The Convention on Supplementary Compensation for Nuclear Damage: Catalyst for a Global Nuclear Liability Regime

by Ben McRae*

Introduction

Nuclear power can help address many of our world's most pressing concerns. It is a clean, reliable, economic source of energy that can be used to meet a significant portion of current demand for energy, as well as anticipated future increases in demand. Increased reliance on nuclear power to generate electricity will permit many millions of people throughout the world to experience an improved and sustainable quality of life. In addition, by decreasing dependence on fossil fuels, nuclear power can alleviate price volatility in energy markets and potential supply shortages and disruptions. Moreover, nuclear power produces large amounts of energy with no atmospheric emissions of pollutants such as NOx or SO_2, and no emissions of greenhouse gases such as CO_2. To address global climate change effectively, nuclear power must play an increasingly important role in meeting our world's energy needs.

Over the past two decades, the international community has taken a number of actions to foster the use of nuclear power in a safe and secure manner.[1] One of the most important actions was adoption of the Convention on Supplementary Compensation for Nuclear Damage (CSC) to serve as the basis for a global nuclear liability regime. Such a regime is vital to promoting international cooperation in designing, constructing and operating nuclear power plants and in ensuring the safety and security of these plants.

A global nuclear liability regime must attract broad adherence from both countries that use nuclear power to generate electricity (generating States) and countries that do not use nuclear power to generate electricity (non-generating States). Accordingly, the CSC was developed to attract broad adherence by both generating States and non-generating States. Specifically, the CSC focuses not only on providing legal certainty on the treatment of legal liability for nuclear damage resulting from a nuclear incident, but also on assuring, in the unlikely event of a nuclear incident, the prompt availability of meaningful compensation with a minimum of litigation and other burdens.

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1. See Johan Rautenbach, Wolfram Tonhauser and Anthony Wetherall, "Overview of the International Legal Framework Governing the Safe and Peaceful Uses of Nuclear Energy − Some Practical Steps", International Nuclear Law in the Post-Chernobyl Period, 2006, at p. 7 [hereinafter Overview] (available at: www.nea.fr/html/law/chernobyl/welcome.html).

This article first summarises the main features of the CSC[2] (I) and then discusses why these features make the CSC attractive to both generating States and non-generating States (II). The article then addresses several questions that have arisen since the adoption of the CSC (III).

I. Basic Features of the Convention on Supplementary Compensation (CSC)

Legal certainty

The CSC achieves legal certainty by requiring each member country to have national law on nuclear liability that is based on the Paris Convention,[3] the Vienna Convention[4] or the Annex to the CSC[56] and that incorporates the provisions in the CSC on jurisdiction, compensation and the definition of nuclear damage. This requirement ensures that the national law of each member country will reflect the basic principles of nuclear liability law, which include: (1) channeling all legal liability for nuclear damage exclusively to the operator;[7] (2) imposing liability on the operator without the need to demonstrate fault, negligence or intent;[8] (3) granting exclusive jurisdiction to the courts of the country

2. For an overview of the CSC, see Ben McRae, "The Compensation Convention: Path to a Global Regime for Dealing with Legal Liability and Compensation for Nuclear Damage", *Nuclear Law Bulletin* No. 61 (1998) [hereinafter Compensation Convention] (available at: www.nea.fr/html/law/nlb/NLB-61). For a detailed discussion and authoritative interpretation of the CSC and its provisions, see IAEA International Expert Group on Nuclear Liability (INLEX), the 1997 Vienna Convention on Civil Liability for Nuclear Damage and the 1997 Convention on Supplementary Compensation for Nuclear Damage − Explanatory Texts, International Atomic Energy Agency (IAEA). International Law Series No. 3 [STI/PUB/1279] (2007) [hereinafter Explanatory Texts] (available at: http://ola.iaea.org/). The Explanatory Texts were developed by INLEX, with the assistance of the IAEA Office of Legal Affairs and Professor Andrea Gioia, to provide a comprehensive study of the global nuclear liability regime that will result from widespread adherence to the CSC. The Explanatory Texts are intended to aid the understanding of the CSC and to clarify the operation of the global nuclear liability regime.

3. The 1960 Paris Convention on Third Party Liability in the Field of Nuclear Energy, 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 "revised Paris Convention" are used, respectively.

4. The 1963 Vienna Convention on Civil Liability for Nuclear Damage, including the amended version established by the 1997 Protocol to Amend the Vienna Convention. Where a reference only refers to the original version or the amended version, the terms "1963 Vienna Convention" and "revised Vienna Convention" are used, respectively.

5. See Compensation Convention, *supra*, at 34-38. The footnotes to the text on the Annex provisions provide a crosswalk to the corresponding provisions of the 1963 Vienna Convention, the revised Vienna Convention and the 1960 Paris Convention on which the Annex provisions were based. See also Explanatory Texts, *supra*, at Section 3.3.2.

6. Article II.1 of the CSC.

7. See Explanatory Texts, *supra*, at Sections 1.3.2 and 3.3.2; see also Nuclear Energy Agency (NEA), Exposé des Motifs, 1982 [hereinafter Exposé des Motifs], at paragraphs 15-37.

8. See Explanatory Texts, *supra*, at Sections 1.3.1 and 3.3.2; see also Exposé des Motifs, *supra*, at paragraph 14.

where a nuclear incident occurs;[9] (4) permitting liability to be limited in amount[10] and in time;[11] and (5) compensating damage without any discrimination based upon nationality, domicile or residence.[12]

Exclusive jurisdiction

The CSC reaffirms the principle that jurisdiction over a nuclear incident lies only with the courts of the country where the incident occurs.[13] The CSC updates this principle to cover not only nuclear incidents in the territory or territorial sea of a member country but also nuclear incidents in its exclusive economic zone (EEZ).[14] Specifically, the CSC requires other member countries to recognise the exclusive jurisdiction of the courts of the member country where a nuclear incident occurs and to refrain from asserting jurisdiction over the incident. The CSC also requires member countries to recognise and enforce judgments rendered by the courts of the member country with jurisdiction.[15]

Compensation

The CSC recognises that widespread acceptance of the basic principles of nuclear liability law (and in particular limiting the amount of liability) is dependent on their linkage to an effective mechanism to assure a meaningful amount of compensation. The CSC assures the availability of a meaningful amount of compensation for nuclear damage in member countries by providing for two tiers of compensation.[16] The CSC fixes the amount of the first tier at 300 million Special Drawing Rights (SDRs). To the extent funds from the liable operator are insufficient to cover the first tier amount, the CSC requires the Installation State[17] to make public funds available to cover the difference. If claims for compensation for nuclear damage exceed SDR 300 million, the CSC requires member countries to contribute to an international fund that will provide the second tier of

9. See Explanatory Texts, *supra*, at Sections 1.4, 2.9 and 3.1; see also Exposé des Motifs, *supra*, at paragraphs 54-59.

