

Application of the nuclear liability regimes to the carriage of nuclear products

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Preliminary note: the abbreviations used in the text correspond to:

- **VC:** the 1963 Vienna Convention on Civil Liability for Nuclear Damage;
- **Revised VC:** Consolidated text of the Vienna Convention on Civil Liability for Nuclear Damage, as amended by the 1997 Protocol to Amend the Vienne Convention on Civil Liability for Nuclear Damage;
- **CSC:** the 1997 Convention on Supplementary Compensation for Nuclear Damage;
- **PC:** Paris Convention on Third Party Liability in the Field of Nuclear Energy of 29th July 1960, as amended by the Additional Protocol of 28th January 1964 and by the Protocol of 16th November 1982 and the Protocol of 12 February 2004.

I. Introduction

Part 2 of Bill C-22, which received Royal Assent on February 26, 2015 contains the new Nuclear Liability and Compensation Act which refers to the *Convention on Supplementary Compensation for Nuclear Damage (CSC)*. The CSC was signed by Canada in December 2013 and not yet ratified.

This reform raises the question of the application of the nuclear liability regimes to the carriage of nuclear products (when totally or partly by ship). During the Committee conference call meeting on March 24, 2015, it was considered important to review nuclear liability conventions (the CSC and others) in order to clarify the international legal framework for the carriage of nuclear products, and the junction/ delineation with maritime liability regimes.

Hence, this report will first present the existent nuclear liability conventions and, second, their application to maritime carrier liability for the carriage of nuclear materials.

Owing to the complexity of the conventions and the number of separate matters of legal interest, that they cover, the report adopts a topical approach.

II. Presentation of the nuclear liability regimes

Before analyzing the provisions of the nuclear conventions that relate to maritime carrier liability, it is necessary to identify them, to determine what type of consignments are covered and to consider their basic principles.

A. Identification of nuclear liability Conventions and Protocols

There is a set of international conventions, which form an international nuclear liability regime. It includes:

- The *Convention on Third Party Liability in the Field of Nuclear Energy* of 29 July 1960 (known as **Paris Convention**). This convention was developed under OECD¹ and limits membership to OECD member States;
- The *Convention Supplementary to the Paris Convention* of 1963 (known also as Brussels Supplementary Convention). This Convention is designed to supplement the 1960 Paris Convention by increasing the amount of compensation for damage suffered in the parties' territory;
- The *Convention on Civil Liability for Nuclear Damage* of 1963 (known as **Vienna Convention**), developed under IAEA² auspices to form the basis for a worldwide system. Contrary to Paris Convention, Vienna Convention is open for membership by all States;
- The 1971 *Maritime Carriage of Nuclear Material Convention* was intended to resolve potential conflicts, which would arise from the simultaneous application of maritime liability regimes and the **Paris and Vienna Conventions**;
- The 1988 *Joint Protocol in Relation to the Application of the Vienna Convention and the Paris Convention* established treaty relations between members of the Vienna and Paris regimes;
- The 1997 *Protocol to Amend the Vienna Convention on civil liability for nuclear damage*;
- The *Convention on Supplementary Compensation for Nuclear Damage* of 12 September 1997 was developed as an umbrella for the other international liability conventions and to provide the basis for a global nuclear liability regime that could attract broad adherence from countries with and without nuclear power plants;
- The 2004 *Protocols to Amend the Paris and Brussels Conventions*.

The Convention on Supplementary Compensation for Nuclear Damage of 12 September 1997 (CSC) is a « **free standing convention** ». Membership is open to all parties to the **VC** and **PC**³, as well as to

¹ OECD: Organization for Economic Cooperation and Development

² IAEA: International Atomic Energy Agency

³ Note that Canada has not adhered to the liability regimes established by the Paris Convention, the Vienna Convention, the revised Vienna.

countries that have domestic nuclear liability statutes, which conform to the requirement set forth in the **CSC's Annex** (ex: Canada).

The preamble of the CSC makes it clear that the objective is the establishment of « *a worldwide liability regime to supplement and enhance* » measures provided in the Vienna and Paris Conventions as well as in « *national legislation (...) consistent with the principles of these Conventions* »⁴. Furthermore, the CSC sets out specific provisions on civil liability for nuclear damage **in an Annex**, which constitutes an integral part of the Convention,⁵ and the CSC's purpose is to:

“supplement the system of compensation provided pursuant to national law which:

(a) implements one of the instruments referred to in Article I (a) and (b) [i.e., Paris or Vienna Conventions]; or

*(b) complies with the provisions of the Annex to this Convention”*⁶ [ex: Canada].

B. Nuclear “substances” or “materials” covered

The Nuclear Conventions relate to liability for “nuclear damage”⁷ caused by a “nuclear incident”⁸

⁴ The Preamble states: “Recognizing the importance of the measures provided in the Vienna Convention on Civil Liability for Nuclear Damage and the Paris Convention on Third Party Liability in the Field of Nuclear Energy as well as in national legislation on compensation for nuclear damage consistent with the principles of these Conventions; Desirous of establishing a worldwide liability regime to supplement and enhance these measures with a view to increasing the amount of compensation for nuclear damage; Recognizing further that such a worldwide liability regime would encourage regional and global co-operation to promote a higher level of nuclear safety in accordance with the principles of international partnership and solidarity” Convention on Supplementary Compensation for Nuclear Damage (CSC).

⁵ **CSC, article II. 3:** “ The Annex (...) shall constitute an integral part of this Convention”.

⁶ CSC, article II.1.

