

The Vienna convention on civil liability for nuclear damage: past, evolution and perspectives

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Abstract

The article remains the 55th anniversary of the adoption of the Vienna Convention on Civil Liability for Nuclear Damage in 1963. As an instrument of international law adopted to tackle the issues of liability and compensation of damages arising from incidents in nuclear installations, the Vienna Convention currently provides for liability framework in 40 Contracting Parties (Installation States) worldwide, establishing – inter alia – a liability framework covering most States of the former Eastern bloc. The purpose of the work is to analyse developments of the Vienna Convention, especially its gradual acceptance among the international community of States in the last decades. Further, the article points out further developments in the field of nuclear liability, in particular the adoption of the Joint Protocol, which established a virtual bridge with another liability regime, provided in the States of Western Europe by the Paris Convention. Also, the article deals with the Protocol of 1997, adopted in order to strengthen the liability framework established by the Vienna Convention. Facing the developments of the last 55 years, the Vienna Convention is to be considered as a successful international treaty. It was able to attract the executives of several Central and Eastern European States, many of which represent major nuclear countries of the region. Further, the specific principles, established by the Vienna Convention, have been accepted as pillars of the legal framework of the peaceful uses of nuclear energy. At last, but not at least, the Vienna Convention represents an instrument, being able to connect this region in the future with other regions, intending for future development of nuclear industry.

Keywords: international nuclear law, nuclear liability, nuclear insurance, nuclear damages, exclusive liability, jurisdiction, nuclear installations.

JEL Classification: K23, K32

1. Introduction

55 years ago, on 21 May 1963, the Vienna Convention on Civil Liability for Nuclear Damage (hereinafter “the Vienna Convention” or “the Convention”)³ was adopted by the States⁴ participating at the International Conference on Civil Liability

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³ The Vienna Convention on Civil Liability for Nuclear Damage (adopted 21 May 1963, entered into force 12 November 1977), INFCIRC/500.

⁴ Argentina, Belarussian Soviet Socialistic Republic, Chile, Colombia, Cuba, Egypt, the Socialist Federal Republic of Yugoslavia, the State of Israel, Lebanon, Morocco, Philippines, Spain, USSR and the United Kingdom.

for Nuclear Damage⁵ under the auspices of the International Atomic Energy Agency (thereinafter “the IAEA”) in order to address the risks arising from peaceful uses of nuclear energy.⁶ Its goal was to establish a nuclear liability framework applicable worldwide.⁷ The Vienna Convention was opened for signature for the States represented at the International Conference and it had to enter into force three months after the date of deposit of the fifth instrument of ratification to the Director General of the IAEA.⁸ Consequently, it entered into force on 12 November 1977, after being ratified by Argentina, Cuba, Egypt, the Socialist Federal Republic of Yugoslavia and Philippines.⁹ In the following decades, a number of other (both nuclear¹⁰ and non-nuclear) States either ratified (Chile, Lebanon), or acceded (Bolivia, Brazil, Cameroon, Jordan, Mauritius, Mexico, Niger, Nigeria, Peru, Saudi Arabia, Saint Vincent and Grenadines, Senegal, Trinidad and Tobago, Uruguay).¹¹

While the Union of Soviet Socialist Republics (together with the Belarussian Soviet Socialist Republic) participated at the International Conference on Civil Liability for Nuclear Damage, it strictly opposed the principles provided by the newly established liability regime (in particular the principle of channelling of liability to the operator, rather to the State). Consequently, neither of the States of the former Eastern bloc (with the salient exception of the above-mentioned Yugoslavia¹²) acceded to this convention until the early 1990s. They did so only after

⁵ 29 April – 19 May 1963.

⁶ K. Wolff, *The Vienna International Convention on Civil Liability for Nuclear Damage*, [in] *Nuclear liability, progress in nuclear energy*, ed. James Weinstein, Pergamon Press, Oxford, 1966, pp. 1-22.

⁷ In 1960, the Convention on Third Party Liability in the Field of Nuclear Energy (thereinafter “the Paris Convention”) was adopted under the auspices of the European Nuclear Energy Agency (ENEA) to establish a regional liability framework in the Western Europe. Consequently, it was later ratified by Belgium, Denmark, Finland, France, Federal Republic of Germany, Greece, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Turkey and the United Kingdom. It entered into force in 1968. Further, in 1962, the Convention on the Liability of Operators of Nuclear Ships was adopted under the auspices of the International Maritime Organisation (IMO) in order to tackle the liability issues arising from the operation of nuclear propelled maritime vessels. However, this Convention has never been ratified by the required number of the States and consequently, did never entered into force.

⁸ Vienna Convention, Article XXIII.

⁹ At that time, only Argentina was operating a nuclear installation in its territory. However, both Egypt, Cuba, Philippines and Yugoslavia had some nuclear ambitions, which were successful only in the latter case.

¹⁰ I.e. States operating nuclear installations covered by the liability regime as established by the Vienna Convention in their territories.