10. See Explanatory Texts, *supra*, at Sections 1.3.3 and 3.6.1; see also Exposé des Motifs, *supra*, at paragraphs 43-46.

11. See Explanatory Texts, *supra*, at Sections 1.3.4, 2.6 and 3.3.2; see also Exposé des Motifs, *supra*, at paragraph 47.

12. See Explanatory Texts, *supra*, at Sections 3.7.

13. Article XIII of the CSC; see Explanatory Texts, *supra*, at Sections 2.9 and 3.9.1; see also Compensation Convention, *supra*, at 32-33.

14. See Explanatory Texts, *supra*, at Section 2.9; see also, Andrea Gioia, "Maritime Zones and the New Provisions on Jurisdiction in the 1997 Vienna Protocol and in the 1997 Convention on Supplementary Compensation", p. 25, *Nuclear Law Bulletin* No. 63 (1999) (available at: www.nea.fr/html/law/nlb/NLB-63).

15. See Explanatory Texts, *supra*, at Section 3.9.4.

16. Article III.1 of the CSC; see Explanatory Texts, *supra*, at Section 3.6; see also Compensation Convention, *supra*, at 29-31.

17. Installation State refers to the member country in which the nuclear installation operated by the liable operator is located. 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 the courts of the Installation State have jurisdiction over the nuclear incident. This article uses Installation State in place of member country to denote functions that are always assigned to the Installation State or its national law. See e.g., Explanatory Texts, *supra*, at Sections 1.2, 1.4 and 2.8.

compensation. The amount of the second tier of compensation is not fixed, but rather is dependent on the number of nuclear power plants in member countries and will increase as the number of such plants increase. If most generating States adhered to the CSC today, the amount of the second tier currently would be more than SDR 300 million. The CSC also permits a member country to establish a third tier of compensation in excess of the first two tiers. The CSC does not govern the distribution of this third tier, except for one situation relating to member countries with no nuclear installations on their territory.[18]

Definition of nuclear damage

The CSC requires member countries to adopt a broad definition of nuclear damage.[19] Specifically, the CSC provides that nuclear damage must include not only personal injury and property damage, but also certain categories of damage relating to impairment of the environment, preventive measures, and economic losses. The CSC also provides that the definition of nuclear incident includes situations where preventive measures are taken in response to a grave and imminent threat of a release of radiation, even though no actual release has occurred.

II. Reasons why CSC is Attractive to both Generating and Non-generating States

The CSC assures meaningful compensation for nuclear damage promptly with a minimum of litigation

Both generating States and non-generating States have a strong interest in assuring that, in the unlikely event of a nuclear incident, their citizens receive meaningful compensation for nuclear damage promptly with a minimum of litigation and other burdens. The CSC has been developed specifically to achieve this objective.[20]

The principles of nuclear liability law represent a legal approach that focuses on compensating damage promptly with a minimum of litigation. Incorporation of these principles into national law eliminates the need to prove who is responsible for causing a nuclear incident, whether there is fault, negligence or intent, or whether there are any legal defences that might be raised. Under ordinary tort law, resolution of these and other legal issues could take many years, give rise to multiple appeals and divert limited funds from compensating damage to paying legal fees. In contrast, under the principles of nuclear liability law, the only issues to be resolved are whether the nuclear incident caused the damage and, if so, what is the amount of the damage. Accordingly, claims should be paid promptly with little or no litigation.

Making the operator exclusively liable for nuclear damage permits the insurance industry to maximise the amount of coverage it can make available to an operator since it can concentrate all available funds to insure the operator against claims for nuclear damage. If claims could potentially be

18. Article XII.2 of the CSC; see Explanatory Texts, *supra*, at Section 3.5.3. The one exception is that 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.

19. Article I of the CSC sets forth the definitions that must be followed by all member countries. In particular, Article I defines nuclear damage, as well as measures of reinstatement, preventive measures, nuclear incident, law of the competent court and reasonable measures. See Explanatory Texts, *supra*, at Sections 2.3 and 3.5.4; see also Compensation Convention, *supra*, at 31-32.

20. See e.g., Explanatory Texts, *supra*, at Sections 3.1, 3.2 and 3.3.1.

raised against other entities in addition to the operator, the insurance industry would have to allocate the funds available for insuring against nuclear damage claims among policies issued to the operator and these other entities.

Granting exclusive jurisdiction to the courts of the member country where a nuclear incident occurs means all claims will be brought in one forum. Thus, claimants will not have to take part in proceedings in two or more countries to ensure compensation. Requiring all claims to be brought in the courts of one country minimises the possibility that funds available for compensating nuclear damage will be exhausted before all claims are considered. To ensure claimants from all countries receive equal and fair treatment, the CSC requires all claims to be considered without any discrimination based on nationality, domicile or residence.

In addition, since most nuclear damage is likely to occur in the vicinity of the nuclear incident, most claimants will not have to participate in proceedings far from where they live. This is especially important in the case of nuclear incidents during transportation where the responsible operator may be located in a country thousands of miles from the site of the incident. In this regard, the CSC is especially attractive to those countries off whose coast there are maritime shipments of nuclear material since it provides a coastal State with exclusive jurisdiction over nuclear incidents in its EEZ.