Articles XVIII and XIX of the CSC state also that: “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”. See generally: IAEA, “The 1997 Vienna Convention on civil liability for Nuclear Damage and the 1997 Convention on Supplementary Compensation for Nuclear Damage. Explanatory texts” (2003) 3 IAEA Int Law Ser, online: <http://www-pub.iaea.org/MTCD/publications/PDF/Pub1279_web.pdf> at 64.

⁷ **CSC, article I (f):** “Nuclear Damage means: (i) loss of life or personal injury; (ii) loss of or damage to property; and each of the following to the extent determined by the law of the competent court: (iii) economic loss arising from loss or damage referred to in sub-paragraph (i) or (ii), insofar as not included in those sub-paragraphs, if incurred by a person entitled to claim in respect of such loss or damage; (iv) the costs of measures of reinstatement of impaired environment, unless such impairment is insignificant, if such measures are actually taken or to be taken, and insofar as not included in sub-paragraph (ii); (v) loss of income deriving from an economic interest in any use or enjoyment of the environment, incurred as a result of a significant impairment of that environment, and insofar as not included in sub-paragraph (ii); the costs of preventive measures, and further loss or damage caused by such measures; (vii) any other economic loss, other than any caused by the impairment of the environment, if permitted by the general law on civil liability of the competent court, in the case of sub-paragraphs (i) to (v) and (vii)

occurring in a “nuclear installation” or in the course of transport of “nuclear material” to or from such an installation. Thus, it is important for maritime carrier to determine whether their consignments are actually covered by the nuclear conventions.

Definitions of “nuclear materials or substances” are presented in the table below. The Conventions exclude certain nuclear products:

- uranium and depleted uranium;
- radioisotopes⁹ and nuclear fuels which have been refined to the point where they can be used for scientific, medical or industrial purposes¹⁰;

	VC	Revised Vienna	CSC	PC
Nuclear material/ substances	VC and revised VC Art. I. 1 (h); CSC, annex, art. 1 (c): “Nuclear material” means: (i) nuclear fuel, other than natural uranium and depleted uranium, capable of producing energy by a self- sustaining chain process of nuclear fission outside a nuclear reactor, either alone or in combination with some other material; and (ii) radioactive products or waste.			Art. 1 (a) (v): "Nuclear substances" means nuclear fuel (other than natural uranium and other than depleted uranium) and radioactive products or waste.

above, to the extent that the loss or damage arises out of or results from ionizing radiation emitted by any source of radiation inside a nuclear installation, or emitted from nuclear fuel or radioactive products or waste in, or of nuclear material coming from, originating in, or sent to, a nuclear installation, whether so arising from the radioactive properties of such matter, or from a combination of radioactive properties with toxic, explosive or other hazardous properties of such matter”.

⁸ **CSC, Article I. (i):** “Nuclear incident means any occurrence or series of occurrences having the same origin which causes nuclear damage or, but only with respect to preventive measures, creates a grave and imminent threat of causing such damage”.

⁹ It was explained that: “Risks which arise in respect of radioisotopes usable for any industrial, commercial, agricultural, medical, scientific or educational purposes are excluded from the scope of the Convention, provided the radioisotopes have completed their final stage of manufacture and are outside a nuclear installation. Such risks are not of an exceptional nature and, indeed, are covered by the insurance industry in the ordinary course of business. Despite the rapidly increasing use of radioisotopes in many fields, which will require continual and careful observance of health protection precautions, there is little possibility of catastrophe. Hence no special third party liability problems are posed and the matter is left to ordinary legal régimes” (NEA) Nuclear Energy Agency, *Exposé des Motifs [Revised text of the Exposé des Motifs of the Paris Convention, approved by the OECD Council on 16th November 1982.]*.

¹⁰ It was explained that: “The special liability regime does not apply to radiation damage caused by radioactive sources in use in facilities such as hospitals and in industry. This results from the definition of “radioactive products or waste” (Article I.1(g)), which expressly excludes “radioisotopes which have reached the final stage of fabrication so as to be usable for any scientific, medical, agricultural, commercial or industrial purpose” IAEA, *supra* note 6 at 8.

	<p>VC and revised VC Art. I (1) (f); CSC, Annex, art. I. 1 (a): “Nuclear fuel” means any material which is capable of producing energy by a self-sustaining chain process of nuclear fission.</p>	<p>Art. 1 (a) (iii) : “Nuclear fuel” means fissionable material in the form of uranium metal, alloy, or chemical compound (including natural uranium), plutonium metal, alloy, or chemical compound, and such other fissionable material as the Steering Committee shall from time to time determine.</p>
	<p>VC Art. I (1) (h); revised VC Art. I. 1 (g); CSC, annex, art. 1 (e): “Radioactive products or waste” means any radioactive material produced in, or any material made radioactive by exposure to the radiation incidental to, the production or utilization of nuclear fuel, but does not include radioisotopes which have reached the final stage of fabrication so as to be usable for any scientific, medical, agricultural, commercial or industrial purpose.</p>	<p>Art. 1 (a) (iv) : “Radioactive products or waste” means any radioactive material produced in or made radioactive by exposure to the radiation incidental to the process of producing or utilizing nuclear fuel, but does not include (1) nuclear fuel, or (2) radioisotopes outside a nuclear installation which have reached the final stage of fabrication so as to be usable for any industrial, commercial, agricultural, medical, scientific or educational purpose.</p>

In addition to these exclusions expressly mentioned in the conventions, deliberative bodies of international organizations that have developed each convention (i.e., the IAEA, the OECD) may establish maximum limits for the exclusion of “small quantities” of the sources of nuclear energy transported from the scope of application of the conventions¹¹. Consequently, in order to determine that the nuclear conventions are applicable to their consignments, **it is important for carriers to take into account the decisions of the pertinent deliberative bodies and the regulations established by each Contracting parties.**

