

## CIVIL LIABILITY FOR NUCLEAR DAMAGE: COMPARATIVE ANALYSIS OF INTERNATIONAL TREATIES

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### Abstract

It was widely accepted that nuclear damage might be extensive and spread to other countries. International civil liability for nuclear damage is embodied by two major instruments: International Atomic Energy Agency (IAEA) 1963 Vienna Convention on Civil liability for Nuclear Damage and Paris Convention of 1960 on third party liability (OECD) with its amending protocols. Major problem arises because of lack of coherence and for this reason supplementary conventions and protocols has been adopted but sufficient results has not been achieved. International treaties on civil liability for nuclear damage are mostly based upon principles of operator’s exclusive, channeling, strict liability for nuclear damage, mandatory financial coverage, compensation without discrimination. These principles set ground for the appropriate compensation standard thus minimizing the difficulty level of complicated legal cross-actions and identifies certain subjects in individual cases who are liable also allows a concentration of the insurance capacity. Although Conventions sets similar principles, Europe remains in two different liability regimes which cover differences of liability amounts, scope of application, rules of jurisdiction conflicts. Problem of legal coherence at European Union level also arises because Member States are either parties to the Paris Convention or Vienna Convention at different speeds. This research paper provides an in-depth analysis of international legal framework development and impetus to create trans-boundary compensation mechanisms thus to foster development of European Union nuclear energy market and to provide higher protection for victims inside and outside the country where the incident has occurred.

**Purpose** – provide comparative analysis of international treaties which regulate civil liability for nuclear damage in the context of European Union nuclear energy market development.

**Design/methodology** - paper is based on document analysis, systemic, comparative analysis method by comparing different conventions and its implications.

**Findings** – two liability regimes set different liability amount for the operator and some additional implications to the State and with its amendments provides additional compensation options from all contracting parties collected funds. However the problem rises for the operator to provide insurance whereas Vienna convention only sets minimum liability amount and it is up to state to decide on liability limits or even to provide unlimited liability for the operator. In this case operator faces difficulties to find appropriate insurance as it has to be guaranteed for certain amount. Another situation when a State provides very high maximum amount of the operator’s

liability therefore state aid problem arises because there is a need for state guarantee or when there are several operators and not all of them need this amount of insurance because they are being decommissioned.

**Research limitations** – to analyze liability regimes in the light of cohesion and harmonization of regimes also the obligation of the nuclear installation operator to provide insurance when maximum amounts or blank indemnity are set by national law.

**Practical implication** – This comparative analysis provides a background on further discussions concerning the nuclear operator’s liability and insurance limits issues and cohesion between two regimes by providing a harmonized model throughout European Union.

**Originality** – Only a few authors have analyzed some aspects of nuclear liability there is still a lack of academic insights into nuclear liability regimes and insurance issues in the light of competition law. This work provides insights into nuclear liability issues and will certainly be valuable in practice when developing nuclear projects.

**Keywords:** civil liability for nuclear damage, Vienna Convention, Paris Convention, operator of nuclear installation, strict liability, comparative analysis.

**Research type:** research paper

## Introduction

The need for special nuclear liability regime originated from Brookhaven Report dated back 1957. This report for the first time addressed the risks and consequences of nuclear accidents also set background to create certain insurance instruments and preventive measures. Nuclear liability regime provides two approaches: Paris Convention on Third Party Liability in the Field of Nuclear Energy (hereinafter – Paris Convention) and Vienna Convention on Civil Liability for Nuclear Damage (hereinafter – Vienna Convention). Chernobyl accident put up the intention to create more effective and viable international nuclear liability and compensation regime. Several amendments to the Conventions were made however not all Member States acceded the adopted protocols and some of them are still not in force. Nuclear liability regime provides coherent compensation system for nuclear damage and facilitates international trade in nuclear material. Conventions leaves discretion for the Contracting Parties to decide what will be national regulation whereas there is no strict implication to impose appropriate measures. The aim of this article is to compare different international regimes regarding the civil liability for nuclear damage and the need to create trans-boundary compensation system. Research is based on document analysis, comparative and systematic analysis methods to provide comparative aspects of different liability systems.