The CSC also requires member countries to recognise final judgments rendered by the courts of the member country with exclusive jurisdiction over a nuclear incident and to make them enforceable without re-examination of the case. This greatly benefits claimants since, in the absence of such a treaty obligation, it is unclear whether and, if so, under what conditions, the courts of one country will recognise and enforce judgments rendered by a court in another country. This is especially important in cases where the entity against the judgment is issued has few, if any, assets located in the country where the judgment is issued.

The CSC recognises that prompt compensation with minimum litigation is only attractive if there is an assured and meaningful amount of compensation available to claimants. The CSC addresses this concern by requiring the Installation State to guarantee the availability of a first tier amount of SDR 300 million and establishing an international fund to provide an additional source of compensation.

The provisions of the CSC relating to the international fund were developed to be especially attractive to non-generating States. First, most of the contributions to the international fund will come from generating States. Specifically, 90% of the contributions to the international fund will be based on the installed nuclear capacity in a member country and thus will come from only those member countries where reactors are located. The remaining 10% of the contributions will be based on the UN rate of assessment of a member country. Given that many generating States have a large UN rate of assessments, it is likely that, as a group, non-generating States will provide no more than 2 or 3% of the contributions to the international fund. Second, one-half of the international fund is reserved exclusively for transboundary damage (that is, damage outside the Installation State), which is the type of damage most likely to affect non-generating States.

In addition to assuring the availability of a meaningful amount of compensation, the CSC makes this compensation available to cover a broad range of damage. Specifically, the CSC requires all member countries to adopt a broad definition of nuclear damage, which covers all categories of damage that are normally covered today. Moreover, the CSC makes clear that application of the definition is based on the law of the competent court (that is, the law of 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.

The CSC provides legal certainty necessary for international cooperation in designing, constructing and operating nuclear power plants and in ensuring the safety and security of these plants

Both generating and non-generating States will benefit from the increased use of nuclear power to generate electricity. Generating States, as well as non-generating States that are connected to electrical grids for which a portion of the electricity is generated by nuclear power, will benefit from the generated electricity. In addition, all countries will benefit significantly from the increased use of nuclear power because of the beneficial effects on the global economy, on energy prices and supplies, and on efforts to address global climate change. Thus, both generating States and non-generating States have an interest in establishing a legal framework that facilitates the design, construction and operation of nuclear power plants and that removes legal disincentives to efforts to ensure their safety and security.

The same principles of nuclear liability law that result in prompt compensation with a minimum of litigation also create the legal certainty that is essential for investors, nuclear suppliers and plant operators (including electrical utilities) to engage in nuclear projects. Specifically, many investors and nuclear suppliers would not participate in nuclear projects in the absence of channelling liability exclusively to the operator and of granting exclusive jurisdiction to the courts of the member country where a nuclear incident occurs. Operators also are more likely to engage in nuclear projects if they know the extent of their potential liability exposure and can secure insurance or take other measures to ensure they will have sufficient funds available to cover their potential exposure in the event of a nuclear incident. This knowledge also permits the rates charged for electricity generated by nuclear power plants to reflect the costs associated with insurance or other measures. As noted previously, making the operator exclusively liable permits the insurance industry to maximise the amount of coverage it can make available to an operator since it can concentrate all available funds in a single policy.

III. Frequently Asked Questions

Following adoption of the CSC in 1997, there has been considerable discussion concerning the interpretation of certain provisions in the CSC and how the CSC would operate. These discussions have made clear that a better understanding of the CSC would facilitate widespread adherence.[21] The following section sets forth a number of the questions that have been asked and provides responses.[22]

Why should a country adhere to the CSC when the current international nuclear liability regimes result in complexity and diversity of obligations?

Currently countries might adhere to the 1963 Vienna Convention, the revised Vienna Convention, the 1960 Paris Convention, or the revised Paris Convention, as well as the Joint

21. See Overview *supra*, at 27-28, for a general description of the concerns expressed and the formation of INLEX to respond to these concerns. A summary of the ongoing work of INLEX on liability can be found by going to the subsection on liability at Office of Legal Affairs homepage at the IAEA website (http://ola.iaea.org).

22. The responses reflect the views of the author. In forming these views, however, the author has benefited greatly from the Explanatory Texts and from the presentations and papers prepared for and the discussion conducted in the context of INLEX and the NEA Nuclear Law Committee.

Protocol[23] that links these conventions.[24] This situation inevitably results in complexities and diversity of obligations and will continue until there is widespread adherence to a global nuclear liability regime. The CSC was adopted to provide an overarching international liability instrument that would minimise complexities and diversity of obligation by requiring the same treatment by member countries with respect to minimum compensation amounts, jurisdictional rules and the definition of nuclear damage and by requiring member countries to adopt national laws based on the principles of nuclear liability law as set forth in the Paris Convention, the Vienna Convention or the Annex to the CSC.[25] Thus, the solution to the current complexity and diversity of obligations is widespread adherence to the CSC.[26]

Does the Joint Protocol provide an alternative to the CSC for achieving a global nuclear liability regime?

The Joint Protocol has proven to be an important measure in building a link between countries that adhere to the Vienna and Paris Conventions and can continue to serve that purpose in the interim before widespread adherence to the CSC is achieved.[27] However, it cannot serve as the basis for a global regime since it does not mandate the same treatment with respect to minimum compensation amounts, jurisdictional rules and the definition of nuclear damage. Most non-generating States, as well as many generating States, are unwilling to adhere to any instrument that would put them in treaty relations with other countries that could continue to follow the compensation and jurisdictional provisions in the 1960 Paris Convention or the 1963 Vienna Convention. In addition, unlike the CSC, the Joint Protocol does not contain any mechanism to supplement the funds available to compensate nuclear damage.[28]

What does it mean that the CSC is free standing?

As a free standing instrument, the CSC offers a country the means to become part of the global nuclear liability regime without also having to become a member of the Paris Convention or the Vienna Convention.[29]

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23. The 1988 Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention [hereinafter Joint Protocol]; see, for general background on the Joint Protocol, Otto von Busekist, "A Bridge Between Two Conventions on Civil Liability for Nuclear Damage: the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention", *Nuclear Law Bulletin* No. 43, p. 10 (1989) (available at: www.nea.fr/html/law/nlb/nlb-1968-2000.html).

