

**AN ANALYSIS AND DISCUSSION ON THE CONCEPTS OF STATE
RESPONSIBILITY AND STATE LIABILITY IN THE CONTEXT OF A
NUCLEAR ACCIDENT OR RADIOLOGICAL EMERGENCY WITH
TRANSBOUNDARY EFFECTS¹**

*Arda İnal,
(Turkish Atomic Energy Authority,
Department of Nuclear Safety)*

¹ This paper was written as a dissertation within the International School of Nuclear Law held in Montpellier and organised by OECD Nuclear Energy Agency (NEA) and University of Montpellier in 2015 and prepared within the framework of Publication Style Guide of NEA Legal Affairs Section. Author was awarded and became entitled to receive the 'ISNL Nuclear Law Diploma' of Montpellier University after the assessment of the article by NEA.

TABLE OF CONTENTS

- I. Introduction
- II. Nuclear Liability in General
 - II.1. Background
 - II.2. International nuclear liability conventions
 - II.3. Nuclear liability: Definitions & Principles
 - II.3.1. Main definitions
 - II.3.2. Nuclear liability principles
- III. Analysis and Discussion on the Concepts of State Responsibility and State Liability in the Context of a Nuclear Accident or Radiological Emergency with Transboundary Effects
 - III.1. Background: State Responsibility In The Practice Of The International Law Commission
 - III.2. The concept of state responsibility
 - III.2.1. The concept of state responsibility in general
 - III.2.2. The concept of state responsibility in the area of nuclear law
 - III.3. The concept of state liability
 - III.3.1. The concept of state liability in general and difference between state responsibility and state liability
 - III.3.2. The concept of state liability in the area of nuclear law
 - III.4. Analysis on the concept of state liability under international liability convention regimes
 - III.4.1. The concept of state liability under the regime of Paris Convention
 - III.4.1.1. The Brussels Supplementary Convention
 - III.4.2. The concept of state liability under the regime of Vienna Convention
 - III.4.2.1. The 1988 Joint Protocol Relating to the Application of the Vienna and Paris Conventions on Liability for Nuclear Damage
 - III.4.2.2. The 1997 Protocol to Amend the Vienna Convention
 - III.4.2.3. The 1997 Convention on Supplementary Compensation for Nuclear Damage
 - III.5. Current Nuclear Liability Regime in Turkey
- IV. Conclusion
- V. References

ABBREVIATIONS

Convention on Nuclear Safety	CNS
International Atomic Energy Agency	IAEA
Convention on Supplementary Compensation	CSC
International Law Commission	ILC
United Nations	UN
Convention for Regulation of the Activities on Antarctic Mineral Resources	CRAMRA
Organisation for Economic Cooperation and Development	OECD

I. INTRODUCTION

As is known, nuclear related activities, by its very nature, pose special risks to individuals, property and the environment. But it is also well known that nuclear energy holds significant benefits in various fields including electricity production, medicine, agriculture etc. As a result of their both risks and benefits, nuclear related activities need to be kept under a legal regime of regulations covering a regulatory framework, authorisation, continuous control, inspection and imposing sanctions to protect health and safety of persons and the environment. Therefore, very important and various responsibilities are attributed to states via international organizations and legal instruments.

For instance, in accordance with the Convention on Nuclear Safety²; “Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations.”³ For another instance, states must establish or designate regulatory bodies which are financially independent, separated from the organizations for utilising or promoting nuclear energy, adequately authorised and competent to set standards and enforce them within the legal framework of the state.

At the present time, there are plenty of international treaties and conventions and other instruments agreed or accepted by states and innumerable of national standards or regulations to ensure nuclear safety and security to protect individuals, property, environment and even next generations. Despite all these national and international instruments, Fukushima Daiichi nuclear accident occurred in Japan in 2011 and it has shown us that, nuclear accidents may occur in anytime, anywhere despite the existence of rules, standards, regulations, laws or treaties.

At this very point, nuclear liability law and liability regimes come forward and concern with procedures and principles regarding compensation of the damages caused by nuclear incidents. Nuclear liability regime is fundamentally a result of international developments emerging in the nuclear energy field and a branch comprising rules regulated by states and/or international organizations. By this means, this regime becomes a junction point between national and international law principles.

Throughout this paper, states’ liability or responsibility within the context of liability regimes will be analysed and discussed. In the first section, “nuclear liability” will be scrutinised and in the second section, concepts of state responsibility and state liability in case of a nuclear accident or radiological emergency with transboundary effects will be analysed and discussed under international law and under nuclear law.

II. NUCLEAR LIABILITY IN GENERAL

II.1. Background

The concept of special nuclear liability regime owes its origin to the Brookhaven Report of 1957.⁴ The report actually, for the first time in history, did assess the risks associated with civilian

² Convention on Nuclear Safety (1994) (hereinafter “CNS”), IAEA Doc. INFCIRC/449, 1963 UNTS 293.

³ Article 7, CNS (1994),

⁴ Pelzer, N. (1988), “Concepts of Nuclear Liability Revisited: A Post-Chernobyl Assessment of the Paris and the Vienna Conventions, in Nuclear Energy Law After Chernobyl 98” in Cameron, P., L. Hancher and W. Kuhn, (eds.), *Nuclear Energy Law After Chernobyl*, Graham & Trotman Limited, London.

nuclear power and made a possibility-prediction on the probable consequences of any nuclear incident.⁵ This report was the starting point of what is today regarded as nuclear liability law; a special regime.⁶ Subsequently, Paris Convention on Third Party Liability in the Field of Nuclear Energy⁷ of 29 July 1960 supplemented by Convention Supplementary to the Paris Convention of 1963⁸, amended by an Additional Protocol of 1964 and a Protocol of 1982 under the auspices of Organisation for Economic Cooperation and Development (hereinafter “OECD”), and Vienna Convention on Civil Liability for Nuclear Damage⁹ of 21 May 1963 under International Atomic Energy Agency (hereinafter “IAEA”), were drafted, though, with some inherent inadequacies which came to light after Chernobyl incident.¹⁰

After Chernobyl accident, states and organizations have been initiated to amend the national legislations and/or international instruments or create newer ones to develop new regimes without excepting liability. Some of these instruments regarding nuclear liability are listed below:

- 21 September 1988: adoption of the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention;¹¹
- 12 September 1997: adoption of the Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage;¹²
- 12 September 1997: adoption of the Convention on Supplementary Compensation for Nuclear Damage;¹³
- 12 February 2004: adoption of the Protocol to Amend 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 and by the Protocol of 16 November 1982;¹⁴
- 12 February 2004: adoption of the Protocol to Amend the Convention of 31 January 1963 Supplementary to 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 and by the Protocol of 16 November 1982;¹⁵

⁵ See US Atomic Energy Commission 1957 (WASH-740): Theoretical possibilities and consequences of major accidents in large nuclear power plants.

⁶ See Pelzer, N., *supra* note 4.

⁷ Paris Convention on Third Party Liability in the Field of Nuclear Energy of 29th July 1960, as amended by the Additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982 (Hereinafter “Paris Convention”), 1519 UNTS 329.

⁸ Convention Supplementary to the Paris Convention, concluded at Brussels, 31 January 1963 (hereinafter “Brussels Supplementary Convention”), 1041 UNTS 358.

⁹ Vienna Convention on Civil Liability for Nuclear Damage, (1963) (hereinafter “Vienna Convention”), IAEA Doc. INFCIRC/500, 1063 UNTS 266.

¹⁰ Adisianya, A. (2009/10), “Different Compensation Systems Under Nuclear Liability Conventions”, CELMP Car Review, Vol.14, University of Dundee, Dundee.

¹¹ Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention (1988) (hereinafter “Joint Protocol”), IAEA Doc. INFCIRC/402, 1672 UNTS 293.

¹² Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage (1997), IAEA Doc. INFCIRC/566, 2241 UNTS 302; unrevised Vienna Convention: INFCIRC/500.

¹³ Convention on Supplementary Compensation for Nuclear Damage (1997) (hereinafter “CSC”), IAEA Doc. INFCIRC/567, INFCIRC/567, 36 ILM 1473.

¹⁴ Protocol to Amend the [Paris] Convention on Third Party Liability in the Field of Nuclear Energy (2004) (hereinafter “2004 Protocol to Amend the Paris Convention”), available at: www.oecd.nea.org/law/paris_convention.pdf

¹⁵ Protocol to Amend the [Brussels] Convention of 31 January 1963 Supplementary to the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy (2004), as amended, available at: www.oecd.nea.org/law/brussels_supplementary_convention.pdf.

After Chernobyl accident has shown that nuclear accidents may have very detrimental effects in the territories of other states, states have inclined to widen liability regimes' scope by extending the scope of nuclear damage, territorial scope of application of the conventions, increasing liability amount and enhance other measures in different concepts of nuclear law.