¹¹ While participating at the International Conference on Civil Liability for Nuclear Damage, the State of Israel has never ratified the Vienna Convention and remains to be out of the nuclear liability framework established. Also, Spain and the United Kingdom did originally participate in the International Conference. However, they did ratify the Paris Convention afterwards. Due to the fact, a parallel participation in both the Vienna and Paris Conventions has been regarded as impossible, they have never ratified the Vienna Convention. See M. Lagorce, *Étude comparative des conventions O.C.D.E. et A.I.E.A. sur la responsabilité civile dans le domaine de l'énergie*, “Aspects de droit de l'énergie atomique”, 1/1965, pp. 93-102.

¹² The Socialist Federal Republic of Yugoslavia had signed and ratified the Vienna Convention on 21 May 1963 and 12 August 1977, respectively. Bosnia and Herzegovina, Croatia, Montenegro, Serbia and the Republic of Macedonia succeeded to be Contracting Parties to the Convention. Slovenia did originally also succeed, but had afterwards terminated the Vienna Convention and acceded to the

the collapse of the USSR: Hungary in 1989, Poland in 1990, Lithuania and Romania in 1992, Armenia in 1993, Bulgaria, Czech Republic and Estonia in 1994, Latvia and Slovak Republic in 1995, Ukraine in 1996 and the Republic of Moldova in 1998. Finally, the successors of the two original participants at the International Conference, Belarus and the Russian Federation, ratified the Vienna Convention in 1997 and 2005.

As a consequence, the Vienna Convention represents an instrument establishing a vigorous and coherent nuclear liability framework in the States of Central and Eastern Europe (the Convention uses the term “Installation State” for its Contracting Parties¹³).

The anniversary of the Convention gives a good opportunity to revisit its special liability framework and to deal with the perspectives of the future development in this field.

2. The Vienna Convention on Civil Liability for Nuclear Damage: principles of the liability regime

The problems of liability for damages caused by incidents caused by nuclear installations have called for a special legal framework in most States where nuclear energy started to be used for civil purposes in the 1950s.¹⁴ In most legal systems, specific rules had been already adopted to regulate liability for damages caused by dangerous activities in general. In theory, these rules could have applied to nuclear industry also. On the other hand, under the ordinary tort law, several persons might have been liable for damage caused by nuclear incident, while the victims might face difficulty in establishing which of them (constructor, operator etc.) was, in fact, liable. In addition, the person liable would have had unlimited liability without being able to obtain a complete insurance cover. In view of the fact, that nuclear activities were generally seemed more hazardous than conventional dangerous activities (such as chemical industry, railways, air transport, international oil transport etc.) executives of several States felt, that liability in the field of peaceful uses of nuclear energy should be subject to a special legal framework.¹⁵ Consequently, first national legal acts in this field were adopted already during the 1950s.¹⁶

Paris Convention. Pursuant to Article XXV.2, the Convention ceased to apply to Slovenia as of 12 November 2002.

¹³ This means any „Contracting Party within whose territory a nuclear installation is situated or, if it is not situated within the territory of any State, the Contracting Party by which or under the authority of which the nuclear installation is operated“ (Vienna Convention, Article I.1.d)

¹⁴ On 27 June 1954, the world's first grid-connected nuclear power plant to generate electricity (albeit at small scale) commenced operations at the Institute of Physics and Power Engineering in Soviet Obninsk. The world's first full scale power plant, Calder Hall in the Great Britain, commenced its operation on 17 October 1956.

¹⁵ IAEA, *The 1997 Vienna Convention on Civil Liability for Nuclear Damage and the 1997 Convention on Supplementary Compensation – Explanatory Texts*. IAEA International Law Series, Vol. 3., Vienna 2017, pp. 20-22.

¹⁶ “Gesetz über friedlichen Verwendung der Kernenergie und den Schutz gegen ihre Gefahren (Atomgesetz)” in the Federal Republic of Germany (1959), “Nuclear Installations Licensing and Insurance Act” in the United Kingdom (1959) and “Bundesgesetz über die friedliche Verwendung der Atomenergie und den Strahlenschutz” in Switzerland (1959).

Taking these developments into regard, the Vienna Convention provided for some basic liability principles¹⁷, which differ considerably from the principles of the ordinary tort law:

Each nuclear installation must have a person in charge: the operator. In the legal framework of the Convention, the operator¹⁸ is “the person designated¹⁹ or recognised²⁰ as the operator of a nuclear installation by the state.”²¹ The operator of a nuclear installation is exclusively liable for nuclear damage. The Convention provides, that the operator has a right of recourse only if this is expressly provided for by a contract in writing, or – in the case a 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.²² No other person than the operator²³ may be held liable, and the operator cannot be held liable under other legal provisions.

In relation to this, the Convention provides for very limited liability relief. The operator will be exonerated from liability only if he proves, that the nuclear incident was directly due to armed conflict, hostilities, civil war, insurrection or a grave natural disaster²⁴, or that it resulted wholly or partly either from gross negligence of the victim or from an act or omission of the victim with intent to cause harm.²⁵ Further, strict preconditions concerning a potential liability relief are provided.²⁶

In general, loss of life, any personal injury or any loss of, or damage to, property which arises out of or results from the “radioactive properties or a combination of radioactive properties with toxic, explosive or other hazardous properties of nuclear fuel or radioactive products or waste in, or of nuclear material coming from, originating in, or sent to, a nuclear installation” are to be covered by the liability framework, created by the Convention.²⁷ In this respect, the Convention contains a renvoi to national legislation: An Installation State may provide in its legislation, that the operator is liable also for other “loss or damage so arising or

¹⁷ J. M. Favini, *Application de la convention de Vienne et mise en pratique au niveau mondial des principes de la responsabilité civile en matière nucléaire*, [in] *Nuclear Third Party Liability and Insurance. Status and Prospects*, ed. OECD, OECD, Paris 1985, pp. 52-66.