¹¹ **VC & revised Vienna article I (2) and CSC, Annex, article 1.2:** “An **Installation State** may, if the small extent of the risks involved so warrants, exclude any nuclear installation or small quantities of nuclear material from the application of this Convention, provided that: (a) with respect to nuclear installations, criteria for such exclusion have been established by the Board of Governors of International Atomic Energy Agency and any exclusion by an Installation State satisfies such criteria; and (b) with respect to small quantities of nuclear material, maximum limits for the exclusion of such quantities have been established by the Board of Governors of the International Atomic Energy Agency and any exclusion by an Installation State is within such established limits. The criteria for the exclusion of nuclear installations and the maximum limits for the exclusion of small quantities of nuclear material shall be reviewed periodically by the Board of Governors”.

PC, article 1(b): “The Steering Committee may, if in its view the small extent of the risks involved so warrants, exclude any nuclear installation, nuclear fuel, or nuclear substances from the application of this Convention”.

C. General principles of the CSC common to other nuclear conventions

Despite variations in the details, the overall scheme of the international nuclear liability regimes is based on the following elements:

1. Liability of the operator of a nuclear installation is strict. There is no need to demonstrate fault, negligence or intent;
2. All the nuclear conventions channel liability exclusively to the operators of the nuclear installation where the incident occurs or which has responsibility for the transported material involved in an incident. All other persons, who may otherwise have been liable (ex: carriers), are thereby relieved of liability for nuclear damage arising from that incident;
3. Jurisdiction is conferred on the courts of one State only, this generally being the country where the nuclear incident occurred¹²;
4. The amount of compensation available is strictly limited. However, additional funding has been made available by the 1963 Brussels Supplementary Convention and the 1997 Convention on Supplementary Compensation;
5. Compensation will only be paid if a claim is brought against an operator within a defined amount of time. An action needs to be brought within 10 years; a period which may be increased or decreased if national legislation of the installation State provides financial security. However, the period within which a claim must be brought is increased to 30 years, for damage resulting in loss of life or personal injury;
6. A system of compulsory insurance up to the prescribed limit of liability must be held by the operator and must be guaranteed by the Installation State. Additional public funds are provided under supplementary Conventions under both the Vienna and Paris regimes.

III. Application of the nuclear regimes to maritime transport of nuclear materials

Some provisions of the nuclear conventions dealing with the operator's liability relate also to maritime carrier's liability. The identified provisions deal with: the principle of legal channeling, the technical coverage of the conventions, the resolution of potential conflict with maritime regimes and the recourse actions available.

A. Legal channelling

All liability is channeled on to **the operator of the nuclear installation**¹³. His liability is absolute¹⁴, exclusive and extends to damage caused at the installation but also **during the shipment of nuclear material to or from the installation**¹⁵.

¹² On this specific issue see: Andrea Gioia, "Maritime Zones and the New Provisions on Jurisdiction in the 1997 Vienna Protocol and in the 1997 Convention on Supplementary Compensation" (1999) Nuclear Law Bulletin, 25, online: < <http://www.oecd-nea.org/law/nlb/NLB-63/gioia.pdf>>.

¹³ The operator is defined as: "the person designated or recognized by the Installation State as the operator of that installation" (**VC & revised Vienna**, article I. 1 (c); **CSC, Annex**, Article 1.4), or as: "the

Therefore, as in the case of other contractors dealing with the operator of a nuclear installation, **maritime carriers also benefit from the exoneration from liability** which is afforded through the principle of channelling liability to the operator. This principle should be retained in the new Canadian legislation as precised by **Natural Resources Canada**:

*“ The legislation would maintain the key principle of “absolute liability,” — this makes the operator of the nuclear facility responsible for civil injury and damage. It means that victims do not need to prove fault to make claims for injury or damages. Another important principle of the legislation is “exclusive liability of the operator,” which means that the operator alone is liable, to the exclusion of others such as suppliers and contractors. These important principles will be retained in the new legislation”*¹⁶.

However, all of the conventions provide that the operator is not liable if the incident causing damage is directly due to “an act of armed conflict¹⁷, hostilities, civil war or insurrection”; neither is he liable, unless the law of the Installation State provides to the contrary, if the incident is due to “a grave natural disaster of an exceptional character”¹⁸.

person designated or recognized by the competent public authority as the operator of that installation” (PC, article 1. (a) (vi)).

In Canada, the Nuclear Liability Act, article 2 defines the operator as: “*the holder of a subsisting licence issued pursuant to the Nuclear Safety and Control Act for the operation of a nuclear installation or, in relation to any nuclear installation for the operation of which there is no subsisting licence, the recipient of the licence last issued pursuant to the Nuclear Safety and Control Act for the operation of that nuclear installation*”. Online: < <http://laws-lois.justice.gc.ca/eng/acts/N-28/FullText.html>>

¹⁴ **CSC**, Annex, Article 3.3: “*The liability of the operator for nuclear damage shall be absolute*”. Thus, the claimant is not required to prove fault. His only burden is to show that the damage was caused by the nuclear incident. The same principle prevails in the Canadian Nuclear Liability Act, article 4: “*Subject to this Act, an operator is, without proof of fault or negligence, absolutely liable for a breach of the duty imposed on him by this Act*”. See: < <http://laws-lois.justice.gc.ca/eng/acts/N-28/FullText.html>>

¹⁵ **CSC**, Annex, article 3 (b) and (c). **Vienna & revised Vienna**, article II (b) and (c). **PC**, article 4 (a) and (b).