The results of these steps and whole progress is detected as below by Julia Schwarts in one of her articles¹⁶:

- More victims will be entitled to compensation due to the extension of the territorial scope of the nuclear liability conventions by the Joint Protocol and by the express provisions the territorial scope articles in the conventions.
- Victims will have access to larger amounts of compensation under both the basic liability conventions and the conventions on supplementary compensation.
- Victims may claim compensation for a wider range of damage suffered due to the new concept of nuclear damage.
- Victims will have more time which to make their claims due to the prolonged prescription or extinction periods.
- The special concerns of coastal are recognised by granting them jurisdiction for nuclear incidents occurring in their Exclusive Economic Zones .

However, there is (still) no global nuclear liability regime nevertheless these distances have been covered. Currently, majority of countries which also includes some of nuclear states like China, Korea, India are not yet a party to any of the nuclear liability conventions. And as a consequence of this situation, there are still uncertainties in the field of liability and compensation in case of a nuclear accident with transboundary results.

II.2. International Nuclear Liability Conventions

The following international nuclear liability conventions have been concluded, at the worldwide level (open to all States)¹⁷:

(a) The 1963 Vienna Convention on Civil Liability for Nuclear Damage, revised in 1997 by Protocol amending Vienna Convention on Civil Liability for Nuclear Damage: (40 Contracting Parties to the 1963 Vienna Convention and 12 Contracting Parties to the 1997 Protocol)

(b) The 1997 Convention on Supplementary Compensation for Nuclear Damage: entered into force on 15 April 2015 with 7 Contracting Parties.

(c) The 1988 Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention (the Joint Protocol): 28 Contracting Parties.

The following international nuclear liability conventions have been concluded at the regional level (open to the OECD States; and open to other States only if all Parties give their consent)¹⁸:

¹⁶ Schwarts, J. (2003), "Liability and Compensation for Nuclear Damage: The Revision of the Paris Convention and the Brussels Supplementary Convention, *NEA News* 2003, No.21.1, pp. 8 *et seq.*

¹⁷ Stoiber, C., et al. (2003), *Handbook on Nuclear Law*, IAEA, Vienna, pp. 107-108. (Numbers of states party to the conventions and other changes are updated in the dissertation text)

¹⁸ *Ibid.* p.108. (Numbers of States party to the Conventions and other changes are updated in the dissertation text but convention names are not abbreviated in order to keep the original citation)

(a) The 1960 Paris Convention on Third Party Liability in the Field of Nuclear Energy: 16 European Contracting Parties, revised in 1964, 1982 and 2004 (2004 revision not yet in force).

(b) The 1963 Brussels Convention Supplementary to the Paris Convention (the Brussels Supplementary Convention): 13 European Contracting Parties, revised in 1964, 1982 and 2003 (2004 revision not yet in force).

Paris Convention was drafted with the purpose of ensuring adequate and equitable compensation for persons who suffer damage caused by nuclear incidents whilst taking the necessary steps to ensure that the development of the production and uses of nuclear energy for peaceful purposes is not thereby hindered.¹⁹

The Paris Convention was adopted under the auspices of the OECD Nuclear Energy Agency and covers most Western European countries. It is open to any OECD country as of right and to any non-member with the consent of the other contracting parties.

The OECD Secretary-General is depositary for the Paris Convention.

3 years after Paris Convention which brings binding rules for its party states had been signed, Brussels Supplementary Convention was adopted in 1963 to provide additional funds to compensate damage suffered by a nuclear incident where Paris Convention liability amounts were insufficient. According to the Article 19 of Brussels Convention, no state may become or remain a contracting party to the Brussels Supplementary Convention unless it is already a contracting party to the Paris Convention. And according to the Article, convention will only remain in place for as long as the Paris Convention also remains in force.

The Belgium government is the depositary for the Brussels Supplementary Convention, which has been amended by protocols adopted in 1964, 1982 and 2004.

On the other hand, under the IAEA auspices, another convention named as Vienna Convention on Civil Liability for Nuclear Damage covering liability and compensation regime for nuclear damages (to property) was adopted in 21 May 1963 (and entered into force on 12 November 1977).

As shortly expressed above, after Chernobyl, 1997 Protocol to amend Vienna Convention was adopted with the objective to provide for broader scope, increased amount of liability of the operator of a nuclear installation and enhanced means for securing adequate and equitable compensation. At the same time, Convention on Supplementary Compensation (CSC) was adopted with the purpose of establishing a worldwide liability regime to supplement and enhance these measures with a view to increasing the amount of compensation for nuclear damage.

A global nuclear liability regime must attract broad adherence from both countries that use nuclear power to generate electricity (generating States) and countries that do not use nuclear power to generate electricity (non-generating States). Accordingly, the CSC was developed to attract broad adherence by both generating States and non-generating States. Specifically, the CSC focuses not only on providing legal certainty on the treatment of legal liability for nuclear damage resulting from a nuclear incident, but also on assuring, in the unlikely event of a nuclear incident, the prompt availability of meaningful compensation with a minimum of litigation and other burdens.²⁰

¹⁹ Paris Convention, Preamble, par. III.

²⁰ McRae, B. (2007), "The Convention on Supplementary Compensation for Nuclear Damage: Catalyst for a Global Nuclear Liability Regime", *Nuclear Law Bulletin*, No. 79, Nuclear Energy Agency (hereinafter "NEA"), Paris pp. 17-25.

II.3. Nuclear Liability: Definitions & Principles

II.3.1. Main Definitions

As known and clarified above, two essential liability conventions related to each other constitute an international liability regime in nuclear law. Application of the international nuclear liability regime and the corresponding national legislation will be triggered if a nuclear installation causes a nuclear accident and nuclear damage occurs as a result of that accident. The terms “nuclear installation” and nuclear incident” therefore form the core of the regime.²¹

Nuclear Installation

In the Paris Convention, nuclear installation is defined as:

““Nuclear installation” means reactors other than those comprised in any means of transport; factories for the manufacture or processing of nuclear substances; factories for the separation of isotopes of nuclear fuel; factories for the reprocessing of irradiated nuclear fuel; facilities for the storage of nuclear substances other than storage incidental to the carriage of such substances; and such other installations in which there are nuclear fuel or radioactive products or waste as the Steering Committee for Nuclear Energy of the Organisation (hereinafter referred to as the “Steering Committee”) shall from time to time determine; any Contracting Party may determine that two or more nuclear installations of one operator which are located on the same site shall, together with any other premises on that site where radioactive material is held, be treated as a single nuclear installation.”²²

In the 2004 Protocol to Amend the Paris Convention which has not entered into force yet, nuclear installation definition was amended and scope of the definition was extended by adding “installations for the disposal of nuclear substances; any such reactor, factory, facility or installation that is in the course of being decommissioned” phrase and replacing “...on that site where radioactive material is held...” phrase as “on that site where nuclear fuel or radioactive products or waste are held”.²³

In the consolidated Vienna Convention, nuclear installation is defined as:

“ “Nuclear installation” means -

- i. any nuclear reactor other than one with which a means of sea or air transport is equipped for use as a source of power, whether for propulsion thereof or for any other purpose;
- ii. any factory using nuclear fuel for the production of nuclear material, or any factory for the processing of nuclear material, including any factory for the re-processing of irradiated nuclear fuel; and
- iii. any facility where nuclear material is stored, other than storage incidental to the carriage of such material; and
- iv. such other installations in which there are nuclear fuel or radioactive products or waste as the Board of Governors of the International Atomic Energy Agency shall from time to time determine;

²¹ Stoiber, C., et al., supra note 17, p.109.

²² Paris Convention, art. 1, par. (a)

²³ 2004 Protocol to Amend Paris Convention, supra note 14.

provided that the Installation State may determine that several nuclear installations of one operator which are located at the same site shall be considered as a single nuclear installation.”²⁴

Nuclear installation is also defined in the Convention on Nuclear Safety (CNS) but this definition will not be scrutinised by author in this paper due to fact that main subject of this paper is nuclear liability.

As is seen, some of the facilities as research laboratories with very small amounts of fissionable materials, non-peaceful/military nuclear facilities and nuclear fusion reactors are outside the scope of “nuclear installation” definitions.

Nuclear incident

In the Paris Convention of 1982, nuclear incident is inclusively defined as:

“Any occurrence or succession of occurrences having the same origin which causes damage, provided that such occurrence or succession of occurrences, or any of the damage caused, arises out of or results either 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 or with any of them, or from ionizing radiations emitted by any source of radiation inside a nuclear installation.”

In the consolidated text of Vienna Convention, it is defined as “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.”

Nuclear Damage

As is seen above, a nuclear incident must cause a “damage” according to these conventions. The damage referred in these texts is “nuclear damage” which is also defined in the same liability conventions. One of the most evolving concepts for the public weal within the context of nuclear liability regime is nuclear damage.