### 1. Basic principles of civil liability for nuclear damage

The fundamental principles were established by Paris Convention and later on were found on subsequent international agreements are: the operator of nuclear installation is exclusively liable for accident, compensation limited to a precise amount, liability duration is limited to certain period, financial guarantee of the operator corresponding to its liability non-concurrent jurisdiction.<sup>1</sup> Civil liability on nuclear damage is based on several principles which will be shortly explained above. Strict liability means that after accident occurs the operator of nuclear

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<sup>1</sup> Crawford. J., Pellet. A., Olleson. S., “*The Law of International Responsibility*” Oxford university press 2010. P. 918

installation is exclusively liable despite his fault or negligence<sup>1</sup> therefore litigation process is fostered and possible obstacles are carried away. Operator of nuclear installation is exclusively liable therefore claims are lodged exclusively against the nuclear operator. Such principle presupposes legal channeling to the nuclear operator<sup>2</sup> and main purpose is to prevent legal duplicated actions likewise to identify a liable subject in nuclear accident and to draw attention to the insurance capacity.<sup>3</sup> Operator might be vindicated from liability if he proves that a civil war, an armed conflict or in even gross negligence of the victim caused nuclear incident.<sup>4</sup> The Conventions provide an opportunity for Contracting Parties to limit the nuclear operator liability in the certain amount. However the liability issues raise major discussions in the international debates. There are also some countries which chose to impose blank indemnity for the operator<sup>5</sup>. The amount of civil liability for nuclear damage has increased gradually to provide certain benefits to nuclear operator in certain level assures avoidance of recourse claims (the case when operator has very high imposed liability level) and reflect the requisite for higher operator responsibility thus foster development of nuclear energy market. Liability is also limited in time which means that claims for compensation have to be lodged in 30 years related to loss of life and personal injury and in relation to other damage in 10 years when incident occurred.<sup>6</sup>

Operator of nuclear installation is required to provide financial coverage for the certain amount of money specified by the Installation State. Unlimited financial coverage is not possible as the capacity of insurance market is limited. In this case insurance amounts are relatively high and therefore legislators encourage insurers to bring together the nuclear insurance pools thus providing an international insurance mechanism.<sup>7</sup> There is also a possibility for a number of nuclear operators to set an insurance pool which provides a wide coverage of damage in case an accident occurs.<sup>8</sup> Such models are used in Germany and USA. Operator’s pool makes rationale when country has several nuclear installations.

Principle of exclusive jurisdiction is granted to the courts of the State where accident has occurred and prevents a situation when claimants seek to find more convenient adjudicators, also sets an appropriate background for nuclear operators to a certain level of compensation.<sup>9</sup> Principle of exclusive jurisdiction identifies the competent court close to the source of damage thus allowing person who suffered damage to lodge claims without any further travelling.

Basic principles of nuclear liability provides harmonization of national laws thus creates legal certainty, fosters Contracting Parties to achieve objectives at an international level thus eliminating the possibility of discrimination between victims also ensures that claimants in states

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<sup>1</sup> Vienna Convention on civil liability for nuclear damage and the 1997 Convention on Supplementary compensation for nuclear damage. Explanatory texts. 2007. IAEA

<sup>2</sup> *Ibid.*

<sup>3</sup> Legal channeling is accepted in all States that enacts nuclear liability except Austria, USA. The latter has a regulation for nuclear damage which provides prompt and orderly compensation from two tier system and contains pool of insurance funds.

<sup>4</sup> Vienna Convention on Civil Liability for Nuclear Damage (Consolidated text amended by the Protocol of 1997). Art IV.

<sup>5</sup> Counties which implements unlimited liability for the operator are: Austria, Germany, Japan, Switzerland, Russia.

<sup>6</sup> Op cit. 4, Art. VI

<sup>7</sup> Stoiber, C. *et al.* 2003. *Handbook on Nuclear Law*. Vienna.

