THE URGENCY OF JAPAN TO RATIFY THE 1997 VIENNA CONVENTION ON CIVIL LIABILITY FOR NUCLEAR DAMAGE

(Case Study: Fukushima Nuclear Leakage)

A BACHELOR DEGREE THESIS

By:

MUHAMMAD PIETE ALLAM OTTORIZAL

Student Number: 14410380

INTERNATIONAL PROGRAM

F A C U L T Y O F L A W

UNIVERSITAS ISLAM INDONESIA

Yogyakarta

2019

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Submitted in Partial Fulfillment of the Requirement to Obtain Bachelor's Degree (Tier-1) at Faculty of Law

Universitas Islam Indonesia

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بسم الله الرحمن الرحيم

THESIS PAGE APPROVAL PRE FINAL EXAMINATION

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Defended Before the Board of Examiners

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Tanggal : Januari 14 2019

ang Membuat Pernyataan,

Muhammad Piete Allam Ottorizal

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MOTTO

“The greatest jihad is to battle your own soul,to fight the evil within yourself”

-Prophet Muhammad

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ABSTRACT

In the mid-2015 on March 11th ,2011 Japan was hit by 9.0 magnitude earthquake which triggered tsunami that occurred off the coast of the Pacific Ocean. and the disaster created leakage in Japan nuclear power plant in Fukushima district .It was followed by a small scale to a large scale radiation, which spread not only in Japan territory., but also in another country such as the offshore North America .The impact of the leakage of the nuclear power plant is the radiation occured on a small scale to a large scale. Not just in Japan territory the radiation appears in the another country territory has spread to offshore North America. Furthermore in 2018,a Japanese died because of the radiation from Nuclear power plant leakage. The problem is Japan until does not want to ratify the Vienna convention on civil liability for nuclear damage because Japan government argue that Japan can manage the radiation if Nuclear radiation happens. However,in fact, the radiation spread to North America which impacted to several soldiers in Hawaii who have suffered from radiation. Furthermore, this research tries to analyze the urgency of Japan to ratify Vienna convention and also the challenges or opportunities to perform civil liability Therefore it is very urgent to ratify Vienna convention on nuclear damage 1997. Another way is from IAEA itself It should make the Vienna convention on civil liability for nuclear damage as the main agreement in which all members need to ratify, Therefore the case of Japan could be settled promptly by IAEA (International Atomic Energy Agency) or Japan can ratify this convention directly . The civil liability system arises from the awareness of the public that for every act that is done whether by individual or in a group, that person or group will not be able to escape liability for any loss caused by the act. And then there is no ban in any country to use nuclear energy for peaceful purposes as long as it has passed the testing of nuclear safety.

Keywords: The Vienna Convention on civil liability,Civil liability,Nuclear leakage .

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CHAPTER I

INTRODUCTION

A. Context of Study

Japan is situated in the ring of fire which is susceptible to natural disasters, such as volcano eruptions and earthquakes that trigger a Tsunami. This is because the Japanese plain located to the area where the two plates of the earth meet, the Eurasian Plate and the Pacific Plate. Both meetings cause earthquakes or volcanoes to erupt in the area. It makes Japan as a country which is vulnerable to disasters, especially the Tohoku earthquake on March 11, 2011, that triggered a tsunami that occurred off the coast of the Pacific Ocean, precisely the eastern region of Sendai, Honshu, Japan. A rupture of a subduction zone area was spanning 400 kilometers (km) in length and 200 km in width produced a 9.0 magnitude earthquake, resulting in a series of tsunami over 8 meters (m) tall crashing into the northeastern region of Japan known as Tohoku.[1]

The impact of the tsunami was the occurrence of energy leak nuclear power plant at the Fukushima Daiichi nuclear power plant operated by Tokyo Electric Power Company (TEPCO).[2] The leaks occurred when Japan government pulverize the Nuclear power plant with sea water after that which caused nuclear radiation that spread through air and water mixed with nuclear. The State assumes the obligation to pay for proper remedy or reparation after the violation of International legal obligations or norms and this is considered a consequential

[1] James Gardner Long III" *Independent Unaccountability : The IAEA'S* :"Step Backward" In Regulating International Nuclear Reactor Safety In the Wake Of The Fukushima Diichi Disaster" Suffolk Transnational Law Review,Vol 36 (2013) p156 .

[2] International Atomic Energy Agency (IAEA), *Interim Report (2013-2015) Cooperation between the IAEA and Fukushima Prefecture* (Vienna: IAEA, 2016), pg. 2.

obligation which no longer needs to be doubted because it is already a legal history of inter-state relations. At the International level ,there are various conventions governing civil liability against nuclear losses, two of which could be categorized as pioneers in terms of civil liability for nuclear damage: The 1963 Vienna Convention on Civil Liability for Nuclear Damage ans its revision in 1997.

The impact of nuclear energy leakage is the radiation that occurs on a small scale to a large scale and cause long-term impact on the prefecture and the surrounding prefecture.[3] Compensation problems are experienced by victims accidents like those experienced by Hitoshi Sega who owns a small restaurant that is o near nuclear power plants. He lost hope to get compensation to get it more decent life. He has not received compensation from TEPCO because of compensation for assets Substantial as it has is still in the stage assessment. Conditions due to this event were also experienced by Fumitaka Naito but he stopped demanding compensation for its assets namely the farm in the village of Iitate within 40 km of a nuclear power plant. He said that TEPCO only paid only 14,000 yen per month. This money is very little cannot even afford to pay gas requirements from Fumitaka.[4]

Not just in Japan territory the radiation appeared in another country territory, Radiation from Japan's nuclear disaster in 2011 has spread to offshore North America. Levels of contamination on previously identified sites also increase, albeit low and non-threatening to humans or marine life. Trials of hundreds of samples in the Pacific Ocean confirmed that the Fukushima nuclear

[3] ibid

[4] McNeill, Dr. David. Fukushima Fallout : Nuclear Business Make People Pay and Suffer. Amsterdam: Greenpeace International.2013,pg.34.

plant in Japan continues to leak radioactive isotopes even four years after the disaster, Ken said, Buesseler from Woods Hole Oceanographic Institution[5]. In March 2011, a major earthquake triggered a tsunami which struck the Fukushima nuclear plant, 209 kilometers north-east of Tokyo, causing a nuclear leak and forcing more than 160,000 locals to flee to nearby cities. This is the worst nuclear disaster in the world since Chernobyl in 1986. Last year, Woods Hole reported detectable radiation from about 160 km off the coast of Northern California, and in April radiation was found off the coast of Canada. The findings also confirmed that radiation spread to American waters .the north is not isolated for some locations, but can be detected along an offshore stretch of more than 1,600 kilo meters.[6] And in 2018 Fukushima worker die because contamination of nuclear itself. The ministry had previously ruled exposure to radiation caused the illnesses of four workers at Fukushima and also More than 160,000 people were forced from their homes after the meltdowns at the plan.[7]

While there are several organizations that deal with nuclear issues on a regional or International level, it is the International Atomic Energy Agency (Hereinafter IAEA) which takes role as is the largest and most influential organization. The IAEA is also one of the most prominent agencies in the area of technology and nuclear safety. The agency was created by the United Nations in

[5] http;//www.woodholeoceonographic.com accesed October 18

[6] https://www.cnnindonesia.com/International/20151204121459-134-95977/radiasi-bencana-nuklir-jepang-pada-2011-menyebar-hingga-as *"Radiasi Bencana Nuklir Jepang pada 2011 Menyebar Hingga AS"* accessed maret 10, 2018

[7] https://www.theguardian.com/world/2018/sep/05/Japan-admits-that-Fukushima-worker-died-from-radiation accesed September 11, 2018

1957 in order to monitor and supervise the development of peaceful nuclear energy.[8]

The responsibility of the state is the provisions of International law governing the problem of state responsibility. However, it has not been established until now. Furthermore, it continues until now there is no established, and continue to develop in accordance with the times. International legal experts recognize that state responsibility is a fundamental principle of International law.[9] The basic function of this principle of state responsibility in International law is to provide protection to each country, inter alia, by requiring any offender country to pay compensation to the state or society suffering the loss. Accountability means the obligation to provide an answer which is, a calculation of a thing that happened, and the obligation to provide recovery for the losses that may result. Under International law, state responsibility arises in that it harms other countries.

The act of a country that harms another country, which is the treaty does not violate International law, does not result in the accountability of the state. For example, the act of a state that refuses the entry of a foreign national into its territory does not result in the accountability of that country. This is because the country according to International law has the right to refuse or accept foreign nationals to enter into its territory. State accountability has two meanings. The first sense has a sense of responsibility for the actions of the state that violates the International obligations when has imposed. Next the second understanding is the accountability possessed by the state for violations against foreigners. The State

[8] Emily Benz"Lessons From Fukushima : *Strengthening the International Regulation Of Nuclear Energy*" William and Mary Environmental Law and Policy Review,Vol 37,(2013) P.856 .

[9] M.N. Shaw, International Law, Butterworths, edisi 2, 1986, pg. 466, Ian Brownlie, Principles of Public International Law, 1979, p. 430

responsibility arises as a result of the principle of state equality and sovereignty contained in International law. This principle then authorizes a country to denies the right to claim reparations.[10]

The principle of civil liability arises from a primary International obligation which becomes a principle of a balance between the rights and obligations of a state. Every country with a certain right is also a subject that supports certain obligations as well. This obligation is the other side of the right granted by law. [11]According to Sharon Williams, there are four criteria that can be used to establish civil liability, such as subjective fault criteria, objective fault criteria, strict liability, and absolute Liability. [12]

In the field of Civil Law, the principle of absolute liability (Strict Liability) is one type of civil liability.[13] Civil liability in the context of environmental law enforcement is civil law instruments to obtain compensation and recovery costs environment due to pollution and or environmental destruction. Civil Accountability civil recognizes 2 (two) types of liability that is accountability which requires a proof of the element of error that gives rise loss (fault based liability); and Strict Liability, an accountability without having to be proved to be an element of error, where accountability and immediate damages arise after an act has been committed. According to prevailing academic usage, strict liability is liability without wrongdoing.

B. Problem Formulation

Based on context of the study, the problem formulations of this thesis are:

[10] Malcolm N. Shaw op cit. 541.
[11] Janno lahe "Subjective Fault as a basis of delictual liability"Juridica International ,Vol VI 2001 p125.
[12] M.N. Shaw .,Op.Cit. 430.
[13] Salim HS, 2008, *Pengantar Hukum Perdata Tertulis (BW)*, Sinar Grafika, Jakarta. Pg.45.

1. What is the urgency of Japan to ratify The Vienna convention on civil liability for nuclear damage?

2. What are the challenges and opportunities for Japan to perform civil liability?

C. Research Objectives

Based on the problem Statement, therefore the objectives of this thesis are:

1. To analyse the urgency of Japan ratify The Vienna convention on civil liability for nuclear damage.

2. To elaborate the challenges and opportunities for Japan perform civil liability.

D. Definition of Technical Terms

Nuclear leakage is nuclear fuel that has melted in reactor units 1-3 in Fukushima district Japan and radioactive substances spread by air and the occurrence of hydrogen explosion that caused damage to reactor units 1, 2 and 4. These events are categorized into accident 7 on the scale of INES (International Nuclear and Radiological Event Scale). The INES scale was created by the IAEA in an effort to facilitate consistent communication (such as the Richter scale to measure the strength of earthquakes, the scale of Ines to measure how much nuclear accident) for nuclear safety and significant radiation. The IAEA compares the scale of INES (International Nuclear and Radiological Event Scale) to the Richter scale where the Richter scale measures the strength of earthquakes.[14]

E. Theoretical Reviews

[14] "Fukushima, Chernobyl and the Nuclear Event Scale", in https://www.nei.org/News-Media/News/News-Archives/Fukushima-chernobyl-and-the-nuclear-event-scale, Accesed 29 Maret 2018.