Within the context of nuclear damage definition in the unrevised Paris Convention of 1960, types of the damage compensated were counted below:

- Damage to or loss of life
- Damage to or loss of property (other than on-site)

In addition to these, 1963 Vienna Convention includes any other loss or damage if and to extent provided by law of court with jurisdiction to hear claims.

However, pursuant to Unofficial Consolidated Text of the Paris Convention as amended by 1963, 1982 and 2004 Protocols, nuclear damage means;

“1. loss of life or personal injury;

2. loss of or damage to property;

and each of the following to the extent determined by the law of the competent court,

3. economic loss arising from loss or damage referred to in sub-paragraph 1 or 2 above insofar as not included in those sub-paragraphs, if incurred by a person entitled to claim in respect of such loss or damage;

²⁴ OECD NEA (2008), *Compendium on International Legal Instruments in the Field of Nuclear Energy*, part 3, p. 68.

4. 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 2 above;

5. loss of income deriving from a direct 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 2 above;

6. the costs of preventive measures, and further loss or damage caused by such measures,

in the case of sub-paragraphs 1 to 5 above, to the extent that the loss or damage arises out of or results from ionising 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 substances 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.”²⁵

It should be noted here that there is a difference from the amended Vienna Convention which includes in the foregoing list – which served as a model for the Paris text – an Article I(1)(k)(vii) referring to “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.”²⁶

It should not be forgotten that, to be able to define an occurrence as a nuclear incident, there must be a causal link between a certain nuclear installation and that certain occurrence and the damage suffered. The causal link has to be proved by the person who is applying for compensation. The two convention regimes do not contain any provisions regarding causality and the subject is left to the national law of competent courts.

II.3.2 Nuclear Liability Principles

To provide sufficient protection for people, environment and even the next generations against risks of peaceful nuclear activities and to balance between risks and benefits of nuclear energy, it has been developed a number of basic principles which form the basis of nuclear liability to replace the rules of tort law. According to Schwartz²⁷, those basic principles are listed and stated below:

“*Strict Liability*: The operator of a nuclear installation is strictly liable for damage to third parties²⁸ resulting from a nuclear incident occurring at its installation or during the course of transport of nuclear substances to or from that installation. Due to the unusual risks associated with the operation of nuclear installations or the transport of nuclear substances, it was clear that those who carried out those activities should be fully responsible for any injurious consequences resulting

²⁵ 2004 Protocol to Amend the Paris Convention, art.1, par. vii.

²⁶ Desart, R.D.(2005), “The reform of the Paris Convention on Third Party Liability in the Field of Nuclear Energy and of the Brussels Supplementary Convention, *Nuclear Law Bulletin*, No. 75, NEA, Paris, pp. 7-33.

²⁷ Schwartz, J., (2006), “International Nuclear Third Party Liability Law: The Response to Chernobyl”, *International Nuclear Law in the Post-Chernobyl Period*, OECD, pp. 37-72.

²⁸ A third party is anyone other than the nuclear operator itself and other than a supplier of goods, services or technology for use in connection with a nuclear installation. A third party may be inside or outside of the nuclear installation and as such the term includes employees of the operator of the nuclear installation at which an accident occurs. In most countries, employees of the nuclear operator will also have a right to claim compensation under a system of public health insurance, social security, workers or occupational disease compensation.

therefrom. Strict liability relieves a claimant of the burden of proving fault or negligence, and imposes liability, together with the obligation to compensate the damage suffered, merely on proof of a causal link between the damage and the nuclear accident in issue. Since it would be virtually impossible for a claimant to have the necessary knowledge of what had taken place in a nuclear installation or in the course of carriage when the accident occurred, strict liability provides a large measure of equity that would not otherwise be available to victims of a nuclear accident.²⁹

Exclusive Liability: The operator of a nuclear installation is exclusively liable for damage to third parties resulting from a nuclear incident occurring at its installation or during the course of transport of nuclear substances to or from that installation. The operator is legally liable regardless of whose acts or omissions were the actual cause of the accident. For the victim, this principle obviates the need to identify and pursue those who actually caused the accident, a task which, due to the difficulty of obtaining the necessary evidence after an accident has occurred, would be virtually impossible. In addition, suppliers of nuclear goods, services and technology are spared the considerable expense of defending complicated liability actions instituted by those suffering damage. They are also relieved of the need to purchase costly third party liability insurance, an expense which would need to be incurred by each and every entity supplying goods, services or technology to the nuclear installation or for the transport of nuclear substances. The advantages enjoyed by suppliers are extended to carriers who are not responsible for the packaging of the nuclear substances being transported, who do not necessarily have the specialised knowledge of how to handle them and who would otherwise also be required to purchase costly third party liability insurance to cover their liability exposure.³⁰

Liability is Limited in Amount: Governments' desire to encourage the development of the nuclear industry by relieving nuclear operators of the burden of potentially ruinous liability claims in the event of a nuclear accident, led them to adopt a principle which limits the amount of compensation payable to victims by a nuclear operator in the event of an accident for which it is liable. Without it, nuclear operators would be exposed to unlimited liability, meaning that once their available insurance coverage for this risk is exhausted, they would have to resort to their own assets to pay nuclear damage compensation which could, in turn, lead them into bankruptcy. This principle is, so to speak, the *quid pro quo* for the benefits to victims of the imposition of strict and exclusive liability upon a nuclear operator. Thus, even if the amount of damage suffered as a result of a nuclear accident exceeds the specified amount of liability imposed upon an operator, that operator will not be required to provide any further compensation.³¹

Liability must be Financially Secured: Nuclear operators are obliged to obtain and maintain financial security in respect of their liability to third parties in an amount corresponding to their imposed liability amount. Compulsory financial security ensures that, if and when the time ever comes, funds will actually be available to pay compensation to claimants. Insurance provided by the private sector is the most frequent type of security obtained by nuclear operators but other forms are possible as well, such as a state or bank provided guarantee, operator pooling system or even self-insurance. The nuclear insurance market capacity has always been limited and it remains so to this day, even though it has increased significantly from what it was in the early days of the industry. It is this capacity which largely determines the amount of liability imposed on nuclear operators, as

²⁹ Schwartz, J., *supra* note 27, pp. 39-40.

³⁰ *Ibid*, p. 40.

³¹ *Ibid*, p. 40.

well as the ability of nuclear operators to pay not unreasonably priced premiums for that insurance.³²

Liability is Limited in Time: The providers of required financial security, primarily private insurers, have made it clear that the coverage which they provide must be limited in time, usually to not more than ten years from the date of the nuclear accident for both personal injury and property damage claims. Neither insurance companies nor nuclear operators can accept the prospect of remaining liable to pay compensation for nuclear damage for an indefinite or even an extended period of time after a nuclear accident. In addition, in most jurisdictions there is a “discovery rule” which, in addition to the time limit for instituting claims, requires claims to be filed within two or three years of the date upon which the victims discovered the damage for which compensation is claimed. In some cases, the state will assume the responsibility of paying compensation for damage suffered where claims are instituted beyond the specified limitation period.³³

These principles form the basis of existing international regimes established to address third party nuclear liability and also many national legislative regimes adopted to address liability and compensation for damage suffered by a third party.”³⁴

In addition to these, there are other principles also important for nuclear liability area just as “equal treatment” or “non-discrimination” principle. According to this principle, “the conventions and the national laws applicable under them must be applied without discrimination based on nationality, domicile or residence. This ensures in particular that victims in States other than the Accident State are treated in the same way as victims in the Accident State.”³⁵

Another leading principle for applications of liability and compensation cases in nuclear law is “jurisdiction.” As a general rule, the nuclear liability conventions cover two provisions that:

- Only courts of a state in which the nuclear incident occurs have jurisdiction and,
- Only one court has the jurisdiction in relation to any one nuclear incident in the State in which nuclear accident occurs.

Objective of this principle is to create legal certainty and to make all kinds of compensation claims easier for the victims without the possibility of seeking a State or competent court to be able to submit their claims.

III. ANALYSIS AND DISCUSSION ON THE CONCEPTS OF STATE RESPONSIBILITY AND STATE LIABILITY IN THE CONTEXT OF A NUCLEAR ACCIDENT OR RADIOLOGICAL EMERGENCY WITH TRANSBOUNDARY EFFECTS

III.1 Background: State Responsibility in the Practice of the International Law Commission

³² Schwartz, J., supra note 27, p. 41.

³³ *Ibid*, p. 41.

³⁴ *Ibid*, p. 41.

³⁵ Stoiber, C., et al., supra note 17, p.115.