<sup>8</sup> *Ibid.*

<sup>9</sup> *Ibid.* p. 115.

with unified legislation would have their disputes settled according to similar rules despite the location of the accident.

## 2. The Paris Convention on Third Party Liability in the Field of Nuclear Energy

Third party liability for nuclear activities covered by international conventions reflects an early identification and prevention of nuclear damage system also put forward the impetus in a timely manner to create a decent system of efficient protection of victims in case of accident thus enhances the progress of nuclear market. The Paris Convention provides a nuclear third party regime and covers damage caused in the territory of its Contracting Parties or high seas<sup>1</sup>. After the adoption of this convention contracting parties recognized that liability amount set up by the Convention was not sufficient to cover nuclear incident damage therefore several amendments to the convention were made and later on the Brussels Supplementary Convention was adopted which provided three tier systems and established additional State compensation tier and public funds compensation tier<sup>2</sup>. The Paris Convention is regional European agreement with several non-European members of the OECD<sup>3</sup>. The Convention does not apply to nuclear incidents occurring outside territory of the contracting states or to damage, unless operator’s national law provides otherwise<sup>4</sup>. The Steering Committee for Nuclear Energy adopted interpretation whereas Paris Convention should apply to incidents occurred in the high seas and in a non – contracting state<sup>5</sup>. Paris Convention imposes minimum liability amount of 5 million SDR<sup>6</sup> to nuclear operator and maximum of 15 million SDR. However most of the contracting parties have higher operator’s liability amount, for example Germany has unlimited liability for nuclear operator. Therefore Steering Committee for Nuclear Energy adopted non-binding recommendations to raise the liability amounts up to 150 million SDR.

Compensation system under Paris Convention and Brussels Supplementary Convention is comprised of three tiers. Under first tier nuclear operator is liable under amount of at least 5 million SDR and is obliged to provide financial insurance or security. Under second tier amount between sum covered by the nuclear operator and 175 million SDR will be provided by Installation State through its public funds. Under third tier the liability between 175 and 300 million SDRs will be provided by the Member contribution.<sup>7</sup> As the damage exceeds second tier level third tier provides an amount of 125 million SDRs out of funds which are contributed by all the parties according to Brussels Supplementary Convention. The Chernobyl accident brought the need to increase the amounts and coverage of liability. In this regard 2004 Protocol to amend

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<sup>1</sup> The 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, by the Protocol of 16 November 1982 and by the Protocol of 12 February 2004 (Protocol not yet in force).

<sup>2</sup> Brussels Supplementary Convention (1963) „Convention of 31 January 1963, supplementary to the Paris Convention of July 1960“. Brussels.

<sup>3</sup> Australia, Canada, Japan, Korea, Mexico, United States of America are not Contracting parties of nuclear liability conventions.

<sup>4</sup> *Op cit* 11.

<sup>5</sup> <<http://www.oecd-nea.org/law/paris-convention-protocol.html>> [interactive] [accessed 2013-02-01]

<sup>6</sup> The SDR is International Monetary Fund reserve asset. 1 SDR = 1.29500 USD (Approx. rates as of 2013 March)

<sup>7</sup> *Op cit* 11.

the Paris Convention and Brussels Supplementary Convention was adopted<sup>1</sup> whereas the amount of operator’s liability has increased to an amount not less than 700 million Euros. Protocol also recognizes the right of the State with an unlimited liability to participate in the scheme of Convention. Convention sets an obligation for the operators to secure financial liability however if State declares unlimited liability, operator has to ensure financial security up to 700 million Euros or in certain cases<sup>2</sup> Convention sets reduced liability amount. Amended protocol provides a broader range of damage for which compensation is applicable also broadens the geographical scope.<sup>3</sup> Despite the amending protocols were adopted not all of them are in force because lack of ratified countries thus existing regulation supposes different regulation in Contracting Parties also imposed liability amounts widely vary thus creating divergence between States.