¹⁶ Natural Resources Canada, “Nuclear Liability and Compensation Act”, online: <<http://www.nrcan.gc.ca/media-room/backgrounders/2013/1831>>.

¹⁷ Concerning terrorism, the Explanatory texts specify that: “In the light of recent events in international relations, it seems important to point out that an act of terrorism is not, per se, a cause of exoneration from nuclear liability; this is confirmed by the travaux préparatoires of both the 1963 Convention and the 1997 Protocol” IAEA, *supra* note 6 at 48.

¹⁸ **VC** article IV. 3 (b); **CSC, Annex**, article 3. 5 (b). This cause of exoneration was removed from Revised Vienna and PC 2004.

The Exposé des motifs to the Paris Convention specifies: “The absolute liability of the operator is not subject to the classic exonerations such as force majeure, Acts of God or intervening acts of third persons, whether or not such acts were reasonably foreseeable and avoidable. Insofar as any precautions can be taken, those in charge of a nuclear installation are in a position to take them, whereas potential victims have no way of protecting themselves. The only exonerations lie in the case of damage caused by a nuclear incident directly due to certain disturbances of an international character

B. Who is the liable operator?

Even if the operator is primarily responsible for damage caused by nuclear incident occurring during shipment and during a storage incidental to the transport, it is important to identify which operator, *consignor or consignee*, is liable.

Normally, the conventions impose liability on the *sending or consigning* operator because, in fact, he will be in charge for the packing and containment of the nuclear goods and for ensuring that these comply with the applicable health and safety regulation¹⁹.

The liability of the *sending operator* ends when the operator of another nuclear installation in a Contracting State has assumed liability pursuant to the “express terms of a written contract”²⁰, or in the absence of such express terms, when the operator of another installation has “taken charge” of the nuclear material²¹. However, for transport of nuclear substances to or from installations situated in its territory, a Contracting Party may require the operators of the installations for whom the substances are carried from abroad to take the substances in charge the moment the substances reach its territory or even earlier. Similarly, in the case of nuclear substances sent by operators of nuclear installations in its territory to a foreign destination, a Contracting Party may require that the nuclear substances shall remain in the charge of such operators until they have left its territory or even longer²².

such as acts of armed conflict and hostilities, of a political nature such as civil war and insurrection, or grave natural disasters of an exceptional character, which are catastrophic and completely unforeseeable, on the grounds that all such matters are the responsibility of the nation as a whole. No other exonerations are permitted. The national legislation of the operator liable may, however, provide that he is to be liable even in the case of a grave natural disaster of an exceptional character. Where the incident or damage is caused wholly or partly by the person suffering damage, it will be for the competent court, in accordance with national law, to decide the effect of such negligence upon the claim for compensation” [Revised text of the Exposé des Motifs of the Paris Convention, approved by the OECD Council on 16th November 1982.]. Online: < https://www.oecd-nea.org/law/nlparis_motif.html >.

¹⁹ It was also explained that: “It would seem normal, in the case of transport, for the carrier to be the person liable and this is the present situation at common law. However, in the case of nuclear substances, very special considerations are involved. The carrier will generally not be in a position to verify the precautions in packing and containment taken by the person sending the substances. Moreover, if the carrier is to be liable he will have to obtain the necessary insurance coverage in respect of potentially high liability, and this would result in increased transport charges for the operator. Transport insurance ordinarily covers only the value of the goods transported, i.e., their loss or destruction, and does not extend to damage which such goods may cause to third persons.” Nuclear Energy Agency, *supra* note 9.

²⁰ **VC & revised Vienna**, article II (1) (b) (i); **PC**, article 4 (b) (i); **CSC, Annex**, article 3 (1) (b) (i).

²¹ **VC & revised Vienna**, article II (1) (b) (ii); **PC**, article 4 (b) (ii); **CSC, Annex**, article 3 (1) (b) (ii).

²² Nuclear Energy Agency, *supra* note 9.

If, however, the nuclear goods were consigned to a destination in a non-Contracting State, the liability of the *sending operator* would end when the goods have been “unloaded” from the means of carriage by which they have been transported into the territory of a non-Contracting State²³.

If the nuclear materials were sent from the territory of a non-Contracting State, the *operator-consignee* become liable only after the nuclear materials have been “loaded” on the means of transport by which they are to be carried from that territory. It is important for carriers to note, in this case, that the operator assumes liability only when he has given his prior written consent to the sending of the materials. If this condition is not satisfied, carriers could not gain benefit of immunity from liability under the nuclear conventions²⁴.

This technical coverage of nuclear conventions raises some issues in the field of transport. If an incident occurs after loading but before the nuclear materials being outside of the territory of a non-Contracting State, it seems that carriers could not assert that the law governing the accident is that provided by the conventions. There seems to be an inconsistency between the geographical scope of application (application to Contracting States) and the technical scope of application of the nuclear conventions (nuclear incident occurring in the territory of non-Contracting States).

Furthermore, the expressions “taken charge” and “loaded” are not defined in the conventions²⁵; thus, carriers could be involved in litigations where these expressions are in issue. Usually maritime carriers have the duty to load or unload cargo and to provide the proper equipment for such operations. Thus, they could be liable under national laws for damage caused by nuclear incidents occurring during loading or unloading of the nuclear material.