1. Civil Liability in Nuclear Accidents Under International Environmental Law

Civil liability is closely linked with a national obligation to compensate for environmental damage caused by activities or activities in the territory of the state and cause harmful effects[15]. Nuclear accidents take accountability of a country to make improvements. For the case of nuclear accidents which have a very hazardous effect, a civil liability of a country shall adhere to the principle of strict liability and absolute liability. Civil responsibility is closely linked to a condition that the fundamental principle of International law, the State or an aggrieved party becomes entitled to obtain a change loss for the damages. Therefore, the accountability of the state shall be concerned with the determination of on what basis and in what circumstances the State may be deemed to have committed an internationally wrong act.[16]

The civil liability of a state arises as a result of the national ideology and sovereignty contained in International law. This principle then authorizes a country whose rights are violated to prosecute reparations, namely the payment of compensation and restitution to the value of the damages. Any violation of the rights of another country causes the country to be responsible for all its actions under International law. This is actually something that is common in the legal system of the world, where breach of legally binding obligations will incur liability for the offender.[17]

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[15] World Nuclear Association, Ian Hore-Lacy(Author), Cutler Cleveland (Editor Topic), " Civil Liability for Nuclear Damage" and http://www.eoearth.org/article/ , Acces in 20 april 2018

[16] Yudha Bhakti Ardhiwisastra,*Hukum International Bunga Rampai*,Alumni,Bandung,2003,hlm.4

[17] ibid

In International law it has been stipulated that such sovereignty relates to an obligation not to abuse the sovereignty itself, because if a State abuses its sovereignty, it might be accountable for its acts and omissions.[18] By now, the term of state responsibility to date has not yet been firmly stated and is still evolving to find its established and also solid concept. Because still in this stage of development, then as a consequence, the discussion of it is still very confusing today[19].Until today there is no establishment of International legal provisions on state responsibility. Generally what International jurists can argue in analysing state responsibility is only new at the stage of presenting the conditions or characteristics of a country's accountability. Nevertheless International jurists have widely recognized that the responsibility of this country is a fundamental principle of International law.

In International law there are 2 (two) kinds of rules namely, primary rules and secondary rules.[20]

1. Primary rules are a set of rules that defines rights and obligations of the state contained in the form of tracts, customary law or other instruments

Primary legal sources of International law are International Conventions, International Customary, and The General Principles of Law recognized by the states of eradism.

[18] Huala Adolf, 1991, *Aspek-aspek Negara dalam Hukum International*, CV Rajawali, Jakarta, (selanjutnya disingkat Huala Adolf I), pg. 174.

[19] Loc.cit.

[20] Sefriani,2010, *Hukum International*: Suatu Pengantar, PT. Raja Grafindo Persada, Jakarta, pg. 266.

2. Secondary rules are a set of rules that define how and what are the legal consequences if the primary rules are violated by a country. Secondary rules is what is called as the law of state responsibility.[21]

2. Fundamental Principles of a Global Nuclear Liability Regime

In general, the liability conventions have coalesced around several major principles that continue to inform the liability regimes, Those principles are Strict liability : The imposition of liability on a party without a finding of fault**,** Exclusive liability : All liability is referred to operator facility **,**Provision of financial security : Arrangements are made to insure availability of funds to cover liability obligations, Unity of jurisdiction : Jurisdiction is focused, generally, in a single court of the State where the incident occurred, on-discrimination : esquires the equal treatment of an individual or group irrespective of their particular characteristics.[22]And Liability limited in time: The 1960 Paris Convention and the 1963 Vienna Convention prescribe 10 years from the accident as the time limitation to bring claims. The 1997 and 2004 modernized versions of those conventions extend the period to 30 years for personal injury, whereas the 1997 CSC provides 10 years for all types of damage.[23]

3. The Nuclear Damage Compensation Act

Under the terms of Japan's 1961 Nuclear Damage Compensation Act (NDCA), private power providers have no-fault responsibility for nuclear

[21] Id.at. 267

[22] Li wei wei "*Equality and non discrimination under International Human rights law*" The Norwegian Centre for Human Rights Vol 1 (2004) P.7

[23] Stephen G.Burnsa "*Global Nuclear Energy Law and Regulation Symposium* ",Washington University Global Studies Law Review,Vol.11 (2012),p 753.

accidents, with liability capped at 120 billion yen.[24]Beyond that amount, the government may (but is not legally obligated to) shoulder the cost of compensation. In the aftermath of events in Fukushima, it was clear that a large number of people had suffered potentially compensable harms. Less clear was the question of who was eligible for compensation, which harms were compensable, how much proof should be required by those requesting compensation, what administrative structure was best suited to evaluate such proof and pay claims, and what sorts of obligations should be borne by claimants who received compensation. The following Parts will address these issues in succession.[25]

4. Sic Utere Principle

Permanent sovereignty reflects the state's inherent and overriding right to control the exploitation and use of the natural resources, while taking into account the interests of its citizens. The principle is then accommodated in Principle 21 of the Stockholm Declaration stipulating that countries under the UN Charter and International legal principles are sovereign to exploit their natural resources and are responsible for ensuring that activities within their jurisdiction or control do not cause environmental damage to other countries or areas outside the national jurisdiction of a country. The addition of the principle of responsibility for not causing damage to the environment of another country is derived from customary

[24] Eric A. Feldmana " *Fukushima : Catastophe,Compensation, And Justice In Japan*" DePaul Law Review,Vol 62,(2013) p338

[25] Ibid .Eric A. Feldmana.

International law namely the principle of *sic utere tuo alienum al laedas* Utilization (use of property rights with no cause harm to others**).**[26]

5. IAEA Roles

The foundation of the IAEA made the decision to assist Japan is related to several conventions in treaties relating to the rights and duties of member states, in this case Japan. There are 2 (two) conventions that make the IAEA down to assist Japan, namely: (1) Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency; and (2) the Convention on Early Notification of a Nuclear Accident.[27]Where these two conventions are binding rules for all member states when obtaining an event or condition where there is a discrepancy in the development of the implementation of nuclear technology in the country, including Japan which in this case experienced nuclear energy leak at the Fukushima Daiichi nuclear reactor. The Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, states that in nuclear accidents contain concerning the IAEA's involvement in assisting member states that have accidents in the process of production and nuclear development. While in the Convention on Early Notification of a Nuclear Accident, it states that the IAEA should respond promptly to the early warning of each member state if there is a nuclear accident phenomenon.[28]

Under the agreement with the Japanese government, the IAEA formed the International Fact Finding Expert of the Fukushima Mission to search for facts

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[26] Marsudi Triatmodjo, 2000, "*Anatomi Hukum Lingkungan International: Sistem Generik Penyangga Kehidupan Umat Manusia*", *Mimbar Hukum*, 34 (2), Fakultas Hukum Universitas Gadjah Mada, Yogyakarta, pg.135-136.

[27] https://www.iaea.org/publications/documents/treaties/convention-early-notification-nuclear-accident Accesed in 29 March 29, 2018

[28] Karen McMillana*"Strengthening the International Legal Framework For Nuclear Energy*" Georgetown International Environmental Law Review,Vol 13 (2001) p 988

and identify some of the data at the Fukushima Daiichi accident and publish the information that can be accessed through the International nuclear community to the world. In the missions undertaken by the International team established by the IAEA, Japan was greatly helped, therefore the Japanese government made a request with the IAEA to continue cooperation. Based on this, which is related to the request of the Japanese government, the IAEA organized a mission called IAEA International Peer Review Mission on Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station Units 1-4, which has been implemented in the framework of the IAEA Nuclear Safety Action Plan, each April 2013 and November-December 2013. The mission is aimed at enhancing International cooperation and sharing information with the International community and knowledge of the event in order to gain decommissioning in the future. The IAEA has been instrumented in orchestrating five conventions related to nuclear safety. [29]

These conventions are multilateral in scope and accompany the numerous bilateral and regional agreements on nuclear safety. The five conventions include: the Convention on Early Notification of a Nuclear Accident (resulting in "The Early Notification Agreement"), the Convention on Assistance in the Event of Nuclear Accident or Radiological Emergency, the 1997 Vienna Convention on Civil Liability for Nuclear Damage, the Convention on Supplementary Compensation for Nuclear Damage, and the Convention on Nuclear Safety.[30]

[29] Loc.cit.

[30] https://www.iaea.org/publications/documents/treaties/convention-supplementary-compensation-nuclear-damage accessed on maret 22nd 2018 at 12 .45 PM

6. Civil Liability Principle in The Vienna Convention On Civil Liability And Nuclear Damage.

Civil liability gives a person rights to obtain redress from another person e.g. the ability to sue for damages for personal injury. There is also the right to obtain an injunction. For there to be an award of damages, the injured party has to have suffered an actual loss, be it personal injury, property damage, or financial loss.

The burden of proof is "the balance of probability" which is much lower than for criminal matters. If there has been a relevant criminal conviction in a particular matter, then the burden of proof in any related civil action is reversed, so that the defendant has to prove he is not liable. An example of this would be a conviction of a company for breach of health and safety legislation, followed by the injured employee suing the company for damages for personal injury. A disincentive to suing is that the losing party pays the winners costs. In fact, this works out as a substantial proportion of the costs, rather than 100%, so a successful plaintiff has his award of damages diminished in practical terms. As a matter of public policy, it is not possible to have an enforceable insurance policy in relation to criminal penalties.

F. Research Method

The method of writing used in this research is as follows:

1. Type of Research

This is a normative legal research which is defined as a scientific research to find the truth based on normative aspect of logical legal reasoning. This research will focused on Statue and legal norms. One of the forms of this type of

research is seeking to find how and where a legal act is regulated analyzing legal fact,[31] .

2. Research Approach

The approach in this research is using Statue approach because legal norms will be basis for the research. Second analytical approach , as this research will also seek the meanings contained in certain legal norms, to be applied in this cases .third it will use conceptual to explain the concept of regulation or legal principles.

3. Object

Research object is that which becomes the object of the analysis as stated in the problems formulation.[32]The Japan's civil liability for the nuclear leakage in Fukushima and the challenges or opportunities for Japan to perform the Civil liability and to classified the force majeure in Fukushima nuclear leakage.

4. Sources of Data

There are three kinds of sources, such as:

a. Primary legal material shall be legal sources that legally binding which related with the object of this research as follow as: The Vienna Convention on Civil Liability for Nuclear Damage 1997.

b. Secondary legal sources

It is the source which is not legally binding, in this matter, it is from the literatures, books, journal related to the State responsibility to the protection of the

[31] Depri Sonata Liber,'' *Metode penelitian Hukum Normatif dan Empiris :Kharakteristik khas dari metode meneliti Hukum* ,"Fiat Justisia,Vol.8no 1 january – march 2014,p.26

[32] Team for undergraduate thesis guide of Faculty of law Universitas Islam Indonesia,*Pedoman Penulisan Tugas Akhir Program Studi s-1 Ilmu Hukum , Fakultas Hukum Universitas Islam Indonesia*,Yogyakarta,2016,p.12.

environment .It can be a journal published by Westlaw, or some expert journal from library .

c. Tertiary legal sources

It is supporting sources, such as Legal Dictionary, Oxford Dictionary, Black Law Dictionary.

5. Method of Collecting Data

The data were collected by using literature research, it is examining the books, literatures, books and related materials which examine the law and regulation which are related to the Civil liability and Implementation of Civil liability to complete the research of this thesis will be taken from Journal, article and documents .

6. Data analysis

The Data analysis was done qualitatively, it means the data which were acquired then presented descriptively and analysed using the following procedure:

a. Identification of the Data

The researcher Fund the theory and regulation related Civil Liability and Implementation of Civil Liability.

b. Interpretation of Data

The researcher then, grouped and summarized the data that could be research and find the meaning that could be analysed and conclude it.

c. Analysis of the Data

After that, the researcher Interpreted the regulation and historical background that to be analysed.

d. Conclusion

Finally, the researcher Concluded data and defined them as the solution of the problem.

G. Structure of Writing

To provide better understanding and the reader to get a clear figure in this thesis result, then the following structure will explain briefly the discussion from of this research:

CHAPTER 1

The Introduction in this thesis contains the context of the study, problem formulation, research objective, theoretical review, research method and structure of writing about the civil liability for the nuclear leakage in Fukushima.

CHAPTER II

It Contain a general overview on civil liability and International Environmental law ,Principle of International law, Principle Civil liability ,Development of precautionary principle, Concept of Nuclear Protection, Definition of Nuclear According to black law dictionary and also according to expert, Civil liability principle in the Vienna convention on civil liability and nuclear damage and the State responsibilities in Islamic perspective.

