor of Nuclear Law, College of Law, University of Uruguay
EUROPEAN COMMISSION	Ms A. DURAND, Legal Officer, Directorate General for Energy
INTERNATIONAL ATOMIC ENERGY AGENCY	Ms S. RIVERA, Legal Officer, Office of Legal Affairs
CTBTO	Ms S. BRANDER, Chief, Legal Services Section

NEA PUBLICATIONS AND INFORMATION

Printed material

The NEA produces a large selection of printed material, part of which is on sale, and part of which is distributed free of charge. The full catalogue of publications is available online at www.oecd-nea.org/pub.

Internet and electronic products

In addition to basic information on the Agency and its work programme, the **NEA website** offers free downloads of hundreds of technical and policy-oriented reports.

An **NEA monthly electronic bulletin** is distributed free of charge to subscribers, providing updates of new results, events and publications. Sign up at www.oecd-nea.org/bulletin/.

You can also visit us on **Facebook** at www.facebook.com/OECDNuclearEnergyAgency.

Follow us on **Twitter** @OECD_NEA.

OECD/NEA PUBLISHING, 2 rue André-Pascal, 75775 PARIS CEDEX 16
NEA No. 7252

Nuclear Law Bulletin No. 95

The *Nuclear Law Bulletin* is a unique international publication for both professionals and academics in the field of nuclear law. It provides readers with authoritative and comprehensive information on nuclear law developments. Published free online twice a year in both English and French, it features topical articles written by renowned legal experts, covers legislative developments worldwide and reports on relevant case law, bilateral and international agreements as well as regulatory activities of international organisations.

Feature articles in this issue include "Entry into force of the Convention on Supplementary Compensation for Nuclear Damage: Opening the umbrella"; "Towards a new international framework for nuclear safety: Developments from Fukushima to Vienna"; "Nuclear arbitration: Interpreting non-proliferation agreements".

Nuclear Energy Agency (NEA)
12, boulevard des Îles
92130 Issy-les-Moulineaux, France
Tel.: +33 (0)1 45 24 10 15
nea@oecd-nea.org www.oecd-nea.org

NEA No. 7252