²³ **CSC, Annex, article 3 (1) (b) (iv)**. The explanatory text specifies that: “The Convention cannot impose liability upon persons not subject to the jurisdiction of the Contracting Parties. Consequently, if the nuclear material has been sent to a destination in a non-Contracting State, the sending operator is liable until the material has been unloaded from the means of transport by which it arrived in the territory of that State. Conversely, where the nuclear material has, with the written consent of the operator, been sent from a person within the territory of a non-Contracting State, liability is imposed upon the operator for whom the material is destined from the moment that it has been loaded on the means of transport by which it is to be carried from the territory of that non-Contracting State” IAEA, *supra* note 6 at 11 (see footnote 25). See also: **VC & revised Vienna**, art. II. 1 (b) (iv); **PC**, art. 4 (a) (iv).

²⁴ **CSC, Annex, article 3 (1) (c) (iv)**: “The operator of a nuclear installation shall be liable for nuclear damage upon proof that such damage has been caused by a nuclear incident (...). (c) involving nuclear material sent to that nuclear installation, and occurring (...) where the nuclear material has, with the written consent of the operator, been sent from a person within the territory of a non-Contracting State, only after it has been loaded on the means of transport by which it is to be carried from the territory of that State”. See also: **VC & revised Vienna**, article II. 1 (c) (iv); **PC**, article 4 (b) (iv).

²⁵ Neither the Exposé des Motifs of the Paris Convention or The 1997 Vienna Convention and The 1997 CSC Explanatory Texts explain why these two expressions are distinguished.

C. Is there potential conflict between nuclear and maritime conventions?

As has already been explained, the principle of channeled liability provides that no other person but the operator will be liable for nuclear damage caused by nuclear incidents, including those which occur during maritime carriage. However, *contrary to the CSC*, other nuclear conventions (*VC, revised Vienna and PC*) **provide that they don't interfere with existing transport conventions**. This raises a problem of simultaneous application of nuclear and maritime conventions.

Simultaneous application of the nuclear and maritime conventions:

VC, revised Vienna and PC (but **not CSC**) contain a provision providing that they:

« shall not affect the application of any international convention in the field of transport in force or open for signature, ratification or accession at the date on which this Convention is opened for signature »²⁶.

International agreements in the field of transport are understood to mean international agreements dealing with third party liability for damage involving means of transport and those dealing with bills of lading²⁷. Therefore, besides the principle of channel liability to the operator of nuclear installation, maritime carrier could still be liable under the maritime conventions. In other words, a person suffering damage caused by a nuclear incident occurring in the course of transport may have two rights of action:

- One against the operator under the nuclear regimes;
- One against the carrier liable under existing maritime regimes²⁸.

Resolution of the conflict between nuclear and maritime regimes

Possible solutions to avoid conflict between maritime and nuclear regimes are two-fold.

1. Solutions provided by nuclear conventions

○ Subrogation

In counterpart of the deviation from the principle of channeling liability to the operator, the nuclear conventions (*VC, revised Vienna and PC*) give rights of recourse for compensation paid under international agreement or under the laws of non-Contracting States²⁹. However, this raises the risk of an operator whose security fund is too low and carriers may have to get insurance.

²⁶ **VC and revised VC**, article II.5; **PC**, article 6 (b).

²⁷ See FN 23 IAEA, *supra* note 6 at 11.

²⁸ See FN 23 *ibid*.

²⁹ **VC & VC revised, article IX. 2 (a)**: “If a person who is a national of a Contracting Party, other than the operator, has paid compensation for nuclear damage under an international convention or under the law of a non-Contracting State, such person shall, up to the amount which he has paid, acquire by subrogation the rights under this Convention of the person so compensated. No rights shall be so acquired by any person to the extent that the operator has a right of recourse against such person under this Convention”.

○ **Carrier assumes operator's status**

Another solution available to the benefit of carriers is to be put in the place of the operator of a nuclear installation in order to enjoy the limits of liability of the operator. The PC, the VC and the revised Vienna (**but also CSC**) provide that:

« The Installation State may provide by legislation that, in accordance with such terms as may be specified therein, a carrier of nuclear material or a person handling radioactive waste may, at his request and with the consent of the operator concerned, be designated or recognized as operator in the place of that operator in respect of such nuclear material or radioactive waste respectively. In this case such carrier or such person shall be considered, for all the purposes of this Convention, as an operator of a nuclear installation situated within the territory of that State »³⁰

In this case, Contracting State (i.e., Canada) has to establish legislation under which maritime carrier may be deemed liable in the place of the operator. Maritime carriers have to make formal request to the competent public authority and to obtain the consent of the operator.

2. Solutions provided by Maritime Conventions:

Should a maritime carrier be exposed to unlimited liability under maritime regimes he could incur claims for compensation in excess of the limits of liability applicable to the operator of nuclear installation. It has been noted that: *“this situation has been the cause of practical difficulties in the field of insurance costs of the carriage by sea of nuclear material”³¹*. Consequently, in 1971 IMO, in association with AIEA and OECD elaborated a convention to regulate liability in respect of damage arising from the maritime carriage of nuclear goods: the *1971 Convention relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material*.

The central purpose of the 1971 Maritime Convention was to make the operator of nuclear installation exclusively liable³² and thus eliminates the financial exposure of maritime carriers and shipowners under maritime law³³.

PC article 6 (d): “Any person who has paid compensation in respect of damage caused by a nuclear incident under any international agreement referred to in paragraph (b) **[(b) refers to the principle of non affecting the application of international maritime conventions]** of this Article or under any legislation of a non-Contracting State shall, up to the amount which he has paid, acquire by subrogation the rights under this Convention of the person suffering damage whom he has so compensated”.

Parenthesis text added for clarity.