CHAPTER III

Contains the description of the results of the analysis to answer the first question on the problem formulation also contains the analysis to answer the second question on the problem formulation.

CHAPTER IV

It Closure, covering the conclusions and suggestions, which explain the conclusions of the authors on the problems.

CHAPTER II

GENERAL OVERVIEW OF ENVIRONMENTAL INTERNATIONAL LAW ON NUCLEAR LEAKAGE

International Environmental law has evolved alongside developments on environmental and ecological issues. The pressure of environmental problems is increasing every day, but no less the development of policies aimed at solving environmental problems. International Environmental Law (modern) only developed after World War II, especially after the Stockholm Conference of 1972 with the one world only central theme.[33]International Environmental Law (IEL) is concerned with the attempt to control pollution and the depletion of natural resources within a framework of sustainable development.[34] It is a branch of public International law - a body of law created by states for states to govern problems that arise between states. IEL covers topics such as population, biodiversity, climate change, ozone depletion, toxic and hazardous substances, air, land, sea and trans boundary water pollution, conservation of marine resources, desertification, and nuclear damage or leakage.[35]

A.The History of The Establishment of International Environmental Law

Modernity brings humanity to such rapid progress, especially after the emergence of an enlightenment that has undermined the darkness of Europe. With the collapse of the age of darkness that is too adherent to religion, people in

[33] Frans likadja "Perkembangan Hukum Lingkungan International ",In http://jhp.ui.ac.id/index.php/home/article/viewFile/894/817 Accesed in 15 may 2018 (11:34 PM)
[34] : Lakshman D Guruswamy, *International Environmental Law in a Nutshell* (West, 4th ed, 2012)
[35] ibid

Europe began to leave religious doctrines and become more secular. Especially the industrial revolution that has brought people to the glory that had never before been achieved. There is also a massive exploitation of nature for the benefit of man with the doctrine of Anthropocentric which was sung and pioneered by a philosopher Rene Descartes. The doctrine of Anthropocentric states that all kinds of mystification in life is none, which plays only logic, nature is made as great as the supply of human needs that is worthy of exploitation as much as possible and nature has no reciprocity. But in the post-World War II era, global society began to realize the importance of preserving the environment.[36]

The first milestone in the emergence of a legal environmental law occurred in 1972, at the International Environmental Conference in Stockholm, Sweden with a UN initiative. The conference took the theme of Only One Earth, in the conference agreed upon the establishment of United Nation Environment Program (UNEP). In addition, the conference agreed on June 5 as World Environment Day, the approval of the environmental declaration accompanied by concrete steps, related to the institutional and financial systems that support the program of environmental sustainability. Later in 1979 the European Union, represented by the European Economic Commission (EEC), created a convention to limit emissions of sulfur fumes in Europe.[37]

The United Nations Conference on Environment was re-established in 1992 in the City of Rio de Janeiro, Brazil. A total of 114 heads of state. In this

[36] Steans, Jill dan Lloyd Pettiford.2009. *Hubungan International : Perspektif dan Tema*.Yogyakarta : Pustaka Pelajar. Pg 375-432.

[37] Hurrel, Andrew dan Benedict Kingbury, 1992. *The International Politics of the Environment: Introduction*. Oxford University Press.

conference, the world began discussing the importance of preventing and mitigating the effects of global warming, the depletion of the ozone layer, the rise of illegal logging, rising greenhouse gas emissions. The conference resulted in several decisions, including the declaration of 21 Agenda, Rio Declaration on Environment and Development, the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity, a Set of Forest Principles. The Rio Declaration is a momentum on the sustainability of the environment in the globalization era.[38]

There are several functions and principles in International environmental law. First, the obligation to safeguard, reduce and control environmental damage, by imposing obligations on sovereign States to uphold International environmental law laws within its jurisdiction. Second, the obligation to protect the environment that is not only held by the state but also the responsibility of global community in general. Third, the absolute obligation of prevention, which underscores the obligation of a country to reduce pollution which pollutes the environment in its territory to its full potential, and the state, is fully responsible for the occurrence of unforeseen environmental pollution. Fourth, the Foreseeability of Harm and the "Precautionary Principle", which contains the principle of the state must take into account the maturity associated with the environmental policy that will be made in the country. Fifth, Trans boundary Co-Operation In Causes Of Environmental Risk, which is each country must cooperate in terms of damage and environmental pollution that potentially harm all parties. Sixth, The "Polluters Pays" Principle, ie every pollution country has an

[38] Ibid

obligation to pay compensation to an aggrieved country due to pollution by the calculation of both parties. Seventh, Equal Access and non-discrimination, concludes that all existing rules must be obeyed by all countries with the principle of non-discrimination and equal to one country with another country.[39]

B. Principles of International Environmental Law

The environment has been considered a common heritage of mankind. The concept of the common heritage of mankind developed in the late 1960s in response to the theory of mastery of natural resources, namely res nullius danres communis. Res nullius assumes that resources are basically not owned by anyone, so that everyone can have it through an effective discovery. On the other hand, res communism requires common ownership that excludes individual ownership (unilateral). Res communis allow freedom of access including exploration and exploitation, while the common heritage concept strictly regulates exploration and exploitation, establishes a management mechanism and uses the fairness criteria of benefit distribution from such activities.[40]

The concept of the common heritage of mankind differs from both theories, because the connotation of "inheritance" is concerned with the temporal aspect of the common protection of territories that are not the jurisdiction of a country.[41]

1. The Principle of Preventive Action

[39] Daud Silalahi,Hukum Lingkungan Dalam Sistem Penegakan Hukum Lingkungan Indonesia, Edisi Revisi,Alumni,Bandung,1996,pg.129-132

[40] Malcolm N. Shaw, 2004, International Law, Edisi Kelima, Cambridge University Press, Cambridge, hlm.454

[41] Alexandre Kiss dan Dinah Shelton, 2007, *Guide To International Environmental Law*, Martinus Nijhoff Publishers, Leiden, hlm.16

Some Expert argue that the principle of prevention is contained in the 21st Principle of the Stockholm Declaration of 1972, which is[42] :

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

At the International level, recognition of the principle of prevention can be seen from several conventions on the protection of the Environment itself, ranging from the issue of protection of marine ecosystems to the issue of biodiversity[43].This principle has also gained recognition in the ICJ's decision on the Gabcikovo-Nagymaros case, where it is stated that the application of the principle of prevention is a necessity for each country, since there is an irreversibility characteristic of environmental degradation.[44]

Another point was mentioning is that Prevention Principle is principles devoted to risk prevention. What is the risk? When trying to differentiate risk with uncertainty, economists usually refer to Frank Knight, Risk, Uncertainty and Profit. In this contain, Knight distinguishes the risk of uncertainty based on the probability that we can attach to an event. In this case, Knight divides the probabilities into three categories.[45] Beyond the risk situation (the situation when

[42] The 2nd principle of the 1992 Rio Declaration also reads the same as the 21st Principle of the Stockholm Declaration
[43] Nicolas de Sadeleer (2002), Environmental Principles: From Political Slogans to Legal Rules, (Oxford: Oxford University Press, 2002), pp. 65-66.
[44] Ibid.,page 67
[45] F.H. Knight, Risk, Uncertainty and Profit (New York: Augustus M. Kelley, 1964), p. 224- 225

we can find out information about the outcome possible and probability) and uncertainty (some situations where we only know information about possible outcomes, without knowing their probabilities), some authors assume that sometimes we are dealing with situations where even if we know the probabilities of the outcomes we will not know certainly the magnitude of each result that will appear. This situation is called ambiguity. According to Stirling, the situation ambiguity is born when the studied risk is multidimensional, so allows the emergence of "different perspectives concerning the scope, characterization, and prioritization "[46].

For the state of risk (risk) that can be applied is the principle of prevention. As for the state of uncertainty, ambiguity, or the prevailing ignorance is no longer the principle of prevention, but the precautionary principle.[47] Thus, it can be said that the principle of prudence is a principle prevention is applied to circumstances beyond risk (risk). Good principles prevention and prudential principles are both

[46] A. Stirling, "Risk, Uncertainty and Precaution: Some Instrumental Implications from the Social Sciences ", in: F. Berkhout, M. Leach, and I. Scoones (eds.), Negotiating Change: New Perspectives in Environmental Social Science (London: Edward Elgar, 2003), p. 45. Ambiguity too indicates that the outcome of the risk evaluation is actually very sensitive to that assumption created, which in turn will greatly determine how risk is asked, made
the priority, and then interconnected. See: P. Van Zwanenberg and A. Stirling, "Risk and Precaution in the US and Europe: A Response to Vogel ", in: H. Somsen, et al. (eds.), The Yearbook of European Environmental Law Vol. 3 (Oxford: Oxford University Press, 2003), p. 46. According to the authors, the ambiguity situation occurs in many impact studies climate change, especially the impact of gradual climate change. Although current experts have been able to determine the probability of some of the impact that will arising from this climate change, but they still often disagree about the magnitudes certainly from each impact. The debate will become more visible when the magnitude of the impact is then translated into the form of money in order to determine the economic valuation for the impact that occurred. In this case, economists often argue about validity and usagevalue of statistical life (VOSL, a kind of price for human life) or the use of discount rate in economic valuation. As a result, we often find different magnitudes among the people author. For the debate about VOSL see for example: M. Grubb, "Seeking Fair Weather: Ethics and the International Debate on Climate Change ", International Affairs, Vol. 71 (3), 1995: p. 463-496. For criticism of the use of discount rate see for example: N. Khanna and D. Chapman, "Time Preference, Abatement Costs, and International Climate Policy: An Appraisal of IPCC 1995 ", Contemporary Economic Policy, Vol. XIV, 1996: p. 58

[47] Nicholas Treich, 2001, “What is the Economic Meaning of the Precautionary Principle?”, The Geneva Papers on Risk and Insurance, Vol. 26, No. 3, 2001, PG. 337

asking for the effort prevention. The difference lies in the underlying conditions of the effort prevention.

2. The precautionary principle

The principle of prudence was first applied in the environmental policy of Germany in the early 1970s, and was known as Vorsorgeprinzip. The purpose of vorsorgeprinzip is to prevent contamination by carefully estimating the potential for pollution. It is also mentioned that this principle is the basis for the sustainability of the ecological resources for generations that come through the careful use of these resources. Harald Hohmann states that vorsorgeprinzip produces some of the following obligations [48]:

a. The obligation to minimize the possible causes of the damage environment by taking actions based on technology or the latest science (state of technology or state of science and technology). If evidence of such damage has not been collected, the likelihood of such damage being sufficient the basis for prevention measures.

b. Obligations on avoidance produce waste as well transport / use of hazardous materials since the production process; as well as the obligation to recycle the waste generated[49]

c. Prohibition against the decline of current environmental conditions (principle of status quo preservation). That is, everyone is encouraged not to do the actual destruction can be avoided (avoidable impairments). The status quo

[48] Harald Hohmann, Precautionary Legal Duties and Principles of Modern International Environmental Law: The precautionary principle: International Environmental Law between Exploitation and Protection, (London: Graham & Trotman, 1994), pp. 10-11.
[49] *Ibid*,p.243.

preservation also means liability to pay compensation for damages that cannot avoided;

d. Environmental aspects must constantly be considered in every policy planning.

e. Environmental management considering economic aspects from nature, protection and natural resources.

f. using natural resources to make more efficient.

g. The obligation to make restrictions on the use of and marketing of every chemical.[50]

Furthermore, Tickner and Reffensperger explained that the principle of prudence has derived components, both juridically and politically, as follows[51]:

a. Takes precautionary action before certainty scientific knowledge of cause and consequence was obtained.
b. The setting of a goal, namely that the principle of prudence encourages its realization more planning based on defined goals accurate, and not purpose based on scenario or calculation a risk that is often mistaken and biased.
c. Search and evaluate policy alternatives. That is, the principle Caution emphasizes more on the question of how to reduce or eliminate harm and try to find all alternatives for achieve that goal, and not based on level questions what kind of pollution can be said to be safe.
d. Decisions made in the context of the application of prudential principles must be open, democratic, informed, and must be included parties who may be affected by the issuance of a decision There should be a diversion of burden of

[50] *Ibid,*p.246
[51] Joel Tickner and Carolyn Reffensperger, "The precautionary principle in Action: A Handbook", first edition, <http://www.biotech_info.net/handbook.pdf>, pp. 3-4

proof, in which the initiator of the activity be obliged to prove that its activities will not resulting in danger to human health and safety ecosystem.

e. The development of more decision-making methods and criteria democratic and thorough. The principle of caution requires existence scientific considerations as well as other (non-scientific) evidence / considerations when forces uncertainty, so it also requires consideration which is more thorough and involves more public participation within policy-making.[52]

The precautionary principle is the embodiment of environmental management which is based on anticipatory approach. This approach is the third step approach of the approach used for environmental management.