¹⁸ Vienna Convention, Article I.1.c.

¹⁹ In this respect, the liability regime established by the Vienna Convention is being interconnected with the national public law, regulating nuclear safety, in particular with the permit issued by the competent authority in order to operate the installation.

²⁰ Consequently, the liability regime established by the Vienna Convention would be applicable even to those nuclear installations, being operated illegal on the territory of the Installation State.

²¹ In this respect, it is important to note, that also the Installation State, or its constituent sub-division, can be also considered as operator under the Vienna Convention (see Vienna Convention, Article VII.2).

²² Vienna Convention, Article X.

²³ This is in particular the issue of the constructor, the subject delivering the nuclear technologies or nuclear fuel. Although being participating in the nuclear industry, these persons do not bear any liability in the framework of the Convention.

²⁴ Vienna Convention, Article IV.3.

²⁵ Vienna Convention, Article IV.2.

²⁶ Pursuant to the Article X, the operator shall have a right of recourse only if this is expressly provided for by a contract in writing; or 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.

²⁷ Vienna Convention, Article I.1.k.

resulting“ and for „loss of life, any personal injury or any loss of, or damage to, property which arises out of or results from other ionizing radiation emitted by any other source of radiation inside a nuclear installation.“

As a *quid pro quo* for the very strict conditions of the operator's liability, the Installation State may limit the operator's liability by the corresponding national legislation. However, the Vienna Convention provides for a minimum possible liability limit: it provides, that the liability of the operator may be limited by the Installation State to not less than US \$ 5 million for any one nuclear incident. The US \$ referred to in this Convention is a unit of account equivalent to the value of the United States dollar in terms of gold on 29 April 1963, that is to say US \$ 35 per one troy ounce of fine gold.²⁸ Consequently, the Vienna Convention provides for a “floating” limit of operator's liability, when fixing the minimal limit to the price of one troy ounce of fine gold. This constitutes a particular challenge for national legislation, which has to avoid providing for a minimal limit that may become too low due to the diversions of the price of gold.²⁹ This problem has been addressed by the Protocol of 1997 (see below), which provides for a liability limit in the “Special Drawing Rights” of the International Monetary Fund.

Consequently, limitation of operator's liability is to be considered as *right* of the Installation State, which is guaranteed under the international law.³⁰ It is a matter of fact that, from the very early beginning, the Contracting Parties to the Vienna Convention have been allowed to introduce an unlimited liability. The provisions of the Convention do not contain any obligatory maximum limit of liability. Therefore, limitation of operator's liability is a right of an Installation State, rather than an obligation. However, neither Installation State has actively opted for this possibility so far in the national legislation.³¹

Further, the Convention requires the operator to maintain mandatory insurance or to provide other financial securities covering its liability for nuclear damage in such amounts, of such types and in such terms, as the Installation State specifies. This *renvoi* to national legislation makes the amounts to be insured by the operator depended on the Installation State, rather than on a binding provision of the Convention. However, the Convention requires the Installation State to “ensure the payment of any claims which have been established against the operator by providing the necessary funds to the extent that the yield of insurance or other financial security is inadequate to satisfy such claims, but not in excess of the limit, if any, established in national legislation.”³² However, the Installation State itself, or any of its constituent sub-divisions, such as States or Republics, are not required

²⁸ Vienna Convention, Article V.1 and 3.

²⁹ S. Kissich, *Internationales Atomhaftungsrecht: Anwendungsbereich und Haftungsprinzipien*, Nomos Verlag, Baden Baden 2004, pp. 120-122.

³⁰ K. Hannak, *Das Wiener Übereinkommen über die Haftung auf dem Gebiet von nuklearen Schäden*, “Archiv für die civilistische Praxis”, 4/1980, pp. 417-418.

³¹ Consequently, if not limited in the national legislation of the Contracting Party, the liability of the operator under the Vienna Convention remains unlimited. This is currently the case of the Russian Federation.

³² Vienna Convention, Article VII.1.

to maintain any insurance or other financial security to cover their liability as operators under the Convention.³³

Finally, the operator's liability is also limited in time. In view of the fact that physical injury from radioactive contamination may not manifest itself for some time after the nuclear incident, the adoption of too short a period of limitation would clearly be inequitable. Consequently, the Vienna Convention provides³⁴, that rights of compensation are extinguished if an action is not brought within ten years from the date of the nuclear incident.

At the same time, the Convention provides that courts of the Installation State where the nuclear incident occurred will have exclusive jurisdiction over all actions brought for damages caused by a nuclear incident occurring in their territory.³⁵ In a case where nuclear material in transport causes damage within the territory of an Installation State, the court where the nuclear material was situated at the time of damage will be exclusively competent.