24 The Vienna Convention is a global instrument to which any country may adhere. The Paris Convention is a regional instrument to which adherence is limited to countries that belong to the OECD or that are approved for adherence by all existing members. Adherence to the Joint Protocol is limited to those countries that adhere to either the Paris Convention or the Vienna Convention.

25. See e.g., Compensation Convention, *supra*, at 25-28.

26. See IAEA Doc. GC(50)/INF/2 (Appendix 3 to the Nuclear Safety Review for the Year 2005) [a report on the work of INLEX (2006)] (hereinafter INLEX Report available at: www.iaea.org/Publications/Reports/index.html), at Section B.2.

27. See INLEX Report, at Section B.2.1.

28. See Compensation Convention, *supra*, at 26-27.

29. See Explanatory Texts, *supra*, at Section 3.3.1; see also Compensation Convention, *supra*, at: 25-26.

Can a country ratify, or adhere to, the 1963 Vienna Convention now that the revised Vienna Convention has come into effect?

Currently a country can decide to adhere to either the 1963 Vienna Convention or the revised Vienna Convention.[30] Regardless of whether a country decided to adhere to the 1963 Vienna Convention or the revised Vienna Convention, if that country adhered to the CSC, it would have to comply with the overarching requirements of the CSC, including those relating to compensation, jurisdiction and the definition of nuclear damage.

Is complete harmonisation of legal details and definitions necessary for an effective and protective global regime?

During the negotiation preceding adoption of the CSC, there was a thorough examination of the legal provisions and definitions related to nuclear liability. This examination identified those provisions and definitions necessary for an effective and protective global regime. For most of these provisions and definitions, their treatment in the 1960 Paris Convention, the 1963 Vienna Convention, the revised Vienna Convention and the Annex to the CSC was determined to be sufficiently harmonised to support an effective and protective global regime. For some provisions and definitions, however, it was determined that their treatment needed to be exactly the same in all member countries in order to support an effective and protective global regime. These provisions and definitions (relating primarily to compensation, jurisdiction and the definition of nuclear damage) were included in the body of the CSC so that all member countries must comply with them. This approach recognises that complete harmonisation of legal details and definitions not only are not necessary to ensure an effective and protective global regime but in fact could serve as a disincentive to broad adherence to a global regime. Accordingly, there is no need to undertake the elaboration of a new overarching international liability instrument since the CSC already achieves the level of harmonisation necessary for an effective and protective regime.[31]

What is the relationship between the definitions of nuclear damage in the 1963 Vienna Convention and the revised Paris Convention and the definition of nuclear damage in the CSC?

The definition of nuclear damage in the 1963 Vienna Convention explicitly includes personal injury and property damage and permits the inclusion of any additional category of damage that is recoverable under the law of the competent court. The CSC enhances the definition of nuclear damage by explicitly identifying five additional categories of damage relating to impairment of the environment, preventive measures, and economic loss that must be compensated "to the extent determined by the law of the competent court". At the same time, the CSC eliminates the ability of a court to consider "any other loss or damage so arising or resulting if and to the extent that the law of the competent court so provides" as provided for in the definition of "nuclear damage" in the 1963 Vienna Convention. This elimination should have no practical effect since the five additional categories identified in the definition in the CSC should cover any type of damage that is likely to be compensated by a court today.[32]

30. See e.g. Explanatory Texts, *supra*, at Section 2.1.

31. See INLEX Report, at Section B.2.1.

32. See Explanatory Texts, *supra*, at Section 2.3.1.

The definition of nuclear damage in the revised Paris Convention differs from the definition in the CSC in two ways. First, the revised Paris Convention includes the word "direct" to qualify the economic interest, which must be adversely affected by impairment of the environment. This qualifier does not appear in the definition in the CSC. Inclusion of "direct" appears to be an attempt to provide guidance on how a court should consider remoteness in determining the extent to which damage is covered. The court, however, still must make the ultimate determination of whether damage is too remote to recover. [33]

Second, the definition of nuclear damage in the revised Paris Convention, unlike the definition in the CSC, does not contain a category of damage for "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 deletion could narrow the scope of damage that may be considered by the competent court. While the other categories of damage may be sufficiently broad to permit a court in a member country to compensate all situations that might be otherwise be covered by the general law on civil liability in that country, the definition in the CSC is broader and allows more scope for a court to compensate economic loss.[34]

A country that is a member of the CSC is obliged to follow the definition of nuclear damage in the CSC, even if it also adheres to the 1960 Paris Convention, the revised Paris Convention, or the 1963 Vienna Convention. The definition of nuclear damage in the revised Vienna Convention is the same as the definition in the CSC.[35]

Why does the definition of nuclear damage in the CSC include the five additional categories of damage only "to the extent determined by the law of the competent court"?

As noted previously, the definition of "nuclear damage" in the 1963 Vienna Convention was sufficiently broad to encompass all types of damage resulting from a nuclear incident but the parameters of the types of damage actually covered were dependent on the law of the competent court. The addition of five explicit categories of damage was intended to require the competent court to consider such damage. The addition of the phrase "to the extent determined by the law of the competent court" was intended to emphasise that the breadth of such coverage continued to be left for the competent court to determine. This approach has the benefit of letting national courts determine the specific application of these categories of damage within national law, while ensuring these kinds of damage are covered. While this approach may result in slightly different coverage in different situations, it recognises the important role that courts play in applying concepts such as "damage" that cannot be precisely defined in advance to address all possible situations.[36]

33. See Explanatory Texts, *supra*, at Section 2.3.2.

34. See Explanatory Texts, *supra*, at Section 3.5.4.

35. See Explanatory Texts, *supra*, at Sections 3.4 and 3.5.4.

36. See Explanatory Texts, *supra*, at Section 2.3.2.

Why does the definition of nuclear damage in the CSC not encompass compensation for general degradation of the environment in cases where there is no economic loss and where no measures of reinstatement are taken?