³⁰ **VC & revised Vienna** article II.2 ; **PC** article 4 (e). The same provision exists in the **CSC**, Annex, Article 3 (2).

³¹ See FN 23 IAEA, *supra* note 6 at 11.

³² The preamble provides that: “Considering that the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy and its Additional Protocol of 28 January 1964 (hereinafter referred to as “the Paris Convention”) and the Vienna Convention of 21 May 1963 on Civil Liability for Nuclear Damage (hereinafter referred to as “the Vienna Convention”) provide that, in the case of

This Convention supersedes any international conventions in the field of maritime transport to the extent that such conventions are in conflict with it³⁴. However, this will only apply to the Contracting States of this Maritime Convention (*note that Canada is not party to VC or PC, it is also not party to this maritime convention*).

Otherwise, some maritime conventions provide expressly the prevalence of nuclear regimes:

- Convention on Limitation of Liability for Maritime Claims, 1976, as amended by the Protocol of 1996 to amend the Convention on Limitation of Liability for Maritime Claims, 1976³⁵;
- Athens Convention relating to the Carriage of Passengers and their Luggage by Sea, 1974, as amended by the Protocol of 1990 to amend the Athens Convention relating to the Carriage of Passengers and their Luggage by Sea, 1974³⁶;

damage caused by a nuclear incident occurring in the course of maritime carriage of nuclear material covered by such Conventions, the operator of a nuclear installation is the person liable for such damage. Considering that similar provisions exist in the national law in force in certain States. Considering that the application of any preceding international Convention in the field of maritime transport is however maintained. Desirous of ensuring that the operator of a nuclear installation will be exclusively liable for damage caused by a nuclear incident occurring in the course of maritime carriage of nuclear material” UN Treaty Series, 1971 Convention relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material.

³³ Article 1: “Any person who by virtue of an international convention or national law applicable in the field of maritime transport might be held liable for damage caused by a nuclear incident shall be exonerated from such liability: (a) if the operator of a nuclear installation is liable for such damage under either the Paris or the Vienna Convention, or (b) if the operator of a nuclear installation is liable for such damage by virtue of a national law governing the liability for such damage, provided that such law is in all respects as favourable to persons who may suffer damage as either the Paris or the Vienna Convention”. *Ibid.*

³⁴ **Article 4 of the Convention relating to civil liability in the field of maritime carriage of nuclear material:** “The present Convention shall supersede any international Conventions in the field of maritime transport which, at the date on which the present Convention is opened for signature, are in force or open for signature, ratification or accession but only to the extent that such Conventions would be in conflict with it; however, nothing in this Article shall affect the obligations of the Contracting Parties to the present Convention to non-Contracting States arising under such international Conventions”.

³⁵ **Article 3:** “The rules of this Convention shall not apply to: (c) claims subject to any international convention or national legislation governing or prohibiting limitation of liability for nuclear damage; (d) claims against the shipowner of a nuclear ship for nuclear damage”. Schedule 1 of The Marine Liability Act.

³⁶ **Article 20:** “No liability shall arise under this Convention for damage caused by a nuclear incident: (a) if the operator of a nuclear installation is liable for such damage under either the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy as amended by its additional Protocol of 28 January 1964, or the Vienna Convention of 21 May 1963 on Civil Liability for Nuclear Damage, or; (b) if the operator of a nuclear installation is liable for such damage by virtue of a national law governing the liability for such damage, provided that such law is in all respects as favorable to persons who may suffer damage as either the Paris or the Vienna Conventions”. Schedule 2 of The Marine Liability Act.

- The Hague-Visby Rules³⁷;
- The Hamburg Rules³⁸ (not in force in Canada);
- The Rotterdam Rules³⁹ (not in force).

D. Limitation of recourse actions available

Another aspect of the nuclear conventions that may be relevant to maritime carriers is the recourse action available.

1) Recourse actions available to carrier against operators

a) *“Gross negligence” or “act or omission done with intent to cause damage”*

VC, revised Vienna and CSC⁴⁰ exonerate the operator from liability if he proves that the damage resulted wholly or partly from the *gross negligence* of the person suffering such damage, or from *an act or*

Article 20 is to be replaced by the following text: "No liability shall arise under this Convention for damage caused by a nuclear incident: **(a)** if the operator of a nuclear installation is liable for such damage under either the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy as amended by its Additional Protocol of 28 January 1964, or the Vienna Convention of 21 May 1963 on Civil Liability for Nuclear Damage, or any amendment or Protocol thereto which is in force; or **(b)** if the operator of a nuclear installation is liable for such damage by virtue of a national law governing the liability for such damage, provided that such law is in all respects as favourable to persons who may suffer damage as either the Paris or the Vienna Conventions or any amendment or Protocol thereto which is in force."

³⁷ Article 9: "These Rules shall not affect the provisions of any international Convention or national law governing liability for nuclear damage". Schedule 3 of The Marine Liability Act.

³⁸ Article 25. 3: "No liability shall arise under the provisions of this Convention for damage caused by a nuclear incident if the operator of a nuclear installation is liable for such damage: (a) under either the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy as amended by the Additional Protocol of 28 January 1964 or the Vienna Convention of 21 May 1963 on Civil Liability for Nuclear Damage, or (b) by virtue of national law governing the liability for such damage, provided that such law is in all respects as favorable to persons who may suffer damage as either the Paris or Vienna Conventions".