Further, alongside with the Vienna Convention, the International Conference on Civil Liability for Nuclear Damage also adopted an Optional Protocol Concerning a Compulsory Settlement of Disputes to the Vienna Convention.³⁶ The Optional Protocol provides for the compulsory resolution of disputes arising out of the interpretation or application of the Vienna Convention by the International Court of Justice or, if the parties to the dispute agree, by arbitration or conciliation. Currently, only there are only two Contracting Parties to this Protocol.³⁷

3. “Nuclear installation” and “nuclear incident”: basic terms of the liability framework

In practice, the application of the liability framework established by the Vienna Convention will be triggered if a nuclear installation causes a nuclear incident. Consequently, the terms “*nuclear installation*” and “*nuclear incident*” form the core of the liability framework.

The Vienna Convention defines the term “nuclear installation”³⁸ as “any nuclear reactor other than one with which a means of sea or air transport is equipped for use as a source of power, whether for propulsion thereof or for any other purpose; any factory using nuclear fuel for the production of nuclear material, or any factory for the processing of nuclear material, including any factory for the re-

³³ Vienna Convention, Article VII.2.

³⁴ Vienna Convention, Article VI.1. Under Article VI.2, where nuclear damage is caused by a nuclear incident involving nuclear material which at the time of the nuclear incident was stolen, lost, jettisoned or abandoned, the ten-year period of extinction is to be computed from the date of that incident, but it shall in no case exceed a period of 20 years from the date of the theft, loss, jettison or abandonment.

³⁵ Vienna Convention, Article XI.1.

³⁶ Optional Protocol Concerning a Compulsory Settlement of Disputes to the Vienna Convention (adopted 21 May 1963, entered into force 13 April 1999), INFCIRC/500/add.3.

³⁷ Philippines and Uruguay.

³⁸ Vienna Convention, Article I.1.j.

processing of irradiated nuclear fuel; and any facility where nuclear material is stored, other than storage incidental to the carriage of such material.” Further, a “nuclear incident” means³⁹ “any occurrence or succession of occurrences having the same origin which causes damage.” However, the liability framework of the Vienna Convention is applicable only to those damages, which “arises out of or results from the radioactive properties or a combination of radioactive properties with toxic, explosive or other hazardous properties of nuclear fuel or radioactive products or waste in, or of nuclear material coming from, originating in, or sent to, a nuclear installation”⁴⁰

It is a matter of fact, that the wording of the Convention quite naturally reflects technological reality of the early 1960s.⁴¹ In this concern, any nuclear reactor other than one with which a means of sea or air transport is equipped for use as a source of power⁴² is to be considered as “nuclear installation” and therefore falls under the scope of the Vienna Convention. Consequently, both nuclear reactors used for the purposes of electricity production (in nuclear power plants) and reactors used for experimental, scientific or educational purposes (in research centres, universities etc.) are to be covered by the Convention. The Vienna Convention is silent with regard to the nuclear reactors, being in the phase of decommissioning. This issue has been faced by the Installation States only very recently. Scientific literature tends to interpret the applicable provisions in the way, that a facility remains to be covered by the liability *régime* of the Convention until the final removal of any nuclear materials.

Further, any “facility where nuclear material⁴³ is stored, other than storage incidental to the carriage of such material”, do fall under the scope of the Vienna Convention. Where nuclear materials are stored only as an incidental part of their carriage - for example, on a railway station platform - the facilities used for such storage will normally not be deemed to come within the definition of nuclear installation because of the transitory and fortuitous nature of the storage. The Vienna

³⁹ Vienna Convention, Article I.1.i.

⁴⁰ Consequently, the liability framework created by the Vienna Convention will be not applicable to the damages, arising from a traffic accident that occurred at the site of a nuclear power plant. Neither will it be applicable to the damages, arising from a work accident occurred in the course of maintaining works at the site. Similarly, damages arising from a fire in one of the administrative building at the site are not to be considered as “nuclear damages” pursuant to the Vienna Convention. However, if such a fire “arises out of or results from the radioactive properties”, damages occurred are to be considered as “nuclear” in the sense of the Convention.

⁴¹ This is why the Article 1 deals with “means of air transport, equipped with a nuclear reactor for use as a source of power”, a technology very much discussed in the beginning of the 1960s.

⁴² Consequently, nuclear propelled ships do not fall under the scope of the Convention. Currently, this concern in particular nuclear propelled icebreakers, which are not covered by the liability regime established. The issue of nuclear propulsion in the maritime transport was intended to be governed by a special international treaty, the Convention on the Liability of Operators of Nuclear Ships, which, however, did never entered into force.

⁴³ "Nuclear material" means “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 radioactive products or waste (Vienna Convention, Article I.1.h).

Convention is silent regarding what “storage” means, causing discussions on the scope of application of the Convention. Facilities serving for temporary storage of nuclear materials are certainly covered by the liability framework. However, the Convention does not address directly those facilities (repositories), serving for final disposal of nuclear materials, in particular for final disposal of radioactive waste. Consequently, this gap must be addressed by national legislation of the Installation State.