3. Development of precautionary principle

The precautionary principle is contained in various International documents is considered as a guidance for decision making in situations scientific uncertainty. In general, the principle of prudence formulated in the statement that if there is a serious threat of harm or can not be recovered (threats of serious or irreversible damage), the taker the decision can not use the lack of certainty or scientific evidence as reason to delay the prevention of such threats. Some scholars welcome the emergence of this principle of caution as a new

[52] Ibid pg.75.

development in national and International policies aims to protect people and the environment from serious harm.[53]

And can not be recovered. In this case, the principle of prudence is considered to play a major role in changing the policy direction in the face of serious but still uncertain dangers. If policy makers are often reluctant to take such hazardous precautions, then with the principle of caution, the potential danger can no longer be ignored solely on the grounds that the danger is still unclear and overwhelmed by scientific uncertainty.[54] The principle of prudence first emerged as an environmental management principle within German environmental law, with the term Vorsorgeprinzip, which means foresight and taking care. Vorsorgeprinzip requires states to avoid environmental damage by careful planning. This principle is also a justification for the program of prevention and control of pollution on a large scale, through the enactment of the best technology (best available technology) to minimize the possibility of pollution.[55]

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[53] Sustainable Development | Precautionary Principle' (*Sustainable-environment.org.uk*, 2019) <http://www.sustainable-environment.org.uk/Principles/Precaution.php> accessed 10 January 2018.

[54] M. Geistfeld, "Implementing the Precautionary Principle", Environmental Law Reporter, Vol. 31, 2001: p. 11328. A similar opinion is also expressed by De Sadeleer who considers the principle of prudence as a manifestation of anticipatory approach, which is a current stage in the development of decision making that emphasizes the conduct of anticipatory action. According to De Sadeleer, this new approach (i.e. anticipative approach) can be distinguished from two stages of development in environmental policy making that have been used. In the first stage, environmental policies emphasize restoration measures, embodied in the form of government intervention to restore environmental conditions after the occurrence of a pollution / damage. In the second phase, environmental policies have begun to emphasize the preventive approach. In this second stage, officials authorities may be allowed to intervene (in the form of precautions) before pollution / environmental damage occurs. This second stage arises because the threat of environmental damage is seen as a real threat, so the precautions at that moment right is deemed necessary to avoid pollution. These two stages are deemed inadequate, as evidenced by the many serious environmental impacts that policy makers fail to anticipate. It is these failures which then elicits the third approach, the anticipatory approach, with the principle of prudence as its main characteristic. See: N. de Sadeleer, Environmental Principles: From Political Slogans to Legal Rules (Oxford: Oxford University Press, 2002), p. 91-92.

[55] A. Jordan dan T. O'Riordan, "The Precautionary Principle in Contemporary Environmental Policy and Politics", in: C. Raffensperger dan J. Tickner (eds.), Protecting Public Health and the Environment: Implementing the Precautionary Principle (Washington, DC: Island Press, 1999),

Recognition of the principle of prudence was later restated and clarified in The 1987 London Declaration adopted at the Second International Conference on the Protection of the North Sea, The 1990 Hague Declaration adopted at the Third International Conference on the Protection of the North Sea , The 1995 Esjberg Declaration adopted at the Fourth International Conference on the Protection of the North Sea, and The 2002 Bergen Declaration the Fifth International Conference on the Protection of the North Sea. Based on these declarations, the principle of prudence was later adopted in The 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area (OSPAR Convention), The 1995 Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (The 1995 Barcelona Convention), The 1996 Izmir Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movements of Hazardous Wastes and their Disposal , and The 2002 Valletta Protocol Concerning Cooperation in Preventing Pollution from Ships, and in cases of Emergency.

4. The Polluter-Pays Principle

Thus, theoretically the principle of polluter pays is an effort directly related to the concept of internalization of externalities. Alan Boyle stated that in order to apply the principle of pollution to pay, we can not only rely on taxes or

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hal. 19-20. Lihat pula: E. Fisher, J. Jones, dan R. Von Schomberg, "Implementing the Precautionary Principle: Perspective and Prospects", dalam: E. Fisher, J. Jones, dan R. Von Schomberg (eds.), Implementing the Precautionary Principle: Perspective and Prospects (Cheltenham, UK: Edward Edgard, 2006), pg. 2-3.

charges, because these instruments often fail to reduce the demand for goods that damage the environment.[56]

Theoretically, the Pollution Paying Principle is basically an economic policy in order to allocate costs for pollution and environmental damage, but then has implications for the development of International and national environmental law, ie in terms of liability for damages or costs environment to be endured by public officials. This principle is first noted in some of the recommendations of the OECD in the 70s which basically states that the polluter pays principle requires polluters to bear the necessary expenses in the framework of efforts taken by public officials to keep the environmental conditions at acceptable conditions, or in other words, that the costs necessary to carry out these efforts should be reflected in the prices of goods and services that have caused pollution during the production process or consumption process.[57]

C. The Concept of Nuclear Protection

Energy issues are one of the most important issues that are being warmed up. "Increasingly, energy sources, the discovery of new energy sources, the development of alternative energies (and the impacts of energy use on environments) are interesting and widely discussed themes. bales that are believed to be occurring and will enter into a worrying phase are also mentioned as the impact of the use of petroleum energy which is the main energy source today. The

[56] The tax effectiveness of changing consumption patterns depends on two things: the elasticity of the taxed goods and how much tax will be imposed. If the demand for the goods is not elastic, then no amount of tax will be subject to change the consumption pattern. On the other hand, the determination of tax rates is also often problematic because taxes often have widespread impacts on society and therefore the magnitude is often a political compromise

[57] Alan Boyle, "Impact of International Law and Policy" in Environmental Regulation and Economic Growth (Alan Boyle, ed.), (Oxford: Clarendon Press, 1994), pg. 179

environmental impact and diminishing sources of petroleum energy force us to " new energy. One alternative (a new source of energy that comes from nuclear energy. Although the impact and dangers are enormous, it can not be denied that nuclear energy is one alternative a source of energy. The most powerful nuclear radiation that occurred in Chernobyl, Ukraina and what happened in Fukushima, the new one recently shows that the heaters (nuclear energy aids need a review. And Requires a mitigation. In fact, the wise, responsible, and controlled audiences of nuclear energy can increase tare (while simultaneously spurring the problem of energy scarcity).

1. Definition of Nuclear According to black law dictionary

Nuclear power plants are very complex. There are many different buildings at the site and many different systems. Some of the systems work directly to make electricity. Some of the systems work to keep the plant working correctly and safely. All nuclear power plants have a "containment structure" that holds the reactor. And all plants have deep pools where the nuclear fuel when it is no longer being used can be cooled and stored. All nuclear power plants make electricity from the steam created by the heat of splitting atoms. But there are two different ways that steam is used. Pressurized Water Reactors are known as "PWRs." They keep water under pressure so that it heats but does not boil. Water from the reactor and the water that is turned into steam are in separate pipes and never mix.[58]

2. According to Expert

[58] Bryan A Garner and Henry Campbell Black, *Black's Law Dictionary* (7th edn, west publishing 1999).pg 43.

In 1896, Antoine Henri Becquerel discovered the radioactivity of uranium. In 1902, Marie and Pierre Curie isolated radioactive metals called radium. In 1905, Albert Einstein formulated in the theory of Special Relativity Theory. According to this theory, mass can be regarded as another form of energy. According to Einstein, we can change the mass. into energy, perhaps to "liberate" enormous amounts of energy. Over the next decade, major steps were taken by Ernest Rutherford and Niels Bohr explaining the precise atomic structure. They say, from positively charged nuclei, and negatively charged electrons that revolve around the nucleus. That is the essence, the scientists concluded, that it should be broken or "exploded" if atomic energy would be released.[59] Nuclear is an alternative source of energy that is considered clean for the environment because it does not have the potential to increase global warming and if operated properly will bring mercy to humans, but if there is interference or leakage can be anathema that is more harmful to living creatures and surrounding environment. There are some of the biggest nuclear accident tragedies that highlight the world over including those at NPP on Three Mile Island Island, gas leaks in Bhopal, the Nuclear power plant accident at Chernobyl and the Fukushima nuclear accident.[60]

D. The new provisions on Scope of nuclear liability regime

The purpose of the Vienna Convention is the harmonization of national legislation relating to third party liability for damage caused by a nuclear incident occurring at certain installations, or in the course of transport of nuclear material to or from such installations. The Convention does not cover the issue of State

[59] History of Nuclear Creation, accessed from: http://www.centralartikel.com/2010/10/ history-creation-bomb-nuklir.html. at 4 june 2018
[60] ibid

responsibility or liability for nuclear damage under the general rules of public International law. The 1997 Protocol does not substantially change the scope of application of the Vienna Convention as far as rights under public International law are concerned On the other hand, the Protocol modifies the scope of application of the International civil liability regime in several respects. In the first place, it envisages the possibility of the inclusion or exclusion of a nuclear installation from the application of the 1997 Vienna Convention on the basis of the risk involved, and makes it clear that the Convention does not apply to installations used for non-peaceful purposes. Secondly, it extends the "geographical scope" of the Convention so as to cover damage "wherever suffered". Finally, it gives a new definition of "nuclear damage" and this also I want to elaborate in Chapter III.

1. The new dispute settlement procedure

An Optional Protocol Concerning the Compulsory Settlement of Disputes was adopted on 21 May 1963 at the same Diplomatic Conference which adopted the Vienna Convention. But this Protocol, which only entered into force on 13 May 1999, has at present only two Parties. Of course, Contracting Parties to the 1963 Vienna Convention may be party to other bilateral or multilateral treaties on the settlement of International disputes which may apply in the event of a dispute concerning the interpretation or application of the Vienna Convention. Moreover, Contracting Parties may have declared, under the so-called "optional clause" in Article 36.2 of the International Court of Justice's Statute that they recognize as compulsory, in relation to any other State accepting the same obligation, the jurisdiction of the International Court of Justice. However, it is a well-known fact

that under general International law there is no obligation to settle International disputes and all procedures for such settlement rest on the consent of the Parties. The 1997 Protocol inserts in the Vienna Convention a new provision, Article XX [61]A, whereby, if a dispute concerning the interpretation or application of the Convention is not settled within six months by negotiation, or any other peaceful means of the Parties' choice, any Party can, by way of a unilateral request, submit it to arbitration or refer it to the International Court of Justice for decision.[62]

Since arbitration, as opposed to judicial settlement, usually presupposes the establishment of an ad hoc arbitrator or arbitral tribunal, Article XX A provides that, if the Parties to the dispute cannot agree on the organization of the arbitration, each of them may request the Secretary General of the United Nations or the President of the International Court of Justice to appoint one or more arbitrators. Ultimately, therefore, the dispute will be settled by an arbitral award or by a decision of the International Court of Justice, either of which would be binding on the Parties. However, Article XX A.3 allows each State to opt out of this compulsory dispute settlement procedure by a declaration made when ratifying, accepting, approving or acceding to the Convention. The situation is, therefore, not essentially different from the one existing under the 1963 Vienna Convention and Optional Protocol: the only difference is that a State not wishing to be bound by the new dispute settlement procedure has to make a specific declaration to that effect; without such a specific declaration, ratification of, or

[61] The 1997 protocol Vienna Convention on nuclear damage Article XX

[62]. The first proposal was articulated during the second session and the first meeting of the Intersessional Working Group, and was provisionally adopted at the third session (see documents SCNL/ 2/INF.2, p. 9; IWG.1, Annex II; SCNL/3/INF.2/Rev.1, pp. 10–11). A minor amendment was articulated during the second meeting of the Intersessional Working Group and adopted at the fifth session (see documents IWG.2, Annex II; SCNL/4/INF.6, p. 23; SCNL/5/INF.4, pp. 32–33)

accession to, the amending Protocol will automatically entail an obligation to submit to the compulsory dispute settlement procedure provided for in Article XX A of the 1997 Vienna Convention. So far, none of the States which have ratified the 1997 Protocol have made a declaration to that effect. In any event, Article XX A.4 adds that a declaration made in accordance with paragraph 3 can at any time be withdrawn by notification to the Depositary.[63]

E. General Overview of Civil Liability

1. Definition of civil liability

All the countries considered have a form of classical civil liability based on the fundamental principle that where a person causes damage to another with some degree of fault (usually negligence) that damage should be compensated. These rules are expressed either as part of a civil code or through common law developed through case law or through enactments formalizing common law.[64] The classical civil liability systems in a number of countries have been developed to introduce forms of strict liability for environmental damage where, for example, hazardous activities are being undertaken.