³⁹ Article 86: "No liability arises under this Convention for damage caused by a nuclear incident if the operator of a nuclear installation is liable for such damage: (a) Under the 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 Protocols of 16 November 1982 and 12 February 2004, the Vienna Convention on Civil Liability for Nuclear Damage of 21 May 1963 as amended by the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention of 21 September 1988 and as amended by the Protocol to Amend the 1963 Vienna Convention on Civil Liability for Nuclear Damage of 12 September 1997, or the Convention on Supplementary Compensation for Nuclear Damage of 12 September 1997, including any amendment to these conventions and any future convention in respect of the liability of the operator of a nuclear installation for damage caused by a nuclear incident; or (b) Under national law applicable to the liability for such damage, provided that such law is in all respects as favourable to persons that may suffer damage as either the Paris or Vienna Conventions or the Convention on Supplementary Compensation for Nuclear Damage".

omission of such person done with intent to cause damage. Thus, if this provision would include the gross negligence, or the act or omission of a carrier — whom may have been carrying the nuclear goods causing the incident — the carrier would lose its right of recourse against the operator.

b) Damage to the means of transport

Another particularity of the nuclear conventions is the liability of the operator for nuclear damage to the means of transport upon which the nuclear material involved was at the time of the nuclear incident.

Nuclear Conventions are based on different patterns⁴¹ that can be grouped into two categories (see table below):

- **Exclusion of the operator’s liability, as a matter of principal**, unless otherwise provided by national legislation: the 1963 VC and the CSC provide that the liability of the operator for nuclear damage to the means of transport is excluded. However, the operator would remain liable under the national law of a Contracting State. Indeed, both Conventions allow Installation State to provide by legislation that such damage is covered;

⁴⁰ **VC & revised Vienna** Article IV.2; **PC**, article 6 (e): “*If the operator proves that the nuclear damage resulted wholly or partly either from the gross negligence of the person suffering the damage or from an act or omission of such person done with intent to cause damage, the competent court may, if its law so provides, relieve the operator wholly or partly from his obligation to pay compensation in respect of the damage suffered by such person*”. Note also that: “under **Article I. 1 (a), VC & revised Vienna** “person” means: ‘any individual, partnership, any private or public body whether corporate or not, any international organization enjoying legal personality under the law of the Installation State, and any State or any of its constituent sub-divisions’. It is important to note that, for the purposes of legal ‘channelling’, it makes no difference that the operator will in some cases be a State (or a State entity) or an international organization; in fact, Article XIV provides that, except in respect of measures of execution, jurisdictional immunities under rules of national or international law may not be invoked in actions brought under the Convention before the courts competent pursuant to Article XI”, see IAEA, supra note 6 at 10.

CSC, Annex, Article 3.6: “**National law** may relieve an operator wholly or partly from the obligation to pay compensation for nuclear damage suffered by a person if the operator proves the nuclear damage resulted wholly or partly from the gross negligence of that person or an act or omission of that person done with the intent to cause damage”.

⁴¹ The Explanatory texts specify: “As for damage under (b), Article IV.6 of the 1963 Vienna Convention allows the Installation State to provide by legislation that such damage is covered, provided that the operator’s liability for other nuclear damage is not reduced to less than US \$5 million for any one nuclear incident, i.e. the minimum amount which can be established under Article V. In practice, if the damage other than that to the means of transport is less than this amount, the part of the amount not used is available, if necessary, for compensation of damage to the means of transport, but then only if the legislation of the Installation State so provides. However, the 1960 Paris Convention covers damage to the means of transport as a matter of principle, but specifies that compensation for such damage must not have the effect of reducing the operator’s liability in respect of other damage to an amount less than that established as the limit of his liability. In this respect also, the 1997 Protocol amends the Vienna Convention in order to bring it in line with the Paris Convention”, *ibid* at 42.

- **Coverage of such damage in principle:** The *PC* and the *Vienna revised* convention cover damage to the means of transport as a matter of principle.

In both cases (categories), nuclear conventions specify that the compensation for such damage shall not have the effect of reducing operator’s liability in respect of other damage to an amount less than that established as the limit of his liability, i.e., :

- Less than US \$ 5 million or 80 million euro (the 1963 VC and the PC)
- Less than either 150 million SDRs, or any higher amount established by the legislation of a Contracting Party (the revised Vienna and the CSC)

Exclusion		No exclusion	
<i>VC (1963)</i>	<i>CSC’s Annex</i>	<i>PC</i>	<i>Revised Vienna</i>
<p>Art IV. 5 (b) & art IV. 6: “5. The operator shall not be liable under this Convention for nuclear damage (...) (b) to the means of transport upon which the nuclear material involved was at the time of the nuclear incident.</p> <p>6. Any Installation State may provide by legislation that sub-paragraph (b) of paragraph 5 of this Article shall not apply, provided that in no case shall the liability of the operator in respect of nuclear damage, other than nuclear damage to the means of transport, be <u>reduced to less than US \$5 million for any one nuclear incident”.</u></p>	<p>Art 3.7 (c) “The operator shall not be liable for nuclear damage (...) unless otherwise provided by national law, to the means of transport upon which the nuclear material involved was at the time of the nuclear incident. If national law provides that the operator is liable for such damage, compensation for that damage shall not have the effect of reducing the liability of the operator in respect of other damage to <u>an amount less than either 150 million SDRs, or any higher amount established by the legislation of a Contracting Party”</u></p>	<p>Art. 7 (c): “Compensation for damage caused to the means of transport on which the nuclear substances involved were at the time of the nuclear incident shall not have the effect of reducing the liability of the operator in respect of other damage to <u>an amount less than 80 millions euro, or any higher amount established by the legislation of a Contracting Party”.</u></p>	<p>Art IV.6: “Compensation for damage caused to the means of transport upon which the nuclear material involved was at the time of the nuclear incident shall not have the effect of reducing the liability of the operator in respect of other damage to an amount <u>less than either 150 million SDRs, or any higher amount established by the legislation of a Contracting Party, or an amount established pursuant to sub-paragraph (c) of paragraph 1 of Article V”</u></p>

Note that the Canadian *Nuclear Liability Act* states at article 9 (2) that:

“Where a nuclear incident occurs in the course of the carriage of nuclear material or while the material is in storage incidental to its carriage, an

*operator is not liable for damage to the means of carriage or to the place where the material is stored*⁴².