Not all facilities interconnected directly, or indirectly with nuclear sector, do fall under the Vienna Convention. Some facilities, as for example those used for mining, milling and the physical concentration of uranium ores, do not involve high levels of radioactivity. Hence, these activities do not fall within the scope of the Convention. Further, installations where small amounts of fissionable materials are to be found, such as research laboratories, are likewise outside the Convention. Similarly, 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.⁴⁴ At last but not at least, the Convention provides⁴⁵ for the right of an Installation State to exclude small quantities of nuclear material from the scope of application. Maximum limits for the exclusion of such quantities are to be established by the Board of Governors of the International Atomic Energy Agency.⁴⁶

At last, but not at least, the liability framework established by the Vienna Convention does not cover installations operated for defense (military) purposes. It is a matter of fact, that the Vienna Convention did not address the issue of military technologies explicitly. However, the reference to “peaceful uses of nuclear energy” in the Preamble has been interpreted as excluding any military technologies and installations from the scope of this Convention.⁴⁷ To avoid any need of further re-interpretation, the issue of applicability to the military nuclear technologies and installations has been addressed explicitly in the Protocol of 1997 (see below), by excluding the non-peaceful uses from the scope of application explicitly.

⁴⁴ Finally, where materials, such as uranium salts, are used incidentally in various industrial activities not related to the nuclear industry, such usage does not bring the plant concerned within the scope of the Convention.

⁴⁵ Vienna Convention, Article I.2.

⁴⁶ On 11 September 2007, the Board of Governors took the recommended action and adopted a resolution on the establishment of maximum limits for the exclusion of small quantities of nuclear material from the application of the Vienna Conventions on nuclear liability (See GOV/OR.1193, paragraphs 93 and 94).

⁴⁷ The only international convention regulating the issues of nuclear liability, which explicitly included military technologies under the scope of its application, was the Convention on the Liability of Operators of Nuclear Ships. This Convention explicitly covered also warships, that were defined as “any ship belonging to the naval forces of a State and bearing the external marks distinguishing warships of its nationality, under the command of an officer duly commissioned by the Government of such State and whose name appears in the Navy List, and manned by a crew who are under regular naval discipline.” However, in particular due to the intention to cover also these military technologies, the Convention on the Liability of Operators of Nuclear Ships has never been ratified by the required number of the States.

4. Incorporation of the liability framework into the national legislation

The Vienna Convention contains a number of uniform rules to be applied by all Contracting Parties. The Convention is, *per se*, only binding on the Contracting Parties (Installation States). Consequently, it cannot prevent the law of a non-Contracting State from providing otherwise.⁴⁸ In so far as its provisions are self-executing, each Contracting Party can choose between the incorporation of the Convention in the domestic legal system, thus allowing for its direct application, and the adoption of national legislation specifically implementing the Convention. One has to bear in mind, that the Vienna Convention does not provide for a complete harmonization; rather, as is stated in its Preamble, it establishes “some minimum standards to provide financial protection against damage resulting from certain peaceful uses of nuclear energy”. Some degree of discretion is thus left to national legislation.

It is a matter of fact, that in the legislation of several Contracting Parties, the issues of nuclear liability have been regulated by a special part of an act, which basically contains provisions of public (administrative) law. However, due to special nature of the nuclear liability, its placement into those acts has rather *artificial effect*, without direct link to the remaining administrative provisions. This situation implicates additional problems. E.g. the Convention on Nuclear Safety of 1994 contains a rather different definition of the term “*nuclear installation*”, as compared to the definition of the same term in the Vienna Convention. Naturally, a need to reflect two rather different definitions of the same term in one act causes further inconsistencies in the legal framework.⁴⁹

From systematic point of view, it would be more appropriate to include the regulation of nuclear liability to acts regulating tort law and/or insurance law, whereas the option is either creation of separate liability provisions within the existing Civil Code or adoption of a separate act, dealing exclusively with the nuclear liability. Separate acts, governing the issues of nuclear liability, have been recently issued in several Contracting Parties to the Vienna Convention.⁵⁰ Such approach can be chosen by the legislation also by implementing the requirements of the Protocol of 1997 into the national legislation.

5. The Joint Convention: a bridge between the Vienna and the Paris Conventions

The 1986 accident at Chernobyl provided a major impetus for broadening the geographical scope of application of the international nuclear liability regime. At the time of the accident, the Paris Convention was primarily adhered to by the States

⁴⁸ This is recently the case of Austria which provided for a legislation, which is to large extent incompatible with the liability principles established by the Vienna Convention.

⁴⁹ J. Handrlica, M. Novotná, *The Vienna Convention on Civil Liability for Nuclear Damage Revisited*, “The Lawyer Quarterly”, 4/2013, pp. 296-310.