The category of damage concerning the "cost of measures of reinstatement of impaired environment, unless such loss is insignificant, if such measures are actually taken or are to be taken…" and the category of damage concerning the "loss of income deriving from an economic interest in any use or enjoyment, incurred as a result of a significant impairment of the environment…" are sufficiently broad to permit a competent court to cover any quantifiable economic loss resulting from environmental damage. The competent court would have to determine where to draw the line on the degree of proximate cause required in applying these categories of damage. In particular, the competent court might find that these categories covered situations such as hotels or fishing businesses relying on beaches or fish stocks harmed by releases and perhaps even situations such as subsistence fisheries. The definition, however, does not cover purely non-economic losses such as loss of aesthetic value with no related quantifiable economic loss.[37] This delineation of where compensation could be made available is consistent with the current international practice in dealing with environmental damage.[38]

To what extent does the definition of nuclear damage in the CSC cover economic loss sustained as a result of perceived risk?

The CSC revised the definition of "nuclear incident" to include situations where there is no release of radioactive material but there exists a "grave and imminent threat" of nuclear damage. This new type of nuclear incident creates the possibility that, in certain situations, the definition of nuclear damage may be sufficiently broad to cover damage that results from the perception that radioactive material has been or will be released. Specifically, in those situations where there is no release of radioactive material but there is a situation which creates a grave and imminent threat of nuclear damage, such that there is a nuclear incident and that preventive measures are taken to address the grave and imminent threat, then the cost of those preventive measures and any further costs or damage related thereto are covered by the revised definition of "nuclear damage". The competent court must determine what further loss or damage, if any, was caused by the undertaking of those preventive measures. This broad reading is consistent with the objective to provide that, if there is a nuclear incident, any claim for damage resulting from the incident must be brought within the framework of

37. See Explanatory Texts, *supra*, at Section 2.3.2.

38. See N. J. L. T. Horbach, "International Instruments on Civil Liabilities Applicable to Other Ultrahasardous Activities", Unpublished Presentation at IAEA Regional Workshops on Liability for Nuclear Damage, Lima. Peru (December 11-13, 2006) and Sydney, Australia (November 28-30, 2005). In her presentation, Professor Horbach compared the CSC to the Lugano Convention on Civil Liability Resulting from Activities Dangerous to the Environment, the Convention on Civil Liability for Damage Caused During the Carriage of Dangerous Goods by Road, Rail and Inland Navigation, the Convention on Liability and Compensation for Damage Resulting from Carriage of Hazardous and Noxious Substances by Sea, the Protocol to the Basel Convention on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Waste and their Disposal, the Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters, the International Convention on Civil Liability for Oil Pollution Damage, the Bunkers Convention on Civil Liability for Bunker Oil Pollution Damage, the Convention on International Liability for Damage Caused by Space Objects. Professor Horbach concluded that the treatment in the CSC of damage and, in particular environmental damage, was comparable to and, in some cases, more expansive than the treatment in the other instruments. See also Explanatory Texts, *supra*, at Section 2.3.2.

the CSC and cannot be brought outside that framework. The definitions of "preventive measures" and "reasonable measures" provide guidance to a competent court in determining what damage might be considered to be caused by the undertaking of preventive measures in response to a grave and imminent thereat.

In future situations where there are rumours that a nuclear incident has taken place or is about to take place, the liable operator and the Installation State should work closely with other countries and concerned communities to try to minimise any unfounded perceptions that may arise and to alleviate any economic loss associated with such situations. The IAEA also can assist in such situations by providing a source of independent advice on the level of risk, if any, that might exist.

Finally, if the existence of a nuclear incident cannot be demonstrated to the court that would be the competent court under the CSC, then the CSC will not come into effect and a court will apply general tort law to determine whether a claim could be based on economic loss resulting from the perceived risk and, if so, against whom such a claim could be brought.[39]

What type of economic loss is covered by the definition of nuclear damage in addition to economic loss caused by impairment of the environment?

The last category of nuclear damage concerns "any other economic loss, other than that caused by the impairment of the environment" which can only be compensated "if permitted by the general law on civil liability of the competent court". By using the expression "the general law on civil liability of the competent court", the CSC makes clear that the decision by the competent court on what economic loss can be covered is to be made on the basis of the substantive tort law of the member country with jurisdiction. Accordingly, the last category of nuclear damage covers economic losses to the extent the substantive tort law of the member country with jurisdiction would cover such losses occurring from sources other than a nuclear incident, for example, from an oil spill or from a release of a hasardous substance. In contrast, each of the other four additional categories of damage must be covered to the extent that the competent court decides proper, even if that category of damage would not ordinarily be covered by the law of the competent court.[40]

Why does the CSC not mandate that an Installation State make the first tier of compensation available for nuclear damage wherever suffered (that is, in both member countries and non-member countries)?

As a general rule, the CSC provides that the first tier of compensation will be available for damage wherever suffered. The CSC, however, gives an Installation State the discretion to make funds from the first tier unavailable to compensate nuclear damage in non-member countries.[41] The exercise of this option is subject to the obligations of the Installation State under other conventions on nuclear liability.[42] This approach increases the incentive for all countries (including countries that do not have

39. See INLEX Report, at Section B.2. 2; see Explanatory Texts, *supra*, at Section 2.3.2.

40. See Explanatory Texts, *supra*, at Section 2.3.2.

41. Article III.2 (a) of the CSC.

42. For example, a member country that adhered to the Vienna Convention could not exclude coverage of nuclear damage in another country that adhered to the Vienna Convention, even if that country was not a member country. Likewise, a member country that adhered to the Paris Convention could not exclude coverage of nuclear damage in another country that adhered to the Paris Convention and a member

nuclear installations located on their territory) to adhere to the CSC.[43] As noted previously, widespread adherence to the CSC by both generating States and non-generating States is necessary to minimise the current complexity and diversity of obligations relating to liability for nuclear damage.

Why does the CSC prohibit the use of the international fund (that is, the second tier of compensation) to cover nuclear damage in non-member countries?

The CSC limits the use of the international fund to compensate nuclear damage that occurs in a geographic scope that is precisely defined and that excludes non-member countries.[44] There are a number of reasons for the exclusion of nuclear damage in non-member countries. First, this approach increases the incentive for countries to adhere to the CSC. Second, the international fund is based on contributions of public funds by member countries. Third, contribution of public funds to the international fund is a responsibility that is created by the CSC and that does not otherwise exist under international law.