### 3. Vienna Convention on Civil liability for Nuclear Damage

In 1963 Vienna Convention on Civil liability for Nuclear Damage was adopted at the diplomatic conference at IAEA Headquarters in Vienna. This Convention is a document to which all States may adhere of weather they are parties to existing nuclear liability conventions. Vienna Convention has been amended once by 1997 Protocol<sup>4</sup> and sets operator’s maximum liability up to 300 million SDRs (about 360 million Euros). According to Vienna Convention the upper ceiling for the operator is not fixed but it may be limited by legislation by each State however implemented ground is not less than US \$ 5 million<sup>5</sup>. Convention does not provide maximum amount of liability. There is an obligation for the operator to provide insurance to imposed liability and in case there is no possibility to grant adequate insurance, the State covers difference between specified liability amounts.

Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage (hereinafter -1997 Protocol) and the Convention on Supplementary Compensation for Nuclear Damage (hereinafter - CSC) were major instruments that provided increased liability amounts in the case nuclear accident occurs they also provided amendments to the scope of damage covered and the jurisdiction rules. Furthermore, CSC establishes an opportunity for Vienna Convention countries or Paris Convention countries or even a country which is not a Party to either of these conventions to accede. 1997 Protocol provides new liability amounts for the nuclear operator not less than 300 million SDRs or may be limited to not less than 150 million SDRs and up to amount of 300 million SDR State compensates nuclear damage. Despite this regulation there is also a possibility to provide operators liability for not less than 5 million SDR and the rest amount will be provided by the Installation State.<sup>6</sup> 1997 Protocol introduces amendments related to the scope

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<sup>1</sup>Protocol to Amend the Paris Convention on Third Party Liability in the Field of Nuclear Energy of 29 July 1960. Only Norway and Switzerland has ratified this protocol.

<sup>2</sup> Convention sets minimum amounts of 70 million EUR for low-risk installations and 80 million EUR for transport activities.

<sup>3</sup> Convention covers certain types of economic loss, the cost of measures to reinstate a significantly deteriorated environment, the income loss which incurs as a result of debilitation of environment also the necessary preventive measures which has to be taken and additional loss linked to these measures.

<sup>4</sup> Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage adopted on 29 September 1997.

<sup>5</sup> Value in gold 29 April 1963. Equal to 235 million Dollars (based on US\$ gold value on 10/08/2012 of \$1650/oz)

<sup>6</sup> 1997 Protocol to Amend the Vienna Convention on Civil Liability for Nuclear damage 29 September 1997.IAEA.

of the application and covers damage despite of its location also considers the possibility to modify regulation on the risks involved and clarifies that convention is only applicable to nuclear installations used for peaceful purposes however it does not provide a solution in cases when incident occurs during the transportation and damage is suffered in a non-Contracting party.

#### 4. Cohesion between Vienna and Paris nuclear liability regimes

Chernobyl accident catalyzed the improvements of liability regime consequently the Joint Protocol provided a framework by combining certain aspects of different liability regime<sup>1</sup>. This regulation introduces an option to both Vienna and Paris Convention States to implement certain unifying provisions when nuclear accident occurs. It is important to mention the Joint Protocol links Paris and Vienna conventions thus broadening the application of civil liability regime.<sup>2</sup> Despite the similarities between two Conventions, there still remains a lack of regulation coherence and a need for harmonization.

Other instrument that draws relation to both systems is CSC which is open to States that are parties to Vienna Convention or Paris Convention also to Non-convention States. CSC has a so called “grandfather clause” which provides opportunity for USA to participate at this regime without changing its national legislation. Convention is still not yet in force.<sup>3</sup>

According to the CSC Installation State will ensure the availability of 300 million SDRs; however the State may establish the limit of operator’s liability up to 300 million SRDs or may set lower or higher amount. Another tier provides compensation from public funds which is up to 300 million SDR and 150 million of this amount is especially granted to cover the trans-boundary impact.<sup>4</sup>

Lithuania is party to 1963 Vienna Convention and 1988 Joint Protocol (has signed and ratified) also has signed but not yet ratified the 1997 Protocol and CSC. State provides financial security limit up to 160 million dollars according to 1963 Vienna Convention the same limit is set to nuclear operator.