⁵⁰ E.g. in Ukraine, Romania, Slovak Republic and in the Czech Republic.

of Western Europe⁵¹ while the Vienna Convention was primarily adhered to by the States of Latin America, Africa and Asia.⁵² In spite of the similarity between the Paris and Vienna Conventions, their existence did not provide a single liability framework for all States which are Contracting Parties to either convention. The two conventions operated in isolation from each other, so that each convention benefited only victims within the territory of its own contracting parties.⁵³

The Joint Protocol relating to the Application of the Vienna Convention and Paris Convention (hereinafter “the Joint Protocol”)⁵⁴ was adopted at a Diplomatic Conference held in Vienna on 21 September 1988. The provisions of the Joint Protocol created a “bridge”⁵⁵ between the two conventions. Since its entry into force on 27 April 1992, States party to either the Paris Convention or the Vienna Convention as well as to the Joint Protocol receive the benefits of both conventions. Thus, where a nuclear incident occurs for which an operator in a Paris Convention/Joint Protocol state is liable and damage is suffered by victims in a Vienna Convention/Joint Protocol state, those victims will be able to claim compensation for their damage against the liable operator in essentially the same manner and to the same extent as if they were victims in a Paris Convention State; the reverse is equally true [17, pp. 66-76].

Further, the Joint Protocol ensures that only one of the two conventions will apply to any particular nuclear incident and both the liable operator and the amount of its liability are determined by the convention to which the state, in whose territory the liable operator's installation is situated is a party.⁵⁶ The Joint Protocol applies not only to the original Paris and Vienna conventions but also to any amendments to either convention which are in force for a contracting party to the Joint Protocol [11, pp. 16-17].

Adoption of the Joint Protocol represents one of the major milestones in the post-Chernobyl development of international law, governing the peaceful uses of nuclear energy. However, its impacts are diminished by the fact, that only some of the Contracting Parties to either the Paris⁵⁷ and Vienna⁵⁸ Convention did adhere to

⁵¹ Belgium, Denmark, Finland, France, Federal Republic of Germany, Greece, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Turkey and the United Kingdom.

⁵² The Socialist Federal Republic of Yugoslavia was the only Contracting Party to the Vienna Convention at the time of the accident, which was situated in Europe.

⁵³ At the same time, a parallel participation in both these conventions has been considered as legally impossible, as under such situation, an operator would be obliged to comply with two different amounts of financial resources to cover his liability and to comply with both conventions.

⁵⁴ The Joint Protocol relating to the Application of the Vienna Convention and Paris Convention (adopted 21 September 1988, entered into force 27 April 1992), INFCIRC/402.

⁵⁵ O. Busekist, *Haftungsprobleme im Verhältnis zwischen Vertragsstaaten des Pariser und des Wiener Atomhaftungsübereinkommens*, [in] *Friedliche Kernenergienutzung und Staatsgrenzen in Mitteleuropa*, ed. Norbert Pelzer, Nomos Verlag, Baden Baden 1987, pp. 271-288.

⁵⁶ Joint Protocol, Article III.

⁵⁷ Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Italy, Sweden, Turkey.

⁵⁸ Argentina, Bulgaria, Cameroon, Chile, Croatia, Czech Republic, Chile, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Saint Vincent and Grenadines, Slovakia, Ukraine, United Arab Emirates and Uruguay.

this instrument. Some of the States operating nuclear installations in their territory (e.g. Belgium, Spain and the United Kingdom) do still remain outside the framework established by the Joint Protocol.

6. The Protocol of 1997 to amend the Vienna Convention: a tool to strengthen the liability framework

As for the adequacy of the liability framework, the need to revise the Vienna Convention became obvious after the Chernobyl accident. Discussions centred especially on the amount of the operator's liability and on the desirability of ensuring additional compensation for damage exceeding that amount out of national and international public funds. Further, need to extend the operator's liability in time, in order to match the peculiarities of radiation effects, which may become manifest after many years also became subject of discussions.

In principle, two major views emerged among the Member States of the IAEA in the early 1990s. One view was that the liability framework, as established by the Vienna Convention, was sufficient and efforts should be directed towards the revision of the existing provisions. The other view, however, was that, since the Convention only dealt with the liability of individuals or juridical persons under civil law (i.e. the liability of the operator), there was a need to reconsider the broader question of international liability in relations between the States.⁵⁹ Consequently, a Standing Committee was established in order to tackle these issues. Between 1990 and 1997, the Standing Committee held 17 sessions, which culminated in proposing of a draft of a Protocol to Amend the Vienna Convention. This Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage (hereinafter "the Protocol of 1997")⁶⁰ was later adopted on 12 September 1997 by a Diplomatic Conference held in Vienna. The instrument was opened for signature by all States, irrespective of whether or not they were Contracting Parties to the Vienna Convention⁶¹, on 29 September 1997 and remained so open until their respective entry into force. The Protocol of 1997 entered into force on 4 October 2003, i.e. three months after the deposit of the fifth instrument of ratification.⁶²

It should be stressed that the Protocol of 1997 did not affected the basic liability principles of the Vienna Convention, as outlined above.⁶³ It merely creates

⁵⁹ And consequently, to elaborate a new multilateral instrument, establishing for legal framework of the international liability in order to allow for international claims against States. However, this issue soon met with serious difficulties and the work concentrated on the first option, i.e. to establish an Amendment of the existing international treaty.

⁶⁰ The Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage (adopted 12 September 1997, entered into force 4 October 2003), INFCIRC/566.