Could an installation state exercise the option to exclude damage suffered in a non-member country from the first tier of compensation with a proviso that damage in non-member countries suffered by nationals of a member country would be covered?

With respect to first tier compensation, the law of an Installation State may exclude damage suffered in a non-member country. When an Installation State exercises its option to exclude damage suffered in non-member countries, this exclusion applies to all damage suffered in such countries even if suffered by nationals of a member country. In other words, provided that damage is suffered within the "geographical scope" of the CSC, nationals of non-member countries also can obtain compensation; conversely, if damage is suffered outside that "geographical scope", compensation cannot even be obtained by nationals of member countries. A contrary result would be inconsistent with the non-discrimination principle.[45]

How does the CSC make an adequate amount of compensation available?

The CSC was developed specifically to address concerns that the levels of compensation required by the 1963 Vienna and 1960 Paris Conventions were inadequate. As noted previously, the CSC requires Installation States to assure the availability of a first tier compensation amount of SDR 300 million and requires memb er countries to contribute to an international fund that will supplement the amount of compensation available. When widespread adherence to the CSC is achieved, these two tiers will make more than SDR 600 million available to compensate nuclear

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country that adhered to the Joint Protocol could not exclude coverage of nuclear damage in another country that adhered to the Joint Protocol. In addition, the revised Paris and the revised Vienna Conventions restrict the extent to which damage in other countries can be excluded.

43. See e.g. Explanatory Texts, *supra*, at Sections 2.2.3 and 3.5.3.

44. Articles 111.2.b, V and XI.1.b of the CSC. See Explanatory Texts, *supra*, at Section 3.5.3.

45. See Explanatory Texts, *supra*, at Section III.7 (pp. 87-89).

damage in member countries. Thus, widespread adherence to the CSC is the best way to ensure adequate compensation.[46]

Does the CSC limit the amount of compensation?

The CSC establishes two tiers of compensation to cover nuclear damage in member countries. While the first tier is fixed at SDR 300 million, the second tier will grow as the use of nuclear power to generate electricity increases.[47]

The CSC also permits an Installation State to establish a third tier of compensation to cover nuclear damage not covered by the first two tiers. As noted previously, this tier is not subject to the requirements of the CSC, including, with one minor exception, the requirement to cover nuclear damage in other member countries.[48] However, in order to encourage widespread adherence to the CSC, each Installation State should give consideration to establishing a third tier and making it available to cover nuclear damage in all member countries. In establishing a third tier, an Installation State should endeavour to make it as high as feasible. At a minimum, an Installation State should limit the liability of an operator to a level no lower than the amount of insurance reasonably available. Consideration also should be given to other mechanisms to increase the funds available to compensate nuclear damage. For example, in some countries, it may be feasible to require operators to pool their resources to create a form of self-insurance that will make more funds available in the event of a nuclear incident.

Does the CSC limit the liability of the operator?

The CSC focuses on making an assured amount of compensation available. Accordingly, the CSC does not establish either a floor or a ceiling on the liability of the operator or require an Installation State to limit the liability of the operator. There is an expectation, however, that the liable operator will provide the funds for the first tier of compensation and, if the liable operator does not do so, the CSC requires the Installation State to make up the difference between the amount provided by the liable operator and SDR 300 million.

Some countries have imposed unlimited liability on operators. Unlimited liability, however, does not translate into compensation for damage, except to the extent that the operator has insurance or other financial assets to pay the compensation.[49]

Against whom should a claim be brought if the amount of nuclear damage exceeds the limit on the liability of the operator?

If an Installation State limits the liability of an operator to an amount lower than the amount of nuclear damage, questions may arise as to whether the operator is technically liable for damage exceeding the limit so established, and doubts may consequently arise as to whether the claimants

46. Article III.1 of the CSC; see INLEX Report, at Section B.2.4; see Explanatory Texts, *supra*, at Section 3.6; see also Compensation Convention, *supra*, at 29-31.

47. See Explanatory Texts, *supra*, at Section 3.6.2.

48. Article XII.2 of the CSC; see Explanatory Texts, *supra*, at Section 3.5.3.

49. See e.g. Explanatory Texts, *supra*, at Section 2.4.3.

have to bring separate proceedings against the operator and against the Installation State, and, if so, what is the basis for the suit against the Installation State. The CSC imposes an obligation on a member country to ensure that its national law resolves any such questions in a manner that does not require claimants to bring separate proceedings according to the origin of the funds provided for compensation.[50]

Must an installation state make public funds available to the member country whose courts have jurisdiction in the event of a nuclear incident occurring in the course of transport of nuclear material?

As noted previously, the CSC imposes an obligation on the Installation State to make public funds available to compensate nuclear damage to the extent the liable operator does not make SDR 300 million available. In the event of a nuclear incident during transportation that results in another member country having jurisdiction over the incident, the Installation State must make these public funds available to the system of disbursement of the member country whose courts have jurisdiction. This approach is consistent with the provisions in the CSC that there should be a single system of disbursement and that persons suffering damage need not bring separate proceedings because of the origin of the funds.[51]

May a member country invoke jurisdictional immunities to avoid its obligations under the CSC to make funds available?

A member country cannot invoke jurisdictional immunities or take other actions to avoid making funds available pursuant to the CSC. Failure to make funds available would be inconsistent with the obligations of the member country under the CSC. No inference to the contrary should be drawn from the fact that the CSC, unlike both the revised Vienna Convention and the revised Paris Convention, does not contain explicit provisions that a member country can be sued for compensation of nuclear damage and may not invoke jurisdictional immunities.[52]

Must the courts of all member countries enforce a judgment by the competent court?

A judgment by a court of the member country with exclusive jurisdiction over a nuclear incident is enforceable in the courts of another member country as if the judgment were a judgment by a court of that country.[53] Reconsideration of the merits of the case is never permitted. Thus, the CSC provides very substantial assurance that a judgment by a competent court will be enforced in the courts of another member country. In the absence of the CSC, the enforceability of judgments would be uncertain and subject to rules that vary widely from country to country with many exceptions.[54]

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50. Article X.2 of the CSC; see Explanatory Texts, *supra*, at Section 3.9.3.