Interesting to take insight into the USA regulation of nuclear liability. As it was mentioned above USA has ratified CSC but is not a contracting party either to Vienna or Paris Conventions. According to Price – Anderson Act which<sup>5</sup> the purpose is to ensure the availability of large nuclear pools to provide orderly compensation for victims who incur damages from radiological incident despite the fact who is liable is certain case. Price Anderson Act sets an obligation for operators to ensure the highest available insurance which is up to 375 million dollars also after the incident occurs operators are obliged to pay additional amount (about \$ 95.8 million per entity) to a

<sup>1</sup> The Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention of 1988.

<sup>2</sup> Otto von Busekist, “A Bridge Between Two Conventions on Civil Liability for Nuclear Damage: the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention”, *Nuclear Law Bulletin* No. 43, p. 10 (1989).

<sup>3</sup> Art. 2: „Convention will enter into force on the ninetieth day following the date on which at least five States with a minimum of 400.000 units of installed nuclear capacity have deposited an instrument”. According to latest status there are 15 signatories, 4 of which have ratified this Convention, namely Argentina, Morocco, Romania, United States of America.

<sup>4</sup> Convention on Supplementary Compensation for Nuclear Damage was adopted on 12 September 1997, Vienna.

<sup>5</sup> The Price – Anderson Act with Amendments (1988). 1957, USA.

nuclear insurance pool. The combined two tier system now covers about \$10 billion<sup>1</sup>. This regulation provides whole coverage to those who are affected by nuclear to damage to guarantee the availability of compensation.

Liability regimes implies nuclear operator to provide financial security insurance, however Vienna Convention sets only minimum liability amount compare to Paris which imposed maximum liability amount for the nuclear operator or installation state. Therefore problem arises when national legislation provides operator to ensure financial liability to the amount not specified in the international conventions and there are also decommissioning nuclear objects which are not likely to be in the same situation as installation which is operational. In this case possible State Aid issues arise when legislation is imposed to selectively to one operator avoiding other also there might be need of state guarantee in case of high cap liability limits are imposed. These issues should be analyzed in the competition law situation.

After the closer analysis of Paris Vienna regimes for nuclear damage we can see that there is no unified regime throughout Europe also amending protocols are not into force and there still remain two approaches of liability regime. Lessons from Fukushima accident showed the need to provide appropriate compensation regimes for victims. USA example of two tier system might serve as an example for European Union looking for harmonized and efficient compensation mechanism thus fostering development of nuclear energy market. This system provides adequate and orderly compensation also lets nuclear operator after compensation paid to the victims of accident to recover and continue business without bankruptcy. In this regard there might be adopted European Directive which put efforts to provide efficient compensation mechanism and provide comfort zone for nuclear operators thus enhancing to develop nuclear industry.

### Conclusions

1. Nuclear liability is based on principles of exclusive and channelling liability of the operator, compensation limited to a precise amount and in time, exclusive jurisdiction granted to the courts of Installation State, obligation of financial coverage for the operator.
2. Paris Convention was the first instrument upon which third party liability was based later on. With later amendments provides three tier systems which provides wider range of compensation to the victims.
3. Vienna Convention does not provide maximum amount of liability this is up to contracting party to decide on what amount operator will be liable. However revised Vienna Convention increases the minimum amount of damaged to be compensated up to 300 million SDRs.
4. Although there are two regimes of nuclear compensation not all amendments are in force because not enough contracting parties acceded these protocols and later on ratified. There is still a lack of harmonised nuclear liability regime throughout European Union. Joint protocol and Convention on Supplementary convention are certain connections between two different systems but again CSC is not yet in force and several countries which adhere to Paris convention has signed but not ratified Joint protocol also problem arises in when operator is obliged to provide the insurance which is implied by national legislation and is higher than Conventions provide. Then State Aid issues might rise when operators therefore have to provide financial coverage and state guarantee is inevitable.

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<sup>1</sup> *Ibid.*

5. Possible solution to provide European Union harmonised nuclear liability regime might be the example of USA and it's two tier system under which operator is liable under certain amount of money and additional several times bigger coverage is provided to insurance pool by all operators in case accident occurs.

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