2) Operator's right of recourse

The operator has limited rights of recourse for damage caused by nuclear incidents⁴³. This right is only granted in two cases:

- If a right of recourse is expressly provided for by a *contract in writing*;
- Where the incident resulted from an *act or omission done with intent to cause damage*, against the *individual* responsible.

In the latter case, the term “individual” refers to an individual physical person (not corporations) who acts or omits to act with intent to cause damage; there is no right of recourse against the employer of that person. Consequently, one can presume carriers, as corporate entities, would be immune from the operator's recourse action where their servants had caused the incident intentionally⁴⁴.

However, contrary to other conventions (i.e., VC, revised Vienna, PC) **the Annex to CSC does not directly grant the operator a right of recourse and merely allows “national law” to provide for such a right**⁴⁵.

IV. Conclusion

After analyzing the nuclear liability conventions insofar as it pertains to maritime carrier liability for the transportation of nuclear products, we can note that:

- There is a need to clarify the geographical and the technical scope of application of the nuclear conventions, as regard to:

⁴² See: < <http://laws-lois.justice.gc.ca/eng/acts/N-28/FullText.html>>.

⁴³ **VC & revised Vienna**, article X: “The operator shall have a right of recourse only: (a) if this is expressly provided for by a contract in writing; or (b) if the nuclear incident results from an act or omission done with intent to cause damage, against the individual who has acted or omitted to act with such intent”.
PC, Article 6(f): “ The operator shall have a right of recourse only: (i) if the damage caused by a nuclear incident results from an act or omission done with intent to cause damage, against the individual acting or omitting to act with such intent; (ii) if and to the extent that it is so provided expressly by contract”.
CSC, Annex, article 10: “**National law** may provide that the operator shall have a right of recourse only: (a) if this is expressly provided for by a contract in writing; or (b) if the nuclear incident results from an act or omission done with intent to cause damage, against the individual who has acted or omitted to act with such intent”.

⁴⁴ It was explained that: “In this latter case, the right of recourse is limited to a right against the individual physical person who acts or omits to act with intent to cause damage; there is no right of recourse against the employer of that person. Even if the employer is the operator himself, imputation to him of acts or omissions of individuals done with intent to cause damage would run counter to the purpose of the Convention; in fact, under the Convention, operators of nuclear installations can never be held liable beyond the amount laid down in accordance with Article V, even if the damage was caused by them with intent to cause damage”, IAEA, *supra* note 6 at 12.

⁴⁵ See FN 286 *ibid* at 84.

- the distinction between the expressions “loaded” and “taken charge”;
- the scope of liability of the operator in the field of transport of nuclear products to or from installation situated in non-Contracting States, particularly, when the nuclear incident occurs in the territory of a non-Contracting State;
- Some provisions in the nuclear regimes intend to avoid potential conflict with maritime regimes by providing carrier a subrogation right against the operator, or a possibility to assume the status of an operator. However, the latter possibility should be allowed by Canadian legislation;
- Even if Canada is not party to the 1971 Convention relating to civil liability in the field of maritime carriage of nuclear materials, which eliminates the financial exposure of maritime carriers and shipowners, some maritime conventions relating to carrier liability provide that nuclear regimes prevail. Thereby, they maintain the legal channeling principle.
- CSC excludes the operator’s liability for damage to the means of transport unless otherwise provided by national law. Thus, Canadian legislation should provide that such damage is covered by nuclear liability regime.

Useful links

VC, revised VC and CSC:

- The 1997 Vienna Convention on civil liability for Nuclear Damage and the 1997 Convention on Supplementary Compensation for Nuclear Damage. Explanatory texts, (2003) 3 IAEA Int. Law Series, online: http://www-pub.iaea.org/MTCD/publications/PDF/Pub1279_web.pdf

The Paris Convention:

- Convention on Third Party Liability in the Field of Nuclear Energy of 29th July 1960, as amended by the Additional Protocol of 28th January 1964 and by the Protocol of 16th November 1982, and by the Protocol of 12 February 2004 (Unofficial consolidated texts): <https://www.oecd-nea.org/law/Unofficial%20consolidated%20Paris%20Convention.pdf>
- Convention on Third Party Liability in the Field of Nuclear Energy of 29th July 1960, as amended by the Additional Protocol of 28th January 1964 and by the Protocol of 16th November 1982: https://www.oecd-nea.org/law/nlparis_conv.html
- 2004 Protocol to amend the Paris Convention on Nuclear Third Party Liability: https://www.oecd-nea.org/law/paris_convention.pdf
- Exposé des Motifs [Revised text of the Exposé des Motifs of the Paris Convention, approved by the OECD Council on 16th November 1982.]: https://www.oecd-nea.org/law/nlparis_motif.html

The 1971 Maritime Carriage of Nuclear Material Convention:

- <https://treaties.un.org/doc/Publication/UNTS/Volume%20974/volume-974-I-14120-English.pdf>

Nuclear law bulletin: <https://www.oecd-nea.org/law/nlb/index.html>