⁶¹ A State which is a Party to the Protocol but not a Party to the Vienna Convention shall be bound by the provisions of that Convention as amended by the Protocol in relation to other Contracting Parties to the Protocol.

⁶² Protocol of 1997, Article 21.1.

⁶³ In particular operator's exclusive liability, limitation of operator's liability, congruence of operator's liability with insurance, or other financial security, exclusive competence of the court.

a new, amended liability framework in those States, which ratified this instrument.⁶⁴ Since then, the Amended Vienna Convention exists together with the (original) Vienna Convention, being in force in the most of the Central and Eastern European States.⁶⁵

Basically, the provisions of the Protocol of 1997 may be divided into three main groups.⁶⁶ Some of the new and revised provisions deal with the matter of substance. These will be analysed below in a more detail. Other revised provisions deal with the issues of procedural nature. The third group contains no new issues, either substantive or procedural, and essentially serves to refine the existing provisions of the Convention.

The Protocol of 1997 does not amend the definition of “nuclear installation” directly. However, it contains⁶⁷ a new competence of the Board of Governors of the IAEA, which shall from time to time determine maximum limits of exclusion of small quantities of nuclear materials, which are to be excluded from the scope of application of the Amended Vienna Convention. In this way, the liability cover of final repositories of spent nuclear fuel and installations in the stage of decommissioning may be addressed by the Amended Vienna Convention in the future. Also, the Protocol expressly provides, that the Amended Vienna Convention is applicable on nuclear installations used for peaceful purposes.⁶⁸

Perhaps the most important amendment of the Vienna Convention affected by the Protocol is severe increase of minimal liability limits.⁶⁹ This can be explained by the fact, one of the main motives for amending the Vienna Convention was the consideration, that the minimal liability limit laid down in 1963 had become unrealistic in the meantime and also the problems arising with the fixing of the “floating limit”.

Consequently, the Protocol of 1997 provides for increased limits of operator's liability: The liability of the operator may be limited by the Installation State for any one nuclear incident, either to not less than 300 million Special Drawing Rights, or to not less than 150 million Special Drawing Rights provided that in excess of that amount and up to at least 300 million Special Drawing Rights public funds shall be made available by that State to compensate nuclear damage.⁷⁰

⁶⁴ Argentina, Belarus, Bosnia and Hercegovina, Jordan, Kazakhstan, Latvia, Montenegro, Morocco, Niger, Poland, Romania, Saudi Arabia and the United Arab Emirates.

⁶⁵ Armenia, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Republic of Moldova, Romania, Russian Federation, Slovakia, Serbia, Ukraine.

⁶⁶ V. Lamm, *The Protocol Amending the 1963 Vienna Convention*, “Nuclear Law Bulletin”, 2/1998, pp. 7-9.

⁶⁷ Amended Vienna Convention, Article I.A.2.

⁶⁸ Amended Vienna Convention, Article I.B.

⁶⁹ Amended Vienna Convention, Article V.

⁷⁰ Further, Amended Vienna Convention addresses the adjustments of liability amounts in view of inflation and other factors via a relatively simplified procedure. Pursuant to this provision, a meeting of the Contracting Parties shall be convened by the Director General of the International Atomic Energy Agency to amend the limits of liability referred to in Article V if one-third of the Contracting Parties express a desire to that effect (Article V.D).

Further, the Protocol introduced the so called “*phase-in mechanism*”, enabling the Contracting Parties to fix the liability amount to 100 million Special Drawing Rights for a transitional period of 15 years after the entry into the force.⁷¹ Therefore, fixing the liability amount to this amount is a rather *provisional* measure, intended basically to attract as much as possible new Contracting Parties to the liability framework, created by the Amended Vienna Convention. However, even the “*phasing-in*” amount of liability is over 40 times higher than the minimal amount required in the (original version) of the Vienna Convention.⁷² Consequently, increased liability limits will constitute main challenge for the national legislation, implementing the Protocol of 1997.

The Protocol of 1997 does not amend the rules for congruence between the liability and insurance or other financial security. Also under the Amended Vienna Convention, the operator shall be required to maintain insurance or other financial security covering his liability for nuclear damage in such amount, of such type and in such terms as the Installation State shall specify. However, the Protocol of 1997 do address the issue of insurance for the case, a Contracting Party will opt for operator's *unlimited* liability.⁷³ In that case, the Installation State may establish a limit of the financial security of the operator liable, provided that such limit is not lower than 300 million Special Drawing Rights. The Installation State shall ensure the payment of claims for compensation for nuclear damage which have been established against the operator to the extent that the yield of the financial security is inadequate to satisfy such claims, but not in excess of the amount of the 300 million Special Drawing Rights.

Further, in strict contrast to a rather *laconic* definition of damages covered in the Vienna Convention, the list of covered damages in the Amended Vienna Convention is more impressive.⁷⁴ In addition to loss of life, any personal injury, loss of or damage to property, which were already covered in the Vienna Convention, also following damages are to be covered, each of them to the extent determined by the law of the competent court. Under the liability framework of the Amended Vienna Convention, also economic loss arising from of life, any personal injury, loss of or damage to property, if incurred by a person entitled to claim in respect of such loss or damage is covered by the operator's liability. Further, the costs of measures of reinstatement of impaired environment, unless such impairment is insignificant, 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 the costs of preventive measures, and further loss or damage caused by such measures are covered.