Some countries have enacted specific laws to provide a basis for claiming compensation for environmental damage suffered. The first countries to take this step were Norway and Sweden. Significantly, the other Scandinavian countries have also now introduced specific environmental civil compensation laws. Among others Germany also has such a law and Austria is due to introduce one based

[63] ibid
[64] Civil Liability' (*TheFreeDictionary.com*, 2018) <https://legal-dictionary.thefreedictionary.com/civil+liability> accessed 23 October 2018.

mainly on the Lugano Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment 1993. Many of these laws are recent and therefore experience of their use is limited. The German legislation has been particularly under-used. [65]

The specific environmental compensation laws impose strict liability and are directed towards environmental issues. Some are made to apply only to certain industrial activities or installations. This is, for example, the case with the Danish and German legislation both of which list in an annex the industries to which the legislation applies. In contrast, the Finnish and Swedish legislation applies to any activity which results in damage to the environment. Civil liability in nuclear reactor accidents is a party's obligation to make repairs to the environmental damage caused by the activities of nuclear power plant operators that cause nuclear reactor accidents**.** Civil liability is closely related to duty countries to compensate for the environmental damage caused by activities or activities in the territory of the country and cause harmful effects.[66]

2. **Kinds of Civil Liability**

In the field of Civil Law, the principle of absolute liability (Strict Liability) is one type of civil liability .[67] Civil liability in the context of environmental law enforcement is civil law instruments to obtain compensation and recovery costs environment due to pollution and or environmental destruction. Accountability civil recognize 2 (two) types of responsibility that is accountability

[65] ibid
[66] World Nuclear Association, Ian Hore-Lacy (Author), Cutler Cleveland (Topic Editor), "Civil Liability for Nuclear Damage "is available at http://www.eoearth.org/article/, accessible on the 14th june 2018
[67]Salim HS, 2008, *Pengantar Hukum Perdata Tertulis (BW),* Sinar Grafika, Jakarta. Pg.45.

which requires a proof of the element of error that gives rise loss (fault based liability); and Strict Liability, an accountability without having to be proved to be an element of error, where accountability and immediate damages arise after an act has been committed. According to prevailing academic usage, strict liability is liability without wrongdoing.[68]

A defendant subject to strict liability must pay damages irrespective of whether she has met, or failed to meet, an applicable standard of conduct. Action that causes harm is all that is required. By contrast, fault-based liability is conceived as liability predicated on some sort of wrongdoing. The defendant's liability rests on the defendant having been "at fault," i.e., having failed to act as required. This treatment of strict and fault-based liability as opposites is a monumental mistake. In fact, tort liability is almost always simultaneously fault-based and strict. For torts ranging from battery to negligence, and from libel to trespass, liability is imposed on the basis of wrongdoing. Yet, it is also imposed strictly—that is, in a demanding or unforgiving manner. As the first half of our title suggests, there is strict liability in fault.

This is also described in article 23 of the draft ILC. On the contrary, absolute liability is the principle of responsibility without error and no exceptions. Usually this principle of absolute responsibility is applied because: (1) the consumer not in a favorable position to prove a mistake in a complex production and distribution processes. (2) when there is a lawsuit for his mistake, for example

[68] Daud Silalahi,op.cit,pg 129

by insurance or adding certain cost components to the cost of goods, (3) this principle may force producers more caution.[69]

According to Prof Munadjat, the obligation of the defendant to assume responsibility for these losses arise directly or instantaneously, so there is the fact that indeed there has been an event that caused the loss. Civil accountability who adhere to the principle of absolute / strict liability (absolute / strict liability) arises from the consciousness of society that for every act that is done either by individuals or groups, then people or groups it will not be able to escape from responsibility for any loss that caused by the act. Usually this principle is always associated with compensation.[70]

F. Explain on Civil liability basic principles and The differences of civil liability

Criminal liability In criminal matters, it is usually the state prosecuting the defendant before a magistrate. The basic assumption in criminal liability is that there is both a mental element and physical element to the offence. For example, theft involves "dishonestly" which is a question of mental attitude, and "appropriating" which is a physical act. The burden of proof for criminal offences is that of "beyond reasonable doubt". It should be realised that various offences in relation to, for example, road traffic law or environmental law have been so structured that the "mental element" is in fact not required for a conviction. This has been as a matter of public policy to make it possible to obtain convictions which otherwise would be very difficult. The penalties for criminal offences are

[69] Article 23 ILC DRAFT
[70] N.H.T. Siahaan,*Hukum Lingkungan dan Ekologi Pembangunan*,*Erlangga*,Jakarta, 2004,Pg.3

fines and imprisonment, as well as other non-custodial punishments. The Basic Principles of Nuclear liability law [71],These Principles including following :

1. The operator of a nuclear installation is exclusively liable for nuclear damage.

All liability is channeled on to one person, namely the operator of the nuclear installation where the nuclear incident occurs for example the Fukushima nuclear leakage is occur in Fukushima district or in the case of an accident during the shipment of material, of the installation from which the shipment originated. Under the Conventions, the operator and only the operators liable for nuclear incidents, to the exclusion of any other person. Two primary factors have motivated this exclusive liability of the operator, as distinct from the position under the ordinary law of torts. Firstly, it is desirable to avoid difficult and lengthy questions of complicated legal cross-actions to establish in individual cases who is legally liable. Secondly, such exclusive liability obviates the necessity for all those who might be associated with the construction or operation of a nuclear installation other than the operator itself to also take out insurance, and thus allows a concentration of the insurance capacity available. [72]

2. Strict (no fault) liability is imposed on the operator[73]

There is a long established tradition of legislative action or judicial interpretation that a presumption of liability for hazards created arises when a person engages in a dangerous activity. Owing to the special dangers involved in the activities within the scope of the Conventions and the difficulty of establishing

[71] These Conventions were linked in 1988 by the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention.
[72] ibid
[73] Referred to in the Conventions as "absolute liability".

negligence in particular cases, this presumption has been adopted for nuclear liability. Strict liability is therefore the rule; liability results from the risk, irrespective of fault.

3. Exclusive jurisdiction is granted to the courts of one State, to the exclusion of the courts in other States.

The general rule is that a court of the Contracting Party in whose territory the nuclear incident occurs has jurisdiction. If suits arising out of the same incident were to be tried and judgments rendered in the courts of several different States, the problem of assuring equitable distribution of compensation might be insoluble. Within the State, one single competent forum should deal with all actions including direct actions against insurers or other guarantors and actions to establish rights to claim compensation against the operator arising out of the same nuclear incident.

4. Liability is limited in amount and in time.

In the absence of a limitation of liability, the risks could in the worst possible circumstances involve financial liabilities greater than any hitherto encountered, and it would be very difficult for operators to find the necessary insurance or financial security to meet the risks. As to the limitation in time, bodily injury caused by radioactive contamination may not become manifest for some time after the exposure to radiation has actually occurred. The legal period during which an action may be brought is therefore a matter of great importance. Operators and their insurers or financial guarantors will naturally be concerned if

they have to maintain, over long periods of time, reserves against outstanding or expired policies for possibly large but unascertainable amounts of liability.[74]

On the other hand, it is unreasonable for victims whose damage manifests itself late to find that no provision has been made for compensation to them. A further complication is the difficulty of proof involved in establishing or denying that delayed damage was, in fact, caused by the nuclear incident. A compromise has necessarily been arrived at between the interests of those suffering damage and the interests of operators.

G. Overview on Vienna Convention on Civil for nuclear damage

1. History of Vienna Convention On Civil Liability For Nuclear Damage

The Vienna Convention on Civil Liability for Nuclear Damage is a 1963 treaty that's rules in of liability in cases of nuclear accident. It was concluded at Vienna on 21 May 1963 and entered into force on 12 November 1977. The convention has been amended by a 1997 protocol. The depository is the International Atomic Energy Agency.[75] As of February 2014, the convention has been ratified by 40 states. Colombia, Israel, Morocco, Spain, and the United Kingdom have signed the convention but have not ratified it. Slovenia has denounced the treaty and withdrawn from it. The 1963 Vienna Convention on Civil Liability for Nuclear Damage has the same basic purpose as the 1960 Paris Convention on Third Party Liability in the Field of Nuclear Energy, namely the harmonization of national legislation relating to third party liability for nuclear

[74] 'Limited Liability' (*Investopedia*, 2019) <https://www.investopedia.com/terms/l/limitedliability.asp> accessed 13 January 2019.
[75] The International Atomic Energy Agency' (1981) 31 Vacuum <https://www.sciencedirect.com/journal/vacuum/vol/34/issue/5> accessed 24 August 2018.pg23.

damage. The need for a uniform nuclear liability regime was also felt at the world level, and, on 21 May 1963, the Vienna Convention on Civil Liability for Nuclear Damage was adopted under the auspices of the International Atomic Energy Agency (IAEA). The 1963 Vienna Convention entered into force on 12 November 1977. Even before the adoption of the 1963 Vienna Convention, a specific treaty had been adopted in order to deal with nuclear powered ships, namely the 1962 Brussels Convention on the Liability of Operators of Nuclear Ships, but this Convention never entered into force. Finally, mention must be made of the 1971 Brussels Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material, which was adopted under the auspices of the Inter-Governmental Maritime Consultative Organization (IMCO), now known as the International Maritime Organization (IMO), and entered into force on 15 July 1975.[76]

The Convention does not cover the issue of State responsibility or liability for nuclear damage; indeed, Article XVIII makes it clear that the Convention is not to be "construed as affecting the rights, if any, of a Contracting Party under the general rules of public International law in respect of nuclear damage".

Unlike the 1960 Paris Convention, the 1963 Vienna Convention makes no provision for the settlement of disputes between Contracting Parties concerning its interpretation or application. An Optional Protocol Concerning the Compulsory

[76] The Convention was adopted on 17 December 1971 by a Conference convened by the IMCO, in association with the IAEA and the OECD (NEA). The purpose of the 1971 Convention is to resolve difficulties and conflicts which might otherwise arise from the simultaneous application to nuclear damage of certain maritime conventions dealing with shipowners' liability and the specific nuclear liability conventions which place liability exclusively on the operator of the nuclear installation from which, or to which, the material is transported. The 1971 Convention provides that a person otherwise liable for damage caused by a nuclear incident shall be exonerated from liability if the operator of the nuclear installation is also liable for such damage by virtue of the 1960 Paris Convention, the 1963 Vienna Convention, or national law which is similar in the scope of protection given to the persons who suffer damage.

Settlement of Disputes was adopted on 21 May 1963 at the same Diplomatic Conference which adopted the Vienna Convention. But this Protocol, which only entered into force on 13 May 1999, has at present only two Parties. Of course, Contracting Parties to the 1963 Vienna Convention may be party to other bilateral or multilateral treaties on the settlement of International disputes which may apply in the event of a dispute concerning the interpretation or application of the Vienna Convention. Moreover, Contracting Parties may have declared, under the so called "optional clause" in Article 36.2 of the International Court of Justice's Statute, that they recognize as compulsory, in relation to any other State accepting the same obligation, the jurisdiction of the International Court of Justice. However, it is a well-known fact that under general International law there is no obligation to settle International disputes and all procedures for such settlement rest on the consent of the Parties. The 1997 Protocol inserts in the Vienna Convention a new provision, Article XX A, whereby, if a dispute concerning the interpretation or application of the Convention is not settled within six months by negotiation, or any other peaceful means of the Parties' choice, any Party can, by way of a unilateral request, submit it to arbitration or refer it to the International Court of Justice for decision.[77]

H. Islamic concept of environmental protection

Islam is a religion that is very concerned about balance and environmental sustainability. Many verses of the Qur'an and as-Sunnah are discussing about the environment. n Islam this kaffah has prohibited all forms of damage to the natural

[77] World Nuclear Association (WNA). 2014. Nuclear Power In Japan. http://www.worldnuclear.org/info/Country-Profiles/Countries-G-N/Japan/ 11 Oktober 2018.

surroundings, either damage directly or indirectly. The Muslims, should be at the forefront of preserving and preserving the environment. Therefore, every Muslim should understand the foundations of environmental conservation. Because the conservation of the environment is the responsibility of all human beings as bearer mandate to inhabit the earth Allâh Azza wa Jalla this.