51. Article X of the CSC; see Explanatory Texts, *supra*, at Section 3.8.

52. See Explanatory Texts, *supra*, at Section 3.9.3.

53. There are three minor exceptions to the general rule. The exceptions are: (1) judgments obtained by fraud; (2) judgments against a party who was not given a fair opportunity to present his case; and (3) judgments against public order or contrary to fundamental standards of justice. Given the nature of the regime established by the CSC, it is highly unlikely these exceptions could ever be invoked.

54. Article XIII.5-7 of the CSC; see Explanatory Texts, *supra*, at Sections 1.4, 2.10 and 3.9.4.

How difficult would it be to bring a claim under the CSC?

As noted previously, the CSC minimises the need for litigation and grants exclusive jurisdiction to the countries where most of the damage is likely to occur. Thus, bringing claims under the CSC should be considerably less difficult than under ordinary tort law where potential claimants might have to engage lawyers for protracted periods of time and, in some cases, deal with a distant foreign court. In fact, since a claimant needs only show causation and amount of damage, there is a strong likelihood that most claims could be resolved through an insurance claims adjustment process without resort to the court system. As a practical matter, if a nuclear incident were to occur, potential claimants would be informed very quickly as to how to file claims with insurance adjustors and such claims would likely be paid in a prompt and consistent manner. Resort to judicial proceedings would likely only be needed where there was a dispute as to whether a particular type of damage was covered by the competent court.

Does the CSC require non-generating States and, in particular, those member countries with no nuclear installations to contribute to the international fund?

The CSC requires all member countries to contribute to the international fund, except for those member countries that have no nuclear installations and that pay the minimum UN rate of assessment.[55] As noted previously, only a small percentage of the total contributions to the international fund will come from non-generating countries. Although small, this contribution represents a very important element of international solidarity. In addition, given the interdependencies in the world today, all countries will benefit from the increased use of nuclear power to generate electricity. Moreover, a member country, regardless of whether there are any nuclear installations located on its territory, receives important advantages by adhering to the CSC, including the assurance of meaningful compensation and exclusive jurisdiction over nuclear incidents in its territory, territorial sea or EEZ.

Must each member country, including a member country with no nuclear installations on its territory, have national law on nuclear liability?

The CSC is clear that a member country must have national law based on the Paris Convention, the Vienna Convention or the Annex to the CSC.[56] A member country also must implement the overarching provisions in the CSC, including those related to jurisdiction, compensation and the definition of nuclear damage.

The drafters of the CSC recognised that the need to adopt national law might be a disincentive to some countries, especially a country that has no nuclear industry and thus has no need for a nuclear liability regime, except as a contingency in the event of an incident 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. The CSC also is clear that a member country with no nuclear installations on its territory

55. Article IV of the CSC; see Explanatory Texts, *supra*, at Section 3.6.2. See also Compensation Convention, *supra*, at 30.

56. Article II.1 of the CSC.

need only implement those provisions of the CSC necessary to give effect to its obligations under the CSC.[57]

The development of generic minimum legislation both for countries with nuclear installations and for countries without nuclear installations would facilitate adherence to the CSC. It would be particularly helpful to identify those provisions that only apply to an Installation State, those provisions that can be self executing in countries that permit self-executing treaty obligations, those provisions that require affirmative action by a member country, and those differences, if any, that arise because a country bases its national law on the 1960 Paris Convention, the revised Paris Convention, the 1963 Vienna Convention, the revised Vienna Convention or the Annex to the CSC.[58]

What is the applicable law in the event of a nuclear incident during transportation?

The CSC is clear that the applicable law is the law of the competent court.[59] In other words, the applicable law for a nuclear incident is the law of the court of the member country that has exclusive jurisdiction over the incident. In the case of a nuclear incident during transportation occurring in the territory, territorial sea or EEZ of a member country, the applicable law would be the law of the courts of that country and not the law of the courts of the Installation State.[60]

Will the competent court always apply its law?

The CSC defines the "law of the competent court" to be the law of the court having jurisdiction under the CSC, including any rules relating to conflict of laws. In applying its rules relating to conflict of laws, a competent court may determine that the applicable substantive law is the substantive law of another country. However, as noted previously, many of the provisions of the CSC, as well as the Paris Convention and the Vienna Convention, explicitly direct the competent court to apply its substantive law or the substantive law of the Installation State or another country.[61] This direction takes precedence over any different outcome that would result from the normal application of the rules

57. Chapeau of Annex to CSC; see Explanatory Text at Sections 1.2 and 3.4.

58. See INLEX Report, at Section B.2.3.

59. Article XIV.2 of the CSC; see Explanatory Texts, *supra*, at Section 3.10.

60. In the matter of applicable law, the result under the Joint Protocol appears to differ from the explicit rule in the CSC that the applicable law is the law of the competent court. The Joint Protocol provides that the applicable convention is always the convention to which the Installation State adheres. While the Joint Protocol does not explicitly address applicable law, it is reasonable to infer that the applicable law would be the law of the Installation State adopted pursuant to the applicable convention and not the law of the country with jurisdiction if that law were adopted pursuant to the convention that is not applicable. Some have suggested that, in such a situation, the courts of the Installation State should have jurisdiction. These and related issues on the operation of the Joint Protocol have been the subject of considerable discussion and have not been resolved at the time of this article. These issues relate only to the Joint Protocol and thus their ultimate resolution will not affect how the CSC operates.

61. Article XIV.1 of the CSC recognises this direction by qualifying the rule that the applicable law is the law of the competent court with the phrase "subject to the provisions of this Convention, the Vienna Convention or the Paris Convention, as appropriate." See Explanatory Texts, *supra*, at Sections 1.4, 2.8 and 3.10. It would facilitate adherence to the CSC to expand upon the discussion in the Explanatory Texts by developing a list of the relevant provisions and identifying for each provision whether it is to be applied by reference to the law of the competent court, the law of the Installation State or another basis.

of the competent court relating to conflict of laws. Thus, the CSC provides greater certainty as to what substantive law will apply with respect to a nuclear incident in a member country than is the case in normal tort litigation.[62]

Why does the CSC qualify the rule on the applicable convention by the phrase "as appropriate"?