The concept of state responsibility and liability had formerly been considered by the international (academic) community, when, as a result of the efforts made by various forums of international policy-makers and actors, the International Law Commission (ILC)³⁶ adopted a quasi-treaty text designated as ILC's Draft Articles for International Wrongful Acts on the issue of state responsibility.³⁷ The ILC acknowledged the traditional state-to-state approach without scrutinising non-state actors such as individuals or non-governmental organisations or illegal terrorist groups. A key question in this respect is whether under international law a state is responsible for damages or injuries incurred to another state and, if so, to what extent it bears international responsibility for its actions.³⁸ According to the ILC, every internationally wrongful act of a state entails international responsibility of that state.³⁹ A wrongful act is defined as State conduct consisting of an action or omission is; a) attributable to the State and b) constituting a breach of an international obligation of that State.⁴⁰

Generally, under public international law, if an act of any state has been wilfully and maliciously committed, or that act would have been committed in a gravely negligent manner and implies a breach of an international obligation, these facts (causal relation between cause and the result of a conduct imputable to the state as damage or harm⁴¹) would entail that state responsibility obtains, therefore, compensation and reparations shall supervene pursuant to the legal regulation of state liability.⁴² So, after this topic, firstly concepts of state responsibility and liability shall be analysed and difference between these two terms shall be scrutinised from the view of international law and then under nuclear law. And secondly, states' responsibility and liability shall be tried to determine under international nuclear liability conventions' regimes.

III.2 The Concept of State Responsibility

III.2.1 The Concept of State Responsibility in General

According to Brian D. Smith, "State responsibility represents the consequence of, and sanction against, non-performance by states of their international obligations."⁴³ Subjective and objective elements are two elements that are relevant for state responsibility. The first one mentioned, the subjective element means that the state must be actor of violation of international obligation. The second, objective element means that there must be a breach of an international obligation. When one state breaches international obligation, the other state's rights are bothered.⁴⁴ And according to aforementioned author, 'it is not subjective culpa but simply fact of violation of international law that serves as the basis for state responsibility. Only fault for breaching of an

³⁶ The International Law Commission was established by the General Assembly of United Nations, in 1947, to undertake the mandate of the Assembly, under article 13(1)(a) of the Charter of the United Nations to "initiate studies and make recommendations for the purpose of ... encouraging the progressive development of international law and its codification".

³⁷ Kecskés, G., (2008), "The Concepts of State Responsibility and Liability in Nuclear Law", *Acta Juridica Hungarica*, No 49, No 2, Akadémiai Kiadó, Budapest, pp. 221-252

³⁸ Jabbari-Gharabagh, M. (1999), "Type of State Responsibility for Environmental Matters in International Law", *Revue Juridique Thémis*, p.63.

³⁹ The International Law Commission (UN) (2001), Draft Articles on Responsibility of States for Internationally Wrongful Acts, G.A. Res. 56/83, U.N. Doc. A/RES/56/83, annex art. 1.

⁴⁰ *Ibid.*, at art. 2.

⁴¹ Draft Articles, supra note 39, at art. 2.

⁴² Kecskés, G., supra note 37, p. 223.

⁴³ Smith, B. D., (1988), "State Responsibility and the Marine Environment", *Oxford University Press*, p. 6.

⁴⁴ *Ibid.*, p. 9.

obligation is required.⁴⁵ Therefore, he distinguishes two types of responsibilities: objective responsibility and fault responsibility. Supporters of objective theory of state responsibility describe that just a violation of international law is relevant for the existence of state responsibility, regardless of the fault of the state. The ground for state responsibility depends on the content of an international obligation.

For a better understanding of the difference between the objective responsibility and fault responsibility it is also important to make a distinction between 'primary' and 'secondary rules'. 'Primary rules' are different rules of international law which impose various obligations upon the subjects of international law. A breach of those obligations may cause the state responsibility. 'Secondary rules' determine the consequences of these breaches and deal with the issues of responsibility and liability. A requirement of fault in the subjective sense may arise only out of the primary obligations involved; culpa is not a condition imposed by 'secondary' rules of state responsibility common to all international obligations.⁴⁶

The international responsibility of a state manifests an 'objective' character, "in the absence of any specific requirement of a mental element in terms of primary obligation, it is only the act of a State that matters, independently of any intention" – pursuant to the ILC.⁴⁷ Hence, the ILC had declared that "State responsibility should be dealt with under secondary rules."⁴⁸

The international responsibility of a state implies its duty to make reparations for the damages, which result from a failure to comply with its international obligations—as it was everlastingly drafted in the 1930 Hague Conference on State Responsibility (and has prevailed thence). The term 'responsibility' was based upon the general rule of international law that states are legally accountable for breaching international obligations imposed on them.⁴⁹

Another principle implied to states' responsibility is the principle of state sovereignty over its territory and natural resources, which is a fundamental and the most important principle of international law in general. Throughout the history states could use their own natural resources in the way they want regardless of the impact to the territory of another state. It is clear that this principle is no longer absolute. The limitation of territorial sovereignty is the obligation of states "not to act as to injure the rights of other states." Such activities of the state that cares for other countries reflects also the principle of good neighbourliness as well as the principle of state responsibility for causing the environmental damage in case that damage occurs.⁵⁰ Principle 21 of the Declaration adopted by the 1972 Stockholm Conference on the Human Environment⁵¹ has also formulated principle that no state may allow its territory to be used in a way to cause environmental damage:

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or

⁴⁵ *Ibid*, p. 15.

⁴⁶ *Ibid*, p. 16

⁴⁷ The International Law Commission (UN) (2001), *Yearbook of the International Law Commission*. New York, vol. 1, p. 249.

⁴⁸ *Ibid.*, p. 106.

⁴⁹ Kecskés, G., *supra* note 37, p. 225.

⁵⁰ Kralj, L. and An Cliquet (promotes), (2011), *State Responsibility and the Environment*, Ghent University, p. 6.

⁵¹ Conference on the Human Environment, Stockholm, Swed., June 5-16, 1972, *Report of the United Nations Conference on the Human Environment*, Principle 21, U.N. Doc. A/CONF.48/14/REV.1 (Jan. 1, 1973) (hereinafter *Stockholm Declaration*).

control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.⁵²

This Principle was repeated by Principle 2 in Declaration on Environment and Development, adopted by the 1992 Conference held in Rio de Janeiro.⁵³ Those were two most important soft-law instruments that have dealt with state responsibility for transboundary harm. Furthermore, those principles are now included in various other binding and non-binding international instruments. For example, it can be found in the relevant provisions of Article 194 (2) of the Convention on Law of the Sea (1982)⁵⁴ and the Convention on Biological Diversity in Article 3.⁵⁵

Consequently, the rules of state responsibility stipulate and determine whether international obligations have been breached, moreover, an internationally wrongful act entailing state responsibility through the breach of an obligation has to be followed by sanctions (such as restitution, reparation, compensation, therefore, as to the ensuing consequences, no relevant difference between the notions of responsibility and liability obtains).⁵⁶

On the other hand, the term of “state liability” does not necessitate that the facts of the case of an internationally wrongful act of a state obtains. Subsequently, every act of a specific state, regardless of its possible legal grounds, can effectuate the liability of the state irrespective of the fact whether it has caused transboundary damages.⁵⁷ However, traditional principles of state responsibility may merge with state liability that arises from lawful acts, particularly in instances such as ultra-hazardous activities, in the case of which states need to proceed with such a strict standard of care that for all practical purposes they will be “responsible” for any activity leading to (transboundary) harm.⁵⁸

III.2.2 The Concept of State Responsibility in the Area of Nuclear Law

Under international law, states are responsible for damages arising from the nuclear installations operating under their authority or control, because the absolute liable operator does not function independently of governmental control.⁵⁹

Gábor Kesckés points out that; ‘the issue of state responsibility for nuclear damages and for breaching obligations remains in the background compared to the concept of state liability in the area of nuclear law, its reasons are multifarious:

⁵² Stockholm Declaration, Principle 21

⁵³ Conference on Environment and Development, Rio de Janeiro, Brazil, June 3-14, 1992, Report of the United Nations Conference on Environment and Development, vol. I, Principle 2, UN Doc. A/conf.151/26/REV.1, January 1, 1993 (hereinafter Rio Declaration)

⁵⁴ United Nations Convention on the Law of the Sea, December 10, 1982, 1833 UNTS 3, art. 194 (2),

⁵⁵ Convention on Biological Diversity, June 5, 1982, 31 ILM 822 (1992) art. 3; Kralj, L. And An Cliquet, supra note 50, p. 7.

⁵⁶ Kecskés, G., supra note 37, p. 226.

⁵⁷ de la Fayette, L. (1992), Towards a New Regime of State Responsibility for Nuclear Activities. *Nuclear Law Bulletin*, No:50, NEA, Paris, p. 21.

⁵⁸ See Hunter, D., et al.(1996), *United Nations Environment Programme. Concepts and Principles of International Law: An Introduction*, New York,

⁵⁹ See de la Fayette, supra note 57.