Allah Subhanahu wa Ta'ala has banned the act of damaging the environment because it can endanger human life on earth. Because the earth we live in belongs to Allâh Azza wa Jalla and we are only entrusted to occupy it to the time limit that Allâh Azza wa Jalla has set. Therefore, humans should not arbitrarily Allâh Azza wa Jalla said:

تِلْكَ آيَاتُ اللَّهِ نَتْلُوهَا عَلَيْكَ بِالْحَقِّ ۗ وَمَا اللَّهُ يُرِيدُ ظُلْمًا لِلْعَالَمِينَ

That is the verses of Allah Azza wa Jalla. We recite the verses to you correctly and Allah is not willing to persecute His servants. [78]

Allah Almighty created this nature not without purpose. Islam emphasized to his people to exemplify the Prophet Muhammad who brought mercy to all nature. Humans are guided and required to respect growing processes and to whatever is on earth. Religious ethics towards the environment leads people from damage. Every damage to the environment is considered as the destruction of the human self itself.[79]

Humans are obliged to preserve nature. God told humans to use nature for the benefit of the people and prosper it. This is explained in the Qur'an: "He has created you from the earth (land) and made you prosperous."[80]

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[78] Al-Quran 3 (Ali Imrân):108

[79] Quraish Shihab. *Membumikan Al-Qurān Fungsi dan Peran Wahyu*. Bandung: Mizan, 1995, 297.

[80] Al-Qurān, 12 (Huud): 61.

هُوَ أَنشَأَكُم مِّنَ ٱلۡأَرۡضِ وَٱسۡتَعۡمَرَكُمۡ

In utilizing and prospering this earth, God forbids humans to riot, because the destruction of nature will also cause damage to humans. Allah explained in His words: "The damage on land and in the sea has been seen because of the deeds of the hands of men, so that God will feel for them as a part of (their) actions, so that they will return (to the right path)."[81]

ظَهَرَ ٱلۡفَسَادُ فِى ٱلۡبَرِّ وَٱلۡبَحۡرِ بِمَا كَسَبَتۡ أَيۡدِى ٱلنَّاسِ لِيُذِيقَهُم بَعۡضَ ٱلَّذِى عَمِلُواْ لَعَلَّهُمۡ يَرۡجِعُونَ (٤١)

1. According to environmental fiqh

Overcoming the current environmental crisis is not always a technical, economic, political, legal, and socio-cultural issue. Rather it is necessary to solve efforts from various perspectives, including one is the environmental fiqh perspective which can be referred to as (fiqh al-bî'ah)[82], the fiqh of the environment is very important because the ecological problem relates to the humanity problem as a whole.Fiqh environment (fiqh al- ah) is a new

[81] Al-Qurān, 30 (Al-Ruum): 41

[82] The emergence of environmental fiqh discourse can be traced recently. A survey Historically-a more comprehensive archaeological course should still be undertaken to mark on a regular basis surely since when this term becomes a new vocabulary in Islamic discourse (and Islamic law) we are in general. However, according to the author's limited observation, the discourse of environmental fiqh surfaced more or less as Yusûf al-Qardlâwî, a great fiqh professor from Syria whose views is popular in our country, writing his work entitled Ri'ayah al-Bî'ah fî Syarî'ah al-Islâm in 2001 Yang ago. It does not close the possibility that previous years of this discourse have been popular in scientific discourse in Arabia there. But if we see the "fluctuations" of the development of discourse in Indonesia, hypothetically it can be said that this discourse is "stub" al-Qardlâwî. As if following up the idea of al-Qardlâwî, in 2006 KH. Ali Yafie then published the book Pioneering the Fiqh of the Environment. Approve ideas al-Qardlâwî, Ali Yafie who is also a faqîh in Indonesia, discourses the need for a new foundation to expand the study of fiqh to explore environmental issues. Ali Yafie's idea seems to accompany a series of books and writings that appear two or three the previous year about this "new field", such as the works of Fachruddin M. Mangunjaya, Nature Conservation in Islam (2005)

breakthrough for environmental conservation and "restoration" efforts with a religious perspective. This perspective also emphasizes the importance of religious approaches, including its legal products, in the context of environmental conservation and restoration as a supplement to other existing disciplinary approaches.

2.Understanding fiqh environment

The word "environment", as the translation of the word al-bî'ah in this paper attached with the word "fiqh" which in term means knowledge about the Islamic Shari'ah laws concerning the actions of human beings, in which the knowledge is derived from al-tafshiliyyah[83].

The message of the environment from religion can be transferred and a new inspiration for environmental management. Ijtihâd fuqahâ 'about the true environment can be used as a guide for religious preventive action so that human behavior is not against nature. Environmental pollution and conservation (and restoration) teachings of the environment in both the Qur'an and the Sunnah require methodologies that are not trapped in textual or literal understanding. Otherwise, the richness and superiority of the noble and universal teachings of Islam will be meaningless. New methodologies and approaches need to be formulated seriously as tools for reinterpretation of Islamic teachings, especially those concerning environmental issues. In this case, the revitalization effort of ushûl al-fiqh becomes significant and has a high importance of urgency to support these hermeneutical efforts. Finally, all passed away to the sincerity of the

[83] Abd al-Wahhâb Khallâf, 1978, *Ushûl al-fiqh (*Kuwait: Dâr al-Qalam), Pg. 15.

scholars, scholars, and Muslims as a whole to realize the fiqh of this environment to be a force in doing.

CHAPTER III

THE URGENCY OF JAPAN TO RATIFIED THE VIENNA CONVENTION ON CIVIL LIABILITY FOR NUCLEAR DAMAGE 1997 AND THE OPPORTUNITIES, CHALLENGES FOR JAPAN TO PERFORM CIVIL LIABILITY

A. Description of the Cases

The explosion occurred at the reactors after TEPCO (Tokyo Power Electric Company) drained sea water to cool the reactor directly. The explosion was also called a part of the reactor cooling process that did not endanger the reactor after that radiation levels increased to 8,217 microsieverts in an hour from the previous 1,941 . The annual safe limit is 1,000 microsieverts.[84] Members of the Investigation Commission Team Koichi Kitazawa revealed that the Japanese government was considered irresponsible, and professionally negligent, in handling the security of the Fukushima nuclear reactor.[85]

The government conducted the investigations in September and October last year, measuring tens of thousands of data points around homes, forests, roads and farmland in the open areas of Namie and Iitate, as well as inside the closed Namie exclusion zone. The government plans to open up small areas of the exclusion zone, including Obori and Tsushima, for human habitation in 2023. The

[84] 'Radiasi Nuklir Jepang Berbahaya' (*BBC News Indonesia*, 2018) <https://www.bbc.com/indonesia/dunia/2011/03/110315_Japanradiation> accessed 16 November 2018.

[85] Kebocoran Reaktor Nuklir Fukushima, Pemerintah Jepang Lalai |(*Perpustakaan.bapeten.go.id*, 2018) <https://perpustakaan.bapeten.go.id/kebocoran-reaktor-nuklir-Fukushima-pemerintah-jepang-lalai/> accessed 16 November 2018.

survey shows the decontamination program to be ineffective, combined with a region that is 70-80% mountainous forest which cannot be decontaminated.[86]

Key finding from the Japan survey, Even after decontamination, in four of six houses in Iitate, the average radiation levels were three times higher than the government long term target. Some areas showed an increase from the previous year, which could have come from recontamination. At a house in Tsushima in the Namie exclusion zone, despite it being used as a test bed for decontamination in 2011-12, a dose of 7 mSv per year is estimated, while the International limit for public exposure in a non-accidental situation is 1 mSv/y. This reveals the ineffectiveness of decontamination work. ,At a school in Namie town, where the evacuation order was lifted, decontamination had failed to significantly reduce radiation risks, with levels in a nearby forest with an average dose rate of more than 10 mSv per year. Children are particularly at risk from radiation exposure,In one zone in Obori, the maximum radiation measured at 1m would give the equivalent of 101 mSv per year or one hundred times the recommended maximum annual limit, assuming a person would stay there for a full year These high levels are a clear threat, in the first instance, to thousands of decontamination workers who will spend many hours in that area.[87]

This contamination presents a long term risk, and means that the government's long-term radiation target (1mSv/year which is equivalent to 0.23μSv/hour)[88] are unlikely to be reached before at least the middle of the

[86] Kazue suzuki, 'The Fukushima Nuclear Waste Crisis Is A Human Rights Violation - Greenpeace International' (*Greenpeace International*, 2018) <https://www.greenpeace.org/International/story/11710/the-Fukushima-nuclear-waste-crisis-is-a-human-rights-violation/> accessed 23 October 2018.
[87] Kenji Fukushima, 'Baryonic Matter And Beyond' (2014) 931 Nuclear Physics A.
[88] Ibid,kazue Suzuki.p.g,3.

century in many areas that are currently open and into next century for the exclusion zone of Namie. In an admission of failure, the government has recently initiated a review of its radiation target levels with the aim of raising it even higher.The Government's policy to effectively force people to return by ending housing and other financial support is not working, with population return rates of 2.5% and 7% in Namie and Iitate respectively as of December 2017.In November last year, the UNHRC's Universal Periodic Review (UPR) on Japan issued four recommendations on Fukushima issues. Member governments (Austria, Portugal, Mexico and Germany) called for Japan to respect the human rights of Fukushima evacuees and adopt strong measures to reduce the radiation risks to citizens.[89]

B. The Urgency of Japan to ratify Vienna Convention On Civil Liability For Nuclear Damage 1997 Based on Fukushima cases.

The Japan correspondent for The Chronicle of Higher Education and reporter for the newspaper *The Independent and Irish Times*, investigated the possibility of the most faces terrible from the Fukushima accident - the consequences in humans. More than 150,000 people were evacuated, they lost almost everything and not get enough support and compensation to allow them to rebuild. TEPCO has so far managed to escape from full answer responsibility and fail to compensate people and business - which has dramatically affected by nuclear accidents - correctly. Scheme of greater compensation did not include tens of thousands people who decided to evacuate voluntarily to reduce the risk of

[89] Chisato Jono (*Greenpeace.de*, 2018) <https://www.greenpeace.de/files/publications/Fukushima-bericht-oktober_2017_v2.pdf> accessed 23 October 2018.

radiation exposure.[90]The Fukushima Daiichi nuclear power plant accident inflicted serious damage including the long-term evacuation of citizens as well as the impact on business activities over a wide geographic area, and not only in the Fukushima prefecture where the accident occurred.[91]This is could be the reason why Japan must ratify The Vienna Convention on Civil Liability for Nuclear Damage. Based on the explanation, there are at least three reasons that can be proposed as followed :

1. Vienna Convention on nuclear damage has comprehensive Civil Liability Principles .

Why this point as important reason for Japan to ratify this convention ,since Civil liability gives a person rights to obtain redress from another person e.g. the ability to sue for damages for personal injury. This is the reason why Japan must ratify this convention because without this principles Japan doesn't has basic fundamental to do civil liability and in this convention already written with comprehensive and clear.

The special regime of nuclear liability is based on the following basic principles : [92]

a. Absolute Liability

Absolute liability Under this principle, which greatly facilitates the bringing of claims on behalf of the victims of a nuclear incident, the operator of

[90] David Boilley,"Belajar dari Fukushima" in https://www.greenpeace.org/seasia/id/Global/seasia/report/2012/Pelajaran-dari-Fukushima.pdf Accesed 9,October 2018

[91] Noboru Takamura and others, *'recovery from nuclear disaster in Fukushima: collaboration model'* (2018) 1 Radiation Protection Dosimetry <https://academic.oup.com/rpd/advance-article-abstract/doi/10.1093/rpd/ncy150/5079504> accessed 11 November 2018.