⁷¹ The Protocol entered into force in 2003. The possibility to fix the special transitional liability limit is therefore ceasing in 2018.

⁷² It is a matter of fact, that a number of States, which did participate in the Diplomatic Conference, did not ratify the Protocol of 1997, despite of this phasing-in mechanism. This is in particular the case of Hungary, the Czech Republic, Lithuania and Ukraine.

⁷³ Although the Vienna Convention has in principle enabled an unlimited liability of the operator, the issue of insurance for this case hasn't been addressed explicitly.

⁷⁴ Amended Vienna Convention, Article I.2.k.

In this respect, the Protocol of 1997 introduced very detailed definitions⁷⁵ of the terms “measures of reinstatement”⁷⁶, “preventive measures”⁷⁷ and “reasonable measures.”⁷⁸

Further, the time limitation of operator’s liability is being prolonged to 30 years from the nuclear incident in cases of a loss of life, or personal injury. In other cases, the liability of operator is limited to 10 years.⁷⁹

It is a matter of fact, that these three aspects (increasing of liability limits, enlarging of the scope of damages covered and prolongation of time limits) do represent the most important pillars of the liability framework established by the Amended Vienna Convention. Since 2003, this amended liability framework has been existing peacefully in parallel to the liability framework, established by the Vienna Convention. However, the three pillars do also represent major obstacle for many Contracting Parties of the Vienna Convention to ratify, or to accede to the Protocol of 1997. It is a matter of fact, that only two States⁸⁰, operating nuclear installations in their territory, have ratified the Protocol of 1997 so far. Consequently, major nuclear States of the Central and Easter Europe (Czech Republic, Slovakia, Ukraine, Russian Federation) do still stay – even 20 years after the adoption of the Protocol of 1997 - out of the framework of the Amended Vienna Convention. In this respect, question arises, whether ambitions enshrined in the provisions of the Protocol of 1997 weren’t too high and whether environmental activism did not block the further development of the liability framework and international law.

At last, but not at least, it should be also mentioned, that any prospective State willing to join the liability framework of the Vienna Convention⁸¹, must accede to the Amended Vienna Convention.

⁷⁵ Vedran Soljan, *The new definition of nuclear damage in the 1997 Protocol to Amend the 1963 Vienna Convention on Civil Liability for Nuclear Damage*, [in] *Reform of Civil Nuclear Liability*, ed. by OECD, OECD, Paris 1999, pp. 59-84.

⁷⁶ "Measures of reinstatement" means any reasonable measures which have been approved by the competent authorities of the State where the measures were taken, and which aim to reinstate or restore damaged or destroyed components of the environment, or to introduce, where reasonable, the equivalent of these components into the environment. The law of the State where the damage is suffered shall determine who is entitled to take such measures (Amended Vienna Convention, Article I.1.m).

⁷⁷ "Preventive measures" means any reasonable measures taken by any person after a nuclear incident has occurred to prevent or minimize damage referred to in sub-paragraphs (k)(i) to (v) or (vii), subject to any approval of the competent authorities required by the law of the State where the measures were taken (Amended Vienna Convention, Article I, Par. 1, letter /n/).

⁷⁸ "Reasonable measures" means measures which are found under the law of the competent court to be appropriate and proportionate having regard to all the circumstances, for example the nature and extent of the damage incurred or, in the case of preventive measures, the nature and extent of the risk of such damage; the extent to which, at the time they are taken, such measures are likely to be effective; and relevant scientific and technical expertise (Amended Vienna Convention, Article I.1.o).

⁷⁹ Amended Vienna Convention, Article VI.

⁸⁰ Argentina and Romania.

⁸¹ There is a number of States, operating nuclear installations in their territory and not being Contracting Party to any international treaty covering the issues of nuclear liability. Currently, this is in particular the case of China and India.

7. Conclusion

55 years ago, the Vienna Convention on Civil Liability for Nuclear Damage was adopted under the auspices of the IAEA. With a wide adherence of the States of the formed Easter bloc, the Vienna Convention became an important regional instrument, governing the issues of liability and compensation for nuclear damages.

Currently, the Convention establishes a coherent liability framework, covering a wide region of the Central and Eastern Europe, thus connecting both EU- and non-EU Member States. The major nuclear States of the region (in particular the Russian Federation, Ukraine, Czech Republic, Romania etc.) are participating currently in the liability framework established.⁸² The specific principles of nuclear liability, established by the Convention, have been widely accepted by the executives and industry of the concerned States.

Consequently, the Vienna Convention can be evaluated as a successful international treaty, which have been able to attract and facilitate interests of both nuclear- and non-nuclear States. Also, the Vienna Convention provided for an appropriate tool establishing trust of the public in the nuclear programs of its Contracting Parties and also, of other States, adhering to the same principles.

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⁸² M. Novotná, P. Varga, J. Handrlica, *Strengthening of Nuclear Liability Regime: A Tool to Enhance Nuclear New Build*, RW&W Publishing, Passau 2015, pp. 15-16.

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