Firstly, nuclear accidents and radiological emergencies with transboundary effects are not direct consequences of breaching obligations committed intentionally by states on the whole (e.g., 1986 Chernobyl disaster).

Secondly, in addition to the previous paragraph, the damages and losses including the loss of human life and huge amounts of damages prevent the states from breaching obligations framed by international instruments. As a rule, the financial consequences (determined under conventions and other instruments) of a nuclear accident or radiological emergency caused by a state by breaching an obligation are severe for states. It is also for that reason that the relevance of state responsibility falls behind the relevance of state liability, when the cause of contingent damages is a lawful act as a rule.

Thirdly, ‘liability’ is classified (fault-based, strict or absolute, exclusive, vicarious, residual, etc.) with regard to the extent of the negligence of a state that effected damages. In the case of state responsibility, similar distinction cannot be made, since a state either committed or did not commit an internationally wrongful act that substantiate claims for reparation. In the latter case, the state shall not be responsible for its action.

Finally, while ‘liability’ is circumscribed within a refined system defined at an international level (such as the Paris and Vienna Conventions on liability, etc.), the circumscription of ‘responsibility’ has been accomplished in a scattered manner in various separate international instruments.⁶⁰ Two of these instruments were the Convention on Early Notification of a Nuclear Accident⁶¹ and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency⁶². ‘These instruments were adopted in response to the Chernobyl accident in 1986, so that they required the contracting states to notify early and immediately the potentially affected states and IAEA about the accident, which needs to be followed by assistance on the part of the installation state or of the responsible state. The new global recognition of nuclear danger (an accident somewhere is an accident everywhere) motivated the states to establish obligations under two separate conventions concerning prompt and necessary arrangements in the event of a nuclear accident or radiological emergency.’⁶³

It must be expressed that, the obligation of notification which is established in the Article 2 of the Early Notification Convention⁶⁴ is regardless of the damages or/and losses caused by the emergency or incident in case of the negligence of notification.

As for the Assistance Convention⁶⁵, the definition of state responsibility is designated to provide an international framework for the comprehensive direction, control, coordination and supervision of the assistance and for the promotion of prompt assistance by states and IAEA in the event of a nuclear accident or radiological emergency.

As opposed to the Early Notification Convention, the Assistance Convention applies the term of ‘responsibility’. It expressly stipulates that the direction and control of assistance are the

⁶⁰ Kecskés, G., *supra* note 37, p. 227.

⁶¹ Convention on Early Notification of a Nuclear Accident (1986) (hereinafter “Early Notification Convention”), IAEA Doc. INFCIRC/335, 1439 UNTS 275.

⁶² Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) (hereinafter Assistance Convention), IAEA Doc. INFCIRC/336, 1457 UNTS 133.

⁶³ *Ibid*, p. 229.

⁶⁴ See the Article 2 of the Early Notification Convention.

⁶⁵ See the Article 3 of the Assistance Convention.

duties (the relevant responsibility) of the state concerned, since in the absence of that rule, the international responsibility of a state could not be established.⁶⁶

From the point of view of the Convention on Nuclear Safety, states have subsidiary or secondary responsibility which is overshadowed by the responsibility of the licensee. It can be seen from the Paragraph 2 of the Article 21 of the CNS:

“If there is no such licence holder or other responsible party, the responsibility rests with the Contracting Party which has jurisdiction over the spent fuel or over the radioactive waste.”

Opposed to the concept of State responsibility, responsibility of the licence holder is briefly defined under Article 9:

“Each Contracting Party shall ensure that prime responsibility for the safety of a nuclear installation rests with the holder of the relevant licence and shall take the appropriate steps to ensure that each such licence holder meets its responsibility.”

To sum up, doctrinally, for the establishment of the responsibility of a state, four basic elements need to be available.⁶⁷ Thus, if the following criteria are uniformly attained in the event of a nuclear accident or radiological emergency causing damages and losses, the state shall be responsible for their transboundary effects, which supervene in the territory of another state. All of the following criteria should be construed in line with the general rules of public international law and with the legally non-binding rules of ILC’s Draft Articles.⁶⁸

“*Criterion 1:* Transboundary environmental damages or losses must result from a violation of international (nuclear) legal instruments.⁶⁹ The damages or losses must be direct consequences of a nuclear accident or radiological emergency. Accordingly, the causality between the accident or emergency (cause) and the damages or losses (effect) can be established. External influences are not admitted to interfere so that the responsibility of a state can be applicable.”⁷⁰

Criterion 2: A state is responsible both for its respective activities and for the activities of private corporations or individuals under its authority or control. Thus, even if a state is not polluting directly, the state can still be held responsible for the failure to stop or control pollution by other entities. According to this rule, states may be held responsible for the failure to enact or enforce the necessary environmental law, to terminate dangerous activities, or, to sanction violations.⁷¹

Criterion 3: No justifying circumstances are admitted, such as consent by the affected state or an intervening cause, such as an act of God (*vis major* or *force majeure*). That criterion is not so relevant under nuclear law, because of the extreme contingency of damages, so the affectedness of a state in whose territory the transboundary effects appear is a considerably rare status quo (and that kind of affliction is scarcely ever intentional).⁷²

⁶⁶ Kecskés, G., *supra* note 37, p. 231.

⁶⁷ For these criterions, see Kecskés, G., *supra* note 37, pp. 232-233.

⁶⁸ *Ibid*, p. 232

⁶⁹ The provisions of Article 1 of the ILC’s Draft Articles. See further Crawford, J. (2002), *The International Law Commission’s Articles on State Responsibility, Introduction, Text and Commentaries*. Cambridge, pp. 77-80.

⁷⁰ Kecskés, G., *supra* note 37, p. 232.

⁷¹ *Ibid*, p. 232.

⁷² *Ibid*, p. 232; The provisions of Article 10, Article 16–18, Article 20 and Article 23 of the Draft Articles. See further Crawford: pp. 116-120, 148-158, 163-165 and 170-173.

Criterion 4: Damages must be “significant”, which may entail serious problems of proof and quantification. In the area of nuclear law, damages may affect individuals, property and the environment in several states. Damages caused by radiation may not be immediately and easily recognised. Furthermore, even at nuclear power plants, at which the highest safety standard has been guaranteed, the occurrence of nuclear and radiological accidents cannot be completely excluded. That constitutes the unique feature of transboundary effects caused by nuclear accidents or radiological emergency.⁷³

The term ‘state responsibility’ appears in a significant but subsidiary way within the nuclear scope. Significant, because in the previous decades, states have recognised that they carry responsibility at international level too, and have also concluded international agreements on supplementary compensation if the means of the operator are exhausted.⁷⁴

III.3.1 The Concept of State Liability in General and Difference Between State Responsibility and State Liability

The term of ‘liability’ is applied in cases where damage or loss was incurred as a result of an activity that had been conducted neither in breach of an international obligation, nor in breach of the states’ due diligence obligations (lawful act that involves risks and transboundary damage).⁷⁵

As ILC’s codification work (Draft Articles) clearly demonstrates, a State can be liable even for acts that are perfectly lawful, but in the event of injurious consequences, they can entail liability.⁷⁶ Differently from State responsibility, international State liability situations may ensue from both lawful and unlawful acts.

The main distinctive characteristics, which are markedly separated in pursuance of the delimitation of the concept and content of these regimes, consist in the followings:

- a) In a general context, the term of ‘responsibility’ encompasses the omission of acts that cause damage attributable to a State under international law and these acts (or omissions) constitute severe breaches of obligations.
- b) State liability entails adequate compensation for damage suffered by victims (liability for pecuniary compensation obtains, even if inadequate resources for compensation are available at the operator’s disposal). Rules of State liability for harmful and transboundary consequences of e.g. nuclear activities are construed in a broad scope in comparison with the restricted field of State responsibility. Accordingly, rules of liability for acts not prohibited by international law are irrespective of whether the activity was faulty or lawful, they emphasise the harm, rather than the conduct.⁷⁷

The difference between state responsibility and state liability is that liability is based on risk created. The reasoning behind this claiming is that “state creating risk and benefit from the risk shall also incur the consequences in case harmful injury occurs even for lawful acts.”⁷⁸ Karl

⁷³ Kecskés, G., *supra* note 37, p. 233.

⁷⁴ Pelzer, N., (2007), *Modernizing the International Regime Governing Nuclear Third Party Liability*. Montpellier, p. 10. ; *Ibid*, p. 233.

⁷⁵ Kecskés, G., *supra* note 37, p. 233.

⁷⁶ The International Law Commission (UN) (1980), *Yearbook of the International Law Commission*. New York, vol. 2, p. 246.

⁷⁷ Kecskés, G., *supra* note 37, pp. 233-234.

⁷⁸ Hacket, G. T., (1994), *Space debris and the corpus iuris spatialis*, Edition Frontieres, p. 156.