[92] L.F.E. Goldie, 'Concepts Of Strict And Absolute Liability And The Ranking Of Liability In Terms Of Relative Exposure To Risk' (1985) 16 Netherlands Yearbook of International Law <http://www.thejournal.ie/> accessed 23 October 2018.

the nuclear installation is liable for compensation regardless of any fault on his part; the claimant is only required to prove the relationship of cause and effect between the nuclear incident and the damage for which compensation is sought, and the operator cannot escape liability by proving diligence on his part (Articles II and IV). Article IV.1 expressly qualifies the operator's liability as "absolute", in order to make it clear that it is not subject to the classic exonerations such as force majeure, acts of God or intervening acts of third persons, irrespective of whether or not they were reasonably foreseeable and avoidable.[93]

However, Article IV.3 does allow for some causes of exoneration from liability. In fact, the operator is not liable if the incident causing damage is directly due to "an act of armed conflict, hostilities, civil war or insurrection"; neither is he liable, unless the law of the Installation State provides to the contrary, if the incident is due to "a grave natural disaster of an exceptional character".[94] It is, therefore, sometimes argued that the term "strict liability" would be more appropriate in order to describe the nature of the operator's liability.[95]

b. Exclusive liability of the operator of a nuclear installation[96]

The principle of exclusive liability has two main aspects. First of all, liability is legally "channeled" to the "operator"[97] of the nuclear installation to the

[93] Miguel A. Santos, 'The Precautionary Principle And Absolute Liability' (2006) 6 International Journal of Global Environmental Issues <https://www.inderscienceonline.com/doi/pdf/10.1504/IJGENVI.2006.010887> accessed 11 October 2018.

[94] Article IV.7 provides that the Convention does not affect the liability of any individual for nuclear damage caused by that individual's act or omission done with intent to cause damage where the operator is not liable by virtue of paragraph 3

[96] Jaap Spier and Christian von Bar, *The Limits Of Liability* (Kluwer Law International 1996),pg 34-35.

exclusion of any other party potentially liable under general tort law in substitution of, or in conjunction with, that operator. Secondly, the operator incurs no liability outside the system established by the Vienna Convention.[98]

c. Limitation of liability in amount and/or limitation of liability cover

The operator's liability can, first of all, be limited in amount; Article V.1 allows the Installation State to limit such liability to no less than US $5 million for any one nuclear incident. Article V.2 specifies that the amount resulting from the application of this rule is exclusive of any interest and costs are awarded by a court in actions for compensation of nuclear damage; therefore, such interest and costs are payable by the operator in addition to any sum for which he is liable under Article V.1. Article II.3 provides for the case where nuclear damage engages the liability of more than one operator; in such a case, the liability of the different operators involved is "joint and several", i.e. all of them — or, alternatively, each of them — may be sued for the whole amount of the damage;

[97] Under Article I.1(c), "operator" means, in relation to a nuclear installation, "the person designated or recognized by the Installation State as the operator of that installation". Where there is a system of licensing or authorization, the operator will be the licensee or person duly authorized. In all other cases, the operator will be the person required by the competent public authority, in accordance with the provisions of the Convention, to have the necessary financial protection to meet civil liability risks. Therefore, during commissioning, when a reactor is normally operated by the supplier before being handed over to the person for whom the reactor was supplied, the person liable will be appropriately designated by the competent public authority of the Installation State

[98] Article 6(c)(ii) of the 1960 Paris Convention expressly provides that "the operator shall incur no liability outside this Convention for damage caused by a nuclear incident". Although no corresponding provision is included in the 1963 Vienna Convention, this aspect of the principle of exclusive liability may well be regarded as implicit therein. However, a limited exception is envisaged in Article IV.7(b), whereby "nothing in this Convention shall affect … the liability outside this Convention of the operator for nuclear damage for which, by virtue of sub-paragraph (b) paragraph 5 of Article, he is not liable under this Convention"; as a consequence, it will be for the ordinary rules of tort law to determine the operator's liability for "nuclear damage to the means of transport upon which the nuclear material involved was at the time of the nuclear incident".

as a result, the total amount of compensation available in such a case is the sum of the liabilities of the operators involved.[99]

Moreover, Article XV provides that appropriate measures are to be taken by the Contracting Parties in order to ensure that compensation for nuclear damage, interest and costs awarded by a court in connection therewith, insurance and reinsurance premiums and funds provided by insurance, reinsurance or other financial security, or funds provided by the Installation State, pursuant to the Convention shall be freely transferable into: (a) the currency of the Contracting Party within whose territory the damage is suffered; (b) the currency of the Contracting Party within whose territory the claimant is habitually resident; and (c), as regards insurance or reinsurance premiums and payments, the currencies specified in the insurance or reinsurance contract.[100] And d).Limitation of liability in time.

Finally, the operator's liability is also limited in time. In view of the fact that physical injury from radioactive contamination may not manifest itself for some time after the nuclear incident, the adoption of too short a period of limitation would clearly be inequitable. Combined with the difficulty of proving that long term radiation damage is due to a given source, has resulted in the adoption of a term shorter than those usually provided for under the general rules of tort law. In all legal systems there is a time limit for the submission of claims, but, whereas in many States the normal time limit in general tort law is thirty

[99] However, as is specified in Article II.3(b), this rule does not apply to a nuclear incident involving nuclear material in the course of carriage in one and the same means of transport, or, in the case of storage incidental to carriage, in one and the same nuclear installation; in such cases, the total liability cannot exceed the highest amount established with respect to any one of the operators whose liability is engaged.

[100] Article XV Vienna convention for nuclear damage

years, under the Vienna Convention (Article VI.1, first sentence) .Rights of compensation are extinguished if an action is not brought within ten years from the date of the nuclear incident.[101] So this is the reason why Japan urgent to ratify this convention .

2. The revised limits of compensation.

Why that is as important reason for Japan to ratify this convention,since this convention already upgrade for the compensation and because of that Japanese can get worthy compensation in the future.From the cases we can learn many Japanese lost their home and wealth so The primary objective of the revision of the 1963 Vienna Convention was undoubtedly the increase of the minimum level of liability . The aftermath of the Chernobyl incident made it clear that the potential extent of damage caused by a serious nuclear incident is very large. The minimum liability ceiling of which is US $5 million[102] Fixed by the Convention appeared to be too low, especially in the light of the absence of a system of supplementary compensation whereby public funds could be made available to compensate damage in excess of that amount. For need for an increase was made even more obvious by the desirability of amending the definition of nuclear damage in order to cover all possible losses deriving from a nuclear incident. The 1997 Protocol substantially raises the minimum limits of compensation and gives the Installation State two options in respect of the legal

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

[102] As already pointed the United States dollar referred to in the Convention is defined in Article V.3 as "a unit of account equivalent to the value of the United States dollar in terms of gold on 29 April 1963, that is to say US $35 per one troy ounce of fine gold". Therefore, the minimum liability amount established by the Convention is in fact significantly higher than might appear at first sight. Article V.4 further provides that the sum may be converted into national currency in round figures

basis .Moreover, it expressly provides for the case where the operator's liability is unlimited and establishes a "simplified" procedure for amending the liability limits.

The new limits of compensation from the beginning of negotiations there was "general agreement" that the existing financial limits under the Vienna Convention were "inadequate". It was suggested that the limits should not be lower than what could reasonably be insured; on the other hand, the view was also expressed that the limits should be commensurate with the risk and not be linked to insurance capacity.[103]

Although there were occasional discussions on this issue throughout the negotiations, it was agreed that the issue would best be addressed when the process of revision had reached its final stage. In fact, a decision on the limits of compensation was only taken within the Standing Committee at the fifteenth session. The 1997 Protocol amends Article V.1 of the Vienna Convention in order to ensure compensation of nuclear damage up to at least 300 million SDRs.[104]The Installation State can either limit the operator's liability to that amount or to an amount of at least 150 million SDRs, provided that it makes public funds available to compensate damage in excess of that amount up to 300 million SDRs.[105]

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[103] Vienna Convention On Civil Liability For Nuclear Damage | IAEA' (*Iaea.org*, 2018) <https://www.iaea.org/topics/nuclear-liability-conventions/vienna-convention-on-civil-liability-for-nuclear-damage> accessed 12 November 2018.

[104] Under Article I.1(p) of the 1997 Vienna Convention, "'Special Drawing Right', hereinafter referred to as SDR, means the unit of account defined by the International Monetary Fund and used by it for its own operations and transactions".

[105] See Article V.1(a) and (b). As is the case under the 1963 Convention, the 1997 Vienna Convention provides, on the one hand, that "interests and costs awarded by a court in actions for compensation of nuclear damage shall be payable in addition to the amounts referred to in Article V" and, on the other, that those amounts "may be converted into national currency in round figures". However, these provisions now appear in a new Article V A rather than in Article V itself

However, for a transitional period of 15 years from the date of the entry into force of the Protocol, the Installation State can limit compensation to no less than 100 million SDRs.[106] This means that, until 4 October 2018, there could be very different compensation limits in the various Contracting Parties to the Protocol. However even irrespective of that transitional period, there could be very different compensation limits in the Contracting Parties to the amending Protocol, on the one hand, and in the Contracting Parties to the unamend Vienna Convention, on the other hand. Moreover, inasmuch as the limits envisaged in Article V are minimum limits, the amounts of compensation available in the Contracting Parties to the 1997 Protocol may continue to be different even after the elapse of the transitional period. Quite apart from the transitional compensation amount, the amended Article V.2 allows the Installation State to establish a lower amount of liability of the operator in view of the "nature" of the nuclear installation or of the nuclear substances involved, as well as of the "likely consequences" of an incident originating therefrom.

This new provision, which is based on a similar provision in the 1960 Paris Convention,[107] is intended to avoid burdening operators with insurance or financial security costs which are not justified by the risks involved, e.g. in the operation of certain small research reactors or laboratories. However, this option is subject to the condition that the reduced liability amount so established may not be less than 5 million SDRs. Moreover, if the damage in fact caused by an incident is in excess of the operator's liability limit, the Installation State must

[106] See Article V.1(c). A proposal that a phasing-in provision be included in the amended Vienna Convention was made by Bulgaria at the fifteenth session of the Standing Committee and was supported by "a number of countries" on the basis that such a provision "would facilitate the entry into force" of the revised Convention

[107] See Article 7(b)(ii) of the Paris Convention.

make public funds available to compensate that damage up to 300 million SDRs (or, during the transitional period, 100 million SDRs). Another new provision, based, in its turn, on a similar provision in the 1960 Paris Convention,[108] has been inserted in the amended Article V.3, whereby "the amounts established by the Installation State of the liable operator in accordance with paragraphs 1 and 2 of this Article and paragraph 6 of Article IV shall apply wherever the nuclear incident occurs". So it can be a reason why Japan is urgent to ratify this convention.

3. The new heads of damage: Measures of reinstatement of impaired environment and preventive measures

Why this point its very urgent for Japan, According to the Nuclear and Industrial Safety Agency, a nuclear regulatory branch of METI (Ministry of Economy, Trade and Industry) the total amount of radioactive materials discharged from the FDNPS into the air was estimated at approximately 1.6 × 1017 Bq for iodine 131 and at approximately 1.5 × 1016 Bq for cesium 137 .[109] The impact of nuclear radiation is inherent.