As noted previously, the CSC requires a member country to base its national law on the Paris Convention, the Vienna Convention or the Annex to the CSC. The CSC is clear that, with respect to the provisions of law of a particular member country that are based on the Paris Convention, the Vienna Convention or the Annex to the CSC, the instrument on which those provisions are based is the applicable convention to the exclusion of the other two instruments. However, unlike the Joint Protocol,[63] the CSC contains a number of overarching provisions that apply to all member countries and must be reflected in their national law. The use of the phrase "as appropriate" recognises that these overarching provisions in the CSC take precedence over provisions in the Paris Convention and the Vienna Convention[64] to the extent those provisions are inconsistent with the overarching provisions in the CSC.[65]

Does the CSC mandate uniform periods of extinction and prescription?

The treatment of periods of extinction and prescriptions is dependent on whether a member country has national law based on the 1960 Paris Convention, the revised Paris Convention, the 1963 Vienna Convention, the revised Vienna Convention or the Annex to the CSC. These instruments provide for different periods of extinction and prescription within which claims must be brought. The differing treatment of periods of extinction and prescription in the various instruments resulted from attempts to balance the constraints imposed by the availability of insurance (in most cases limited to 10 years) and the desire to ensure compensation for all damage, and in particular, latent personal injuries. All the instruments, however, provide an Installation State with sufficient flexibility to permit claims to be brought beyond 10 years. In order to promote broader adherence to the CSC, Installation

62. The rules relating to conflict of laws vary from country to country. For example, different approaches to dealing with conflict of laws can result in the applicable substantive law being that of the country where an accident occurs, or a country where damage occurs, or a country where a tortfeasor resides or has substantial ties.

63. The Joint Protocol differs fundamentally from the CSC in that the Joint Protocol establishes no overarching provisions that apply to all countries. Rather, the Joint Protocol merely provides for a mutual extension of the Paris Convention and the Vienna Convention. Specifically, if a nuclear incident occurs for which an operator is liable under both the Vienna Convention and the Joint Protocol, the Vienna Convention shall apply to cover nuclear damage suffered not only in the territory of Parties thereto, but also in the territory of Parties to both the Paris Convention and the Joint Protocol; conversely, if an incident occurs for which an operator is liable under both the Paris Convention and the Joint Protocol, the Paris Convention shall apply to cover nuclear damage suffered not only in the territory of Parties thereto, but also in the territory of Parties to both the Vienna Convention and the Joint Protocol. Thus, the Joint Protocol provides that either the Paris Convention or the Vienna Convention shall be the applicable convention to the exclusion of the other convention. See Explanatory Texts, *supra*, at Section 1.5.

64. The provisions of the Annex to the CSC were developed to be consistent with the overarching provisions in the CSC.

65. Article XIV.1 of the CSC; see Explanatory Texts, *supra*, at Section 3.10.

States should consider using this flexibility to ensure compensation is available for latent personal injuries, even if insurance is not available.[66]

Is the availability of insurance essential to an effective and protective global nuclear liability regime?

The importance of insurance to effective liability regimes has long been recognised. Specifically, insurance is the primary mechanism by which operators assure that sufficient funds will be available to pay claims brought under liability regimes. In fact, the first tier amount of SDR 300 million reflects, in large part, the fact that SDR 300 million was the amount of insurance generally available to cover nuclear incidents at the time the CSC was adopted.

However, the availability of insurance to cover all claims is not essential to an effective and protective global nuclear liability regime. The insurance industry makes its decisions on what types of damage to cover on the basis of a number of factors including the presence of an insurable economic interest and the ability to assign a level of risk. Prior to the adoption of the CSC, the insurance industry indicated it most likely would not be able to insure certain types of damage under consideration, including certain types of environmental damage and claims brought more than ten years after a nuclear incident. The inclusion of these types of damage within the CSC represents a decision that such damage should be covered, regardless of whether insurance is available. Accordingly, Installation States should work with operators to develop mechanisms to cover claims for damage for which insurance is not available.[67]

Does the CSC cover acts of terrorism?

The CSC does not cover a nuclear incident caused by an act of "armed conflict, hostilities, civil war or insurrection". The phrase "… armed conflict, hostilities, civil war or insurrection" refers to international or non-international armed conflict and does not refer to an act committed in the context of a situation that remains below the threshold of an armed conflict governed by international humanitarian law. Thus, the CSC does cover acts of terrorism.[68]

Does the CSC address the issue of State liability?

The CSC is clear that it does not affect the rights and obligations of member countries, if any, under the general rules of public international law. All of the rights, obligations and responsibilities of a member country under the CSC arise solely from its adherence to the CSC and, in some cases, to the Paris Convention, the Vienna Convention or the Joint Protocol.[69]

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66. See INLEX Report, at Section B.2.5; see Explanatory Texts, *supra*, at Section 2.6; see also Compensation Convention, *supra*, at 37.

67. The magnitude of this issue should not be exaggerated. As a practical matter, insurance is available to cover the vast majority of the damage covered by the CSC, including most damage within the five additional categories of damage.

68. See Explanatory Texts, *supra*, at Section 2.5.

69. Article XV of the CSC; see Explanatory Texts, *supra*, at Sections 2.2.1 and 3.5.

Conclusion

Establishment of a global nuclear liability regime based on the CSC is essential to fully realising the potential benefits from nuclear power with respect to economic development, living standards, energy prices and supplies, and the environment. Since the adoption of the CSC in 1997, considerable effort has been expended to provide a better understanding of the CSC and to clarify how its provisions operate to establish a legal framework that achieves the complementary objectives of facilitating commercial development of nuclear power and assuring, in the unlikely event of a nuclear incident, the prompt availability of meaningful compensation with a minimum of litigation and other burdens. This effort has provided a sound basis on which both generating States and non-generating States can now give serious consideration to adhering to the CSC and thereby establish a global nuclear liability regime.