Zamanek poses a question why should states be strictly liable for activities carried out, not by themselves but by private person on their territory. He notes that the consequence of their sovereignty argues against any liability besides their responsibility for unlawful act to control person on their territory. Answer to that question is that the national economy of the state benefits from that activity in general and the government through revenues in particular. Therefore, the states should compensate damage to another state which does not benefit from that activity. The private persons who economically benefit from those activities should carry liability in a form of civil liability. Only in case of 'partial or total default' state should have subsidiary liability. For example, in case of damage resulting from hazardous activities, state responsibility will be entailed only when rules on international law establish obligatory standard of safety and state on whose territory the "activities is carried out has failed to impose or to control, although it is internationally bound by the rules."⁷⁹ States do not have to wait until the damage occurs to invoke the responsibility. Damage will be just a consequence of neglect and neglect itself gives rise to a state responsibility.⁸⁰

Regarding the relationship between state responsibility, state liability and civil liability, Julio Barboza describes the international practice and states that it has developed in "three different lines".⁸¹ First one is that there is no state responsibility or state liability. The reason for that there are many international treaties on hazardous activities that focus solely on civil liability and establish no duty for prevention on the state, therefore no state responsibility can be invoked for the breach of a treaty. Those treaties impose no state responsibility subsidiary to operator's liability. He provides the example for his statement in Convention on Civil Liability for Damage resulting from Activities Dangerous to the Environment.⁸² The second practice is international "*sine delicto*" liability. There are two types of that state liability. First type is that the state is primarily liable, as mentioned in the Convention on International Liability for Damage Caused by Space Objects⁸³. Meaning, when the state liability is invoked there is no possibility for civil liability to be invoked at the same time. Here exists only the liability of the launching state. The second type is that state liability is subsidiary to operator's liability, for instance, Paris Convention and Vienna Convention. This represents the form of state liability "*sine delicto*" because state pays the sum for compensation instead of the operator or his insurance. Third practice is that the state has subsidiary responsibility for wrongful acts. He gives the example of Convention for Regulation of the Activities on Antarctic Mineral Resources (CRAMRA)⁸⁴ where the operator is liable for certain damages. For other damages there exists the responsibility of a sponsor state.⁸⁵

III.3.2 The Concept of State Liability in the Area of Nuclear Law

⁷⁹ Zamanek, K., (1991), 'State Responsibility and Liability', *Environmental Protection and International Law*, Graham & Trotman Limited, p. 195

⁸⁰ *Ibid*, p.195

⁸¹ Kralj, L. And An Cliquet, *supra* note 50, p. 11.

⁸² Convention on Civil Liability for Damage resulting from Activities Dangerous to the Environment, June 21, 1993, 32 ILM 480 (Lugano Convention)

⁸³ UN, Convention on International Liability for Damage Caused by Space Objects, (1971) (hereinafter Space Liability Convention), UN Res. 2777 (XXVI).

⁸⁴ Convention on the Regulation of Antarctic Mineral Resource Activities, November 25, 1988, 27 ILM 859.

⁸⁵ Barboza, j. (1995), "Draft Principles Relating to Liability and Compensation for Damages Arising From the Transboundary Movement of Hazardous Wastes", in Al-Nauimi, N. and Meese, R. (eds), *International legal Issues Arising under United Nations Decade of International Law*, The Hague, Nijhoff, pp. 233-235.

During the debates and the legislation process within the framework of the Sixth Committee of the UN General Assembly in the 1990s, several possible options were dealt with in the work of the Committee based upon the idea that liability ensues from significant transboundary harm and gives rise to liability for reparation.⁴¹ It was generally acknowledged that the residual liability of the State was essential in situations in which the primarily liable operators did not have sufficient financial resources to provide adequate compensation to the victims of injuries caused by transboundary damages.⁸⁶ And, according to the objectives of ILC, residual (subsidiary) and joint or multiple liability shall govern the regime in which States compensate victims not satisfied by the operator (after the exploitation of the insufficient subsidiary compensation fund) on the basis that the State concerned has failed to meet its obligations and a causal relation between that failure and the damage caused obtains.⁸⁷

Within the context of the nuclear liability, the issue of State liability hasn't been briefly formulated. However, it can be seen that some steps have been taken to circumscribe the liability of a State under the section of obligations. For instance, under the provisions of 1963 Brussels Supplementary Convention, a State is not legally liable for the damage, but as opposed to this unambiguous fact, it has the duty to compensate the victims through its public funds and resources regardless of the fact whether it carried out activities that could cause damages.⁸⁸ Despite the fact that term "State liability" was not explicitly stated in the international conventions, it was frequently alluded to the scope of the nuclear liability regime during the evolution of international civil liability.

At this juncture, to comprehend the concept of State liability in nuclear law clearly, difference between State liability and civil liability must be known. "From a highly general viewpoint, State liability consists in a liability for damages caused to another State according to international law, while civil liability implies the liability of a natural or legal entity for damages caused to another natural or legal entity on grounds of national law.

The concerned regimes basically converge, since 'State liability' arises from transboundary effects, which create inter-states legal relations, in which the rules pursuant to special, supplementary principles and provisions differ from the rules of civil liability regimes based upon the distinction between State and civil liability. For instance, civil liability regimes are divided into separate branches pursuant to the classification of liability, whereas, within the scope of (*residual*) State liability, similar classification is considered to be redundant (en passant, the so-called *vicarious liability*⁸⁹ could be mentioned in re State liability)."⁹⁰

III.4 Analysis of the Concept of State Liability under International Liability Convention Regimes

III.4.1 The Concept of State Liability under the Regime of Paris Convention

If a nuclear accident occurs in the territory of a State Party to the Paris Convention and damage or loss is unanimously caused in another State, which is also a Party to Paris Convention, the provisions of the Paris Convention will be applicable.

⁸⁶ Kecskés, G., *supra* note 37, p. 234.

⁸⁷ See the International Law Commission (UN) (1994), *Yearbook of the International Law Commission*, vol. 2, pp. 155-158.

⁸⁸ See Brussels Supplementary Convention, *supra* note 8.

⁸⁹ Vicarious liability is a law term used in US nuclear liability regime to define the indemnity of the US Government for nuclear liability paralleled by the system of private insurance.

⁹⁰ Kecskés, G., *supra* note 37, p. 240.

In accordance with the provisions of the Paris Convention, liability is channelled to the operator (Article 6) and the liability for compensation shall be covered by insurance or other financial security (Article 10), while “no other person shall be liable for damage caused by a nuclear incident” (Article 6). And principles of “legal channelling” and “strict & absolute liability” which are accepted in the Paris Convention requires that, liability which channelled directly to the operator is irrespective of the operator’s fault. However, liability of the operator is counterbalanced with principles which limit liability with time and amount so that submission of claims for a compensation because of damage or loss caused from a specific nuclear incident is limited.

Within the purview of the Paris Convention, the rudimentary purpose was the ensure that in the event of a nuclear accident in a State, adequate compensation shall be made available for victims in the Installation State as well as in affected States. That mechanism does by no means demonstrate the tangible duty or obligation of States, however, States have assumed responsibility to establish an adequate legal regime (in accord with the norms of international law) by means of the stipulation of the availability of compensation for victims residing within and outside the territory of the Installation State. The Paris Convention *per se* does not contain provisions from which the later codified conception of State liability could be generated.⁹¹

III.4.1.1 The Brussels Supplementary Convention

As a result of the attempts to increase the monetary limits of liability comparatively to the potential magnitudes of nuclear accidents, some of the members of the Paris Convention adopted the 1963 Brussels Supplementary Convention and complemented the system of the Paris Convention.

Within the purview of the Brussels Supplementary Convention, State liability is incorporated into the liability regime governed by the Paris Convention, because the Signatories of the Brussels Supplementary Convention⁶⁹ recognised that the liability of the operator limited in time and the amount of compensation under the Paris Convention would not be adequate.⁹²

In Article 3 of the Brussels Supplementary Convention, the signatory states agree to cover losses caused by nuclear accidents to an amount of 120 million currency units per accident.

The compensation should take place as follows:

- Up to 5 million currency units (the exact amount must be fixed by the legislation of the signatory states), the damages must be covered by the licensee who is liable for the accident and who should have insurance to cover this amount; (The first tier)
- Between the amount to be paid by (the insurance of) the licensee and 70 million currency units, the state in which the nuclear power plant that caused the accident is located must pay the damages; (The second tier)
- Between 70 million and 120 million currency units, all the signatory states will contribute to the compensation of the damages, according to a division that is provided in Article 12 of the convention of Paris.⁹³ (The third tier)

⁹¹ *Ibid*, pp.242-243.

⁹² *Ibid*, p. 243.

⁹³ Faure, M., (1995), Economic Models of Compensation for Damage Caused by Nuclear Accidents: Some Lessons for the Revision of the Paris and Vienna Conventions, *European Journal of Law and Economics*, vol. 2, pp. 21-43.

‘First tier (of this system) determines the operator’s maximum financial liability, so that compensation claims are covered by insurance or other financial security according to the operator’s limited compensation amount. The second tier requires the Installation State, in the territory of which the operator of the concerned nuclear power plant is situated, to make public funds available under national law. Thus, at the level of the second tier under an unlimited legal liability regime, the amount of compensation supplied by the operator will be supplemented by public funds secured by the Contracting Party. The third tier draws on international public funds made available by the States pursuant to Paragraph (b) of Article 3 and Article 12 of the Brussels Supplementary Convention. The three-tier mechanism imposes absolute legal liability on the operator, which means that no demonstration of a fault or negligence is necessary, therefore, no instrument concerns the exclusive liability of States in the scope of nuclear law, but exclusive jurisdiction is granted to courts of the Installation State.’⁹⁴

Hence, under the Paris-Brussels system, if the amount of the operator’s liability does not cover all the damage or the amount at the operator’s disposal is not sufficient for the full-scale compensation as a consequence of the absolute liability of the operator, firstly, the Installation State, secondly, all the Contracting Parties contribute certain amounts up to a fixed limit according to the three-tier compensation scheme, nevertheless, the insurance or the financial security of the operator has prior obligations.’⁹⁵

III.4.2 The Concept of State Liability under the Regime of Vienna Convention

For the reason that the Paris and Vienna Conventions include similar fundamental principles related to nuclear liability just as legal channelling of exclusive liability, limitation of liability in time and amount and exclusive jurisdiction, the concept of liability in these two conventions is identical.

III.4.2.1 The 1988 Joint Protocol Relating to the Application of the Vienna And Paris Conventions on Liability for Nuclear Damage

As stated above, states and international organizations have been initiated to amend the international instruments and create newer ones regarding nuclear liability after 1986 Chernobyl Accident. One of these instruments was the Joint Protocol.⁹⁶

The Joint Protocol has built a bridge between the two conventions on liability for nuclear damage in that the operator of a nuclear installation situated in the territory of a party to either the Vienna or the Paris conventions shall be liable in accordance with those conventions for nuclear damage suffered in the territory of a party to the other convention. This reciprocity principle means that the application of both conventions has been enlarged by the territory of the parties to the other convention.⁹⁷

III.4.2.2 The 1997 Protocol to Amend the Vienna Convention

⁹⁴ Kecskés, G., *supra* note 37, p. 244.

⁹⁵ *Ibid*, p. 243.

⁹⁶ See *supra* note 11.

⁹⁷ Faure, M., *supra* note 93, p. 25.

After the signature of the 1988 Joint Protocol (in 1988), the IAEA Working Group was set up (in 1989 for the purposes of the examination and revision of the civil liability regimes) simultaneously with the IAEA Standing Committee on Liability for Nuclear Damage with the comprehensive mandate to revise the regime of international liability for nuclear damage, including international civil liability, international State liability and the relationship between international civil and State liability.⁹⁸ And, in 1997, the Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage (hereinafter the 1997 Protocol) which extended the scope of “nuclear damage” and extended the possible monetary and time-wise limit of liability of the operator.

Since the Vienna regime was substantially revised in 1997, the problematic anomalies no longer influenced the behaviour of states in the intentional nonattendance from this regime.⁹⁹

III.4.2.3 The 1997 Convention on Supplementary Compensation for Nuclear Damage

In 1997, The Convention on Supplementary Compensation for Nuclear Damage (CSC) had been also adopted under the auspices of the IAEA and it entered into force on 15 April 2015. The CSC, which for a long time was referred as the “Umbrella”, is intended to offer a worldwide supplement to the amounts provided for under national law, whether these are based on the Vienna Convention or the Paris Convention, or comply with a number of criteria that guarantee equivalence, which are listed in the Annex. This formulation has been called “grandfather clause”.¹⁰⁰

The CSC achieves legal certainty by requiring each member country to have national law on nuclear liability that is based on the Paris Convention, the Vienna Convention or the Annex to the CSC and that incorporates the provisions in the CSC on jurisdiction, compensation and the definition of nuclear damage.¹⁰¹

The CSC regulates, similarly to the Brussels Supplementary Convention, the tier-based system, with the difference that the first (private insurance – SDR 300 million) and second (member countries contribution – will grow as the use of nuclear power to generate electricity increases) tier of compensation have been established by the CSC (Article III), while the CSC does not require the distribution of the third tier.¹⁰²

Ben McRae answers the question whether the CSC addresses the issue of State liability or not; “The CSC is clear that it does not affect the rights and obligations of member countries, if any, under the general rules of public international law. All of the rights, obligations and responsibilities of a member country under the CSC arise solely from its adherence to the CSC and, in some cases, to the Paris Convention, the Vienna Convention or the Joint Protocol.”¹⁰³

III.5 Current Nuclear Liability Regime in Turkey

Currently, there is no national nuclear liability law enacted in Turkey. The fact remains that, there has been a draft law under discussion on the level of national governmental authorities.

⁹⁸ Lamm, V. (1999), *The Reform of the Nuclear Liability Regime*, *Acta Juridica Hungarica*, No 40, Akadémiai Kiadó, Budapest, p. 170.

⁹⁹ Kecskés, G., *supra* note 37, p. 247.

¹⁰⁰ Desart, R.D. (2005), *supra* note 25, p. 9.

¹⁰¹ McRae, B., *supra* note 20, p. 18.

¹⁰² Kecskés, G., *supra* note 37, p. 248.

¹⁰³ McRae, B., *supra* note 20, p. 34.

Additionally, Turkey is a party to the Paris Convention as amended by 1964 and 1982 Protocols and enacted Paris Convention as a national law. According to Article 90 of the Constitution of Republic of Turkey, ‘international agreements duly put into effect have the force of law.’¹⁰⁴ Hence, competent courts of Turkey will apply provisions of the Paris Convention in case of a nuclear accident or radiological emergency with transboundary effects. However, Turkish national law will be applicable in cases where operator is not held liable due to the Paris Convention.¹⁰⁵

Turkey is also party to the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention, but not a party neither to the Brussels Supplementary Convention nor to the Convention on Supplementary Compensation. Thus, main liability principles of the Paris Convention will be applicable in the extent of international law.

IV. CONCLUSION

Throughout this paper, in light of the all relevant legal issues, it is pointed out that, states’ responsibility or liability is formed in direction to their acts. First of all, by referring to the ILC’s Draft Articles, it is shown that, State responsibility may only arise out of wrongful acts of one State, while international State liability situations may ensue from both lawful and unlawful acts. Then, positions of the concepts of state responsibility and state liability in the area of nuclear law has been scrutinised and elements of the state responsibility has been demonstrated. And in the second phrase, concept of state liability has been analysed under international liability convention regimes.

As it can be seen, nuclear liability regime has evolved collaterally with evolution of needs of the international ‘nuclear’ community and with bitter fruits of the nuclear accidents or radiological emergencies with transboundary effects occurred. Especially, in the period after Chernobyl, it became unambiguous that a civil liability system (the Paris and Vienna regimes) based upon the primary liability of the operator cannot be maintained in itself by reason of the high amount of damages to be paid for the victims of an accident or emergency involving transboundary effects.¹⁰⁶ In order to solve this problematique, miscellaneous legal or financial instruments just as national or international public funds, extending liability limits in time, liability insurance pools or other means of financial security and so on have been initiated to establish.

Despite all these efforts, ‘the experience of Fukushima Daiichi Accident¹⁰⁷ occurred on 11 March 2011 shown how inadequate the international liability regime is. Operators in Japan, which is not a party to any of the international agreements, were required, according to the World Nuclear Association, “to provide a financial security amount of 120 billion Japanese yen (\$1.4 billion).” Within weeks of the accident, the Japanese government moved to create a state-backed pool to insure the industry with contributions from operators of nuclear reactors and the government. The government committed to an initial share of \$62 billion. Thus, the \$2 billion figure that the international liability regime is limping toward would have been blown away by any Fukushima-like accident.’¹⁰⁸

¹⁰⁴ for detailed information, see https://global.tbmm.gov.tr/docs/constitution_en.pdf

¹⁰⁵ Karauz, A.K., (2014), Nükleer Santral İşletenin Hukukî Sorumluluğu, *Nevşehir Bar Review*, vol.1, p. 30

¹⁰⁶ Kecskés, G., supra note 37, p. 252.

¹⁰⁷ For detailed information about Fukushima Accident, see <http://www.world-nuclear.org/info/safety-and-security/safety-of-plants/fukushima-accident/>

¹⁰⁸ Cooper, M. (2011), “Nuclear liability: The market-based, post-Fukushima case for ending Price-Anderson”, *Bulletin of the Atomic Scientists*, available at URL <http://thebulletin.org/nuclear-liability-market-based-post-fukushima-case-ending-price-anderson>

Consequently, it can be seen that current international liability regimes which do not incorporate states' liability directly and effectively to their structure are exposed to the danger of facing a nuclear accident with substantial and incalculable transboundary damages. Despite the fact that operator of a nuclear installation is primarily, strictly and exclusively liable for nuclear accident occurred in that installation, in the future states will need to undertake responsibility and/or liability for using public authority to carry out nuclear activities or license their applicants to operate a nuclear power plant or other acts which may result with a nuclear incident or radiological emergency within their territory.

V. REFERENCES

- Adisianya, Anthony. (2009/10), "Different Compensation Systems Under Nuclear Liability Conventions", CELMP Car Review, Vol.14, University of Dundee, Dundee.
- Barboza, Julio, (1995), "Draft Principles Relating to Liability and Compensation for Damages Arising From the Transboundary Movement of Hazardous Wastes", in Dr. Al-Nauimi, Najeeb and Meese, Richard (eds), International legal Issues Arising under United Nations Decade of International Law, The Hague, Nijhoff, pp. 233-235.
- Cooper, Mark, (2011), "Nuclear liability: The market-based, post-Fukushima case for ending Price-Anderson", *Bulletin of the Atomic Scientists*, available at URL <http://thebulletin.org/nuclear-liability-market-based-post-fukushima-case-ending-price-anderson>
- Crawford, James. (2002), *The International Law Commission's Articles on State Responsibility, Introduction, Text and Commentaries*. Cambridge.
- Desart, Roland D. (2005), "The reform of the Paris Convention on Third Party Liability in the Field of Nuclear Energy and of the Brussels Supplementary Convention", *Nuclear Law Bulletin*, No. 75, NEA, Paris, pp. 7-33.
- Faure, Michael, (1995), *Economic Models of Compensation for Damage Caused by Nuclear Accidents: Some Lessons for the Revision of the Paris and Vienna Conventions*, *European Journal of Law and Economics*, vol. 2, pp. 21-43.
- de la Fayette, Louise (1992), *Towards a New Regime of State Responsibility for Nuclear Activities*. *Nuclear Law Bulletin*, No:50, NEA, Paris, pp. 7-35.
- Hacket, George. T., (1994), *Space debris and the corpus iuris spatialis*, Edition Frontieres, p. 156.
- Hunter, David, Sommer, Julia and Vaughan, Scott, (1996), *United Nations Environment Programme. Concepts and Principles of International Law: An Introduction*, New York,
- Jabbari-Gharabagh, Mansour, (1999), "Type of State Responsibility for Environmental Matters in International Law", *Revue Juridique Thémis*, p.63.
- Karauz, Agah. K., (2014), "Nükleer Santral İşleten'in Hukukî Sorumluluğu", *Nevşehir Bar Review*, vol.1, p. 30.
- Kecskés, Gábor, (2008), "The Concepts of State Responsibility and Liability in Nuclear Law", *Acta Juridica Hungarica*, No 49, No 2, Akadémiai Kiadó, Budapest, pp. 221-252
- Kralj, Larisa and An Cliquet (promotes), (2011), *State Responsibility and the Environment*, Ghent University.
- Lamm, Vanda, (1999), *The Reform of the Nuclear Liability Regime*, *Acta Juridica Hungarica*, No 40, Akadémiai Kiadó, Budapest, p. 170.
- McRae, Ben. (2007), "The Convention on Supplementary Compensation for Nuclear Damage: Catalyst for a Global Nuclear Liability Regime", *Nuclear Law Bulletin*, No. 79, Nuclear Energy Agency, Paris, pp.17-36.
- Pelzer, Norbert (1988), "Concepts of Nuclear Liability Revisited: A Post-Chernobyl Assessment of the Paris and the Vienna Conventions, in *Nuclear Energy Law After Chernobyl 98*" in Cameron, P., L. Hancher and W. Kuhn, (eds.), *Nuclear Energy Law After Chernobyl*, Graham & Trotman Limited, London.
- Pelzer, Norbert, (2007), *Modernizing the International Regime Governing Nuclear Third Party Liability*. Montpellier, p. 10.
- Schwartz, Julia. (2003), "Liability and Compensation for Nuclear Damage: The Revision of the Paris Convention and the Brussels Supplementary Convention, *NEA News* 2003, No.21.1, pp. 8 *et seq.*
- Schwartz, Julia, (2006), "International Nuclear Third Party Liability Law: The Response to Chernobyl", *International Nuclear Law in the Post-Chernobyl Period*, OECD, pp. 37-72.
- Smith, Brian D., (1988), "State Responsibility and the Marine Environment", Oxford University Press, p. 6.

Stoiber, Carlton, Alec Baer, Norbert Pelzer and Wolfram Tonhauser, (2003), Handbook on Nuclear Law, IAEA, Vienna, pp. 107-108. (Numbers of states party to the conventions and other changes are updated in the dissertation text)

Zamanek, Karl, (1991), 'State Responsibility and Liability', Environmental Protection and International Law, Graham & Trotman Limited, p. 195

OTHER RESOURCES

Conference on Environment and Development, Rio de Janeiro, Brazil, June 3-14, 1992, Report of the United Nations Conference on Environment and Development, vol. I, Principle 2, UN Doc. A/conf.151/26/REV.1, January 1, 1993.

Conference on the Human Environment, Stockholm, Swed., June 5-16, 1972, Report of the United Nations Conference on the Human Environment, Principle 21, U.N. Doc. A/CONF.48/14/REV.1 (Jan. 1, 1973).

Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986), IAEA Doc. INFCIRC/336, 1457 UNTS 133.

Convention on Biological Diversity, June 5, 1982, 31 ILM 822 (1992) art. 3;

Convention on Civil Liability for Damage resulting from Activities Dangerous to the Environment, June 21, 1993, 32 ILM 480 (Lugano Convention)

Convention on Early Notification of a Nuclear Accident (1986), IAEA Doc. INFCIRC/335, 1439 UNTS 275.

Convention on International Liability for Damage Caused by Space Objects, (1971), UN Res. 2777 (XXVI).

Convention on Nuclear Safety (1994), IAEA Doc. INFCIRC/449, 1963 UNTS 293.

Convention on Supplementary Compensation for Nuclear Damage (1997), IAEA Doc. INFCIRC/567, INFCIRC/567, 36 ILM 1473.

Convention on the Regulation of Antarctic Mineral Resource Activities, November 25, 1988, 27 ILM 859.

Convention Supplementary to the Paris Convention, concluded at Brussels, 31 January 1963, 1041 UNTS 358.

Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention (1988), IAEA Doc. INFCIRC/402, 1672 UNTS 293.

OECD NEA (2008), Compendium on International Legal Instruments in the Field of Nuclear Energy, part 3, p. 68.

Paris Convention on Third Party Liability in the Field of Nuclear Energy of 29th July 1960, as amended by the Additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982, 1519 UNTS 329.

Protocol to Amend the [Brussels] Convention of 31 January 1963 Supplementary to the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy (2004), as amended, available at: www.oecd.nea.org/law/brussels_supplementary_convention.pdf.

Protocol to Amend the [Paris] Convention on Third Party Liability in the Field of Nuclear Energy (2004) (hereinafter "2004 Protocol to Amend the Paris Convention"), available at: www.oecd.nea.org/law/paris_convention.pdf

Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage (1997), IAEA Doc. INFCIRC/566, 2241 UNTS 302; unrevised Vienna Convention: INFCIRC/500.

The International Law Commission (UN) (1980), Yearbook of the International Law Commission. New York, vol. 2, p. 246.

The International Law Commission (UN) (1994), Yearbook of the International Law Commission, vol. 2, pp. 155-158.

The International Law Commission (UN) (2001), Draft Articles on Responsibility of States for Internationally Wrongful Acts, G.A. Res. 56/83, U.N. Doc. A/RES/56/83,

The International Law Commission (UN) (2001), Yearbook of the International Law Commission. New York, vol. 1, p. 249.

Turkish Grand National Assembly, Constitution of the Republic of Turkey, available at URL https://global.tbmm.gov.tr/docs/constitution_en.pdf

United Nations Convention on the Law of the Sea, December 10, 1982, 1833 UNTS 3, art. 194 (2),

US Atomic Energy Commission 1957 (WASH-740): Theoretical possibilities and consequences of major accidents in large nuclear power plants.

Vienna Convention on Civil Liability for Nuclear Damage, (1963) IAEA Doc. INFCIRC/500, 1063 UNTS 266.

World Nuclear Association, "Fukushima Accident", available at URL <http://www.world-nuclear.org/info/safety-and-security/safety-of-plants/fukushima-accident/>