It is very dangerous for environmental aspect because of that preventive measure is needed. Quite apart from these three categories of economic loss, another new head of damage, enumerated under (iv), relates to the impairment of the environment. In view of the difficulties involved in the monetary evaluation of environmental damage as such, and apart from loss of income deriving from an

[108] See Article 7(d) of the Paris Convention.
[109] Nuclear Emergency Response Headquarters Government of Japan. (Report of Japanese government to the IAEA ministerial conference on nuclear safety—the accident at TEPCO's Fukushima Nuclear Power Stations. (online) Available at: 2011 (Accessed 4.11.18)

economic interest in the use or enjoyment of the environment which, as seen above, is included under (v), the solution, based on similar solutions adopted by other International conventions, consists in limiting compensation to the costs of measures of reinstatement of impaired environment which are actually taken or to be taken. In addition, the impairment of the environment must not be "insignificant"; but, as was pointed out in respect of economic loss caused by an impairment of the environment, the question of what is a significant impairment is left to the appreciation of the competent court.[110]

The competent court will also have to determine the extent to which damage is to be compensated under this head; in particular, it is expressly stated that damage is to be compensated under this head only in so far as it is not already included in subparagraph (ii), i.e. in the concept of property damage, under the applicable substantive law. For example, measures taken by a farmer whose land has been contaminated will be included, in most cases, in the concept of property damage; subparagraph (iv) is, therefore, mainly designed to cover measures taken in respect of areas owned by the general public. [111]

The amending Protocol inserts in the 1997 Vienna Convention a definition of "measures of reinstatement"[112], to be found in Article I.1(m), whereby these consist of "any reasonable measures which have been approved by the competent authorities of the State where the measures were taken, and which aim to reinstate or restore damaged or destroyed components of the environment, or to introduce,

[110] *Indemnification Of Damage In The Event Of A Nuclear Accident* (Nuclear Energy Agency, Organisation for Economic Co-operation and Development 2003).pg.53.

[111] Assessment on the 66th Day of Projected External Doses for Populations Living in the North-West Fallout Zone of the Fukushima Nuclear Accident," Institute de Radioprotection et de Sûreté Nucléaire,DRPH/2011-10, October 2011.

[112] See Article 1.I The Vienna convention of nuclear damage

where reasonable, the equivalent of these components into the environment". Moreover, under this definition, "the law of the State where the damage is suffered is to determine who is entitled to take such measures". Finally, another head of damage, enumerated under (vi), is constituted by the costs of preventive measures. Indeed, in many legal systems the compensation of damage resulting from a tort may be refused or at least reduced if the claimant fails to take reasonable steps to avoid or mitigate damage. It seems, therefore, reasonable to ensure compensation for the costs of such measures even where they turn out to be ineffective, since they are taken in the interest of the person liable. In the case of nuclear damage, such preventive measures may range from the taking of iodine pills to the evacuation of an entire city or area. Moreover, under subparagraph (vi), the costs of preventive measures also include "further loss or damage caused by such measures"; for example, damage caused by means of decontamination. [113]

So we can conclude the urgency Japan to ratified the Vienna convention for nuclear damage 1997 based on Fukushima cases divided in to the 3 points .First Vienna convention on nuclear damage has comprehensive civil liability principle, Second Vienna convention on nuclear damage has revised limits of compensation and the last point is the new heads of damage: measures of reinstatement of impaired environment and preventive measures. So it could be preventive action for Japan to protect theirs Environmental.

C. **The Opportunities for Japan to Perform Civil liability**

The Fukushima Daiichi Nuclear Power Station (FDNPS) was hit by an earthquake and subsequent tsunami that would lead to the meltdown of multiple

[113] Ramseyer, J. M. (2012). Why power companies build nuclear reactors on fault lines: the case of Japan. Theoretical Inquiries in Law, 13(2), 457–486.

reactors, three hydrogen gas explosions, and a massive release of radioactive material into the land, sea, and air. Many Japanese people seek for the compensation itself. So Japan has opportunities to perform civil liability.

There are two reasons that can be proposed as the opportunities for Japanese government to perfom the Civil Liability as followed :

1. The two options as to the legal basis for compensation

Why it could be the opportunity Japan to perform civil liability is choose significant legal basis for the compensation itself so it make more easiest for Japan to choose necessary legal basis . Under the first option, the operator's liability can be limited to not less than 300 million SDRs (or, during the transitional period, 100 million SDRs). This does not necessarily mean that the operator has to maintain insurance, or other financial security, up to that amount. In fact, Article VII.1(a) of the 1997 Vienna Convention still provides that the operator "shall be required to maintain insurance or other financial security covering his liability for nuclear damage in such amount, of such type and in such terms as the Installation State shall specify".[114] However, that provision still adds that "the Installation State shall ensure the payment of claims for compensation … which have been established against the operator by providing the necessary funds to the extent that the yield of insurance or other financial security is inadequate to satisfy such claims, but not in excess of the limit, if any, established pursuant to

[114] Article III of the Vienna Convention requires the operator liable to provide the carrier with a certificate issued by or on behalf of the insurer or other financial guarantor furnishing the financial security required pursuant to Article VII. However, unlike the 1960 Paris Convention (Article 4(c)), the 1963 Vienna Convention does not expressly allow a Contracting Party to exclude this obligation in relation to carriage which takes place wholly within its own territory. The 1997 Protocol amends Article III of the Vienna Convention in order to bring it in line with the Paris Convention.

Article V". Thus, where the operator is not required, or is unable, to insure his liability, or to maintain other financial security, up to the limit of 300 million SDRs (or, during the transitional period, 100 million SDRs), the Installation State will have to provide public funds up to that amount in order to cover the operator's liability.

Under the second option, the operator's liability can be limited to not less than 150 million SDRs (or, during the transitional period, to an unspecified amount lower than 100 million SDRs), provided that the Installation State makes public funds available to compensate damage in excess of that amount up to at least 300 million SDRs (or, during the transitional period, 100 million SDRs). Even if this option is taken, it remains true that, in theory, the operator could not be required, or could be unable, to insure his liability up to 150 (or 100) million SDRs and that the Installation State would then have to provide funds in order to ensure coverage of the operator's liability; In addition to that, however, the Installation State would still have to provide public funds in excess of the operator's liability, up to 300 (or 150) million SDRs. The 1997 Protocol has, therefore, introduced an element of supplementary compensation into the Vienna Convention, since the additional funds made available by the Installation State under the second option could not technically be considered as cover of the operator's liability.[115] On the other hand, in the context of the 1997 Vienna Convention, this new element exclusively relates to the legal basis for compensation and does not affect the total amount of compensation available.

[115] The Draft Protocol which the Standing Committee, at the end of its negotiations, recommended for adoption contained an Article V B.2, whereby "the obligation of the operator to pay compensation, interest or costs out of public funds made available pursuant to sub-paragraphs (b) and (c) of paragraph 1 of Article V shall only be enforceable against the operator as and when such funds are in fact made available"

Article V appears to impose on the Installation State a mere International obligation to make public funds available: the question of whether or not the Installation State, as opposed to the operator, is liable under its domestic law for damage exceeding the operator's liability limit is left open by the 1997 Vienna Convention and has to be answered on the basis of the law of the Installation State.

The 1997 Protocol contains some further provisions relating to the situation where the Installation State is to make public funds available in order to compensate nuclear damage. [116]Article II.3 of the 1963 Vienna Convention provides that, in cases where nuclear damage engages the liability of more than one operator and the damage attributable to each operator is not separable, the operators involved are "jointly and severally liable", i.e. all of them — or, alternatively, each of them — may be sued for the whole amount of the damage; as a result, the total amount of compensation available in such a case is the sum of the liabilities of the operators involved.[117] Moreover, under Article II.4, where several nuclear installations of one and the same nuclear operator are involved in one nuclear incident, such an operator is liable in respect of each installation involved up to the amount applicable with respect to him pursuant to Article V.[118]

These provisions remain unchanged in the 1997 Vienna Convention. However, in both cases a provision is added whereby the Installation State may limit the amount of public funds made available per incident to the difference, if

[116] Section 1.3.3 explanatory text oh Vienna convention on nuclear damage
[117] It has specified in Article II.3(b), this rule does not apply to a nuclear incident involving nuclear material in the course of carriage in one and the same means of transport, or, in the case of storage incidental to carriage, in one and the same nuclear installation; in such cases, the total liability cannot exceed the highest amount established with respect to any one of the operators whose liability is engaged.
[118] See article V

any, between the amounts thereby established and the amount established pursuant to Article V.1.1.So two options as to the legal basis for compensation can be opportunity for Japan to choose this legal basis .

2. The Extension of Liability In Time

The last opportunity for Japan is the extension of liability in time become the opportunity because this extension can give opportunity for Japan to prepare more the idea to perform civil liability itself and also Japan can get opportunity by the extension of liability in time and because of the government has time to withdraw state funds and wait for funds from foreign countries to be collected .Many Fukushima people became a victim of this disaster and because in Vienna convention of nuclear damage 1997 already has extension of liability it can make more easiest for Japan to do the civil liability .

In addition to the low amount of the operator's liability, the limitation of that liability in time, as provided for in the 1963 Vienna Convention, also appeared to be inadequate. A widespread feeling that the period of ten years therein provided for was too short emerged from the relevant literature, especially in view of the peculiarities of some radiation effects; it was pointed out, in particular, that latent personal injury such as cancer may become manifest many years after radiation exposure[119], especially as far as genetic damage was concerned. From the very beginning of negotiations for the revision of the Vienna Convention there was "general agreement" on the need to extend the period of limitation for the submission of claims relating to personal injury. As a result, the 1997 Protocol amends Article VI of the Vienna Convention to the effect that,

[119] 'Liability' (*TheFreeDictionary.com*, 2019) <https://legal-dictionary.thefreedictionary.com/liability> accessed 13 January 2019.

whereas rights of compensation in respect of other damage are still extinguished if an action is not brought within ten years from the date of the nuclear incident, a longer period of thirty years applies to the extinction of rights of compensation in respect of loss of life and personal injury. And then The extended period appears in the new paragraph 1(a) of Article VI.[120] Moreover, the possibility still remains for the law of the competent court to provide for longer periods of extinction if, under the law of the Installation State, the liability of the operator is covered for a longer period by insurance or other financial security, including State funds. In that case, the period of extinction cannot be longer than the period for which the operator's liability is so covered. This possibility is envisaged in Article VI.1(a). Of course, in both cases the possibility of obtaining compensation after the elapse of ten years from the date of the incident will largely depend on whether or not the funds available have already been exhausted. Indeed, Article VI.1(c) makes it clear that the additional claims thus admitted to compensation, i.e. both the claims relating to loss of life and personal injury and, in case of an extension under Article VI.1(b), the claims relating to other types of damage, are to be satisfied without reducing the amount of coverage available for the claims introduced within the basic ten-year period.[121]

Article VI.3 of the 1963 Vienna Convention currently allows the law of the competent court to establish "a period of extinction or prescription of not less than three years from the date on which the person suffering nuclear damage had knowledge or should have had knowledge of the damage and of the operator

[120] See article VI Vienna Covention On Nuclear Damage

[121] Under the amended Article 8(b) of the Paris Convention, actions for compensation brought within the longer period established by national legislation cannot affect the right of compensation of any person who has brought an action: (i) within a thirty-year period in respect of personal injury or loss of life; (ii) within a ten-year period in respect of all other damage.

liable for the damage". [122]So this could be opportunity for Japan to perform civil liability .

D. **The challenges for Japan to Perform Civil liability**

The Japanese government has recognized for the first time that a worker at the Fukushima Daiichi nuclear power plant has died as a result of radiation exposure.[123] The power plant suffered a severe meltdown during the devastating Tōhoku earthquake and tsunami in 2011.The challenges for Japan to perform civil liability it's very hard. 150,000 people were evacuated, they lose almost everything and not get enough support and compensation to allow them to rebuild. TEPCO has so far managed to escape from responsibility full answer and failed to compensate people and business - which has dramatically affected by nuclear accidents . The challenges that may be faced by the Japanese government When the Japanese government ratify the Convention, as followed :

1. The case where the operator's liability is unlimited

Why this could be challenge for Japan to perform Civil liability? since this happens because enormous decontamination program initiated by the Japanese government has failed to significantly reduce radiation levels in many areas across Fukushima. Justified on the grounds of permitting the lifting of evacuation orders for tens of thousands of evacuees, it has instead only decontaminated small areas of the landmass of the most heavily contaminated districts while creating a vast nuclear waste stockpile for which there is no long term solution. Transporting the nuclear waste to the ISFs and incineration plants over the coming years will

[122] Vienna Convention On Civil Liability For Nuclear Damage | IAEA' (*Iaea.org*, 2018) <https://www.iaea.org/topics/nuclear-liability-conventions/vienna-convention-on-civil-liability-for-nuclear-damage> accessed 23 October 2018.
[123] 'Japan Admits First Fukushima Nuclear Death' (*BBC News*, 2018) <https://www.bbc.com/news/world-asia-45423575> accessed 12 November 2018.

require several million transports. The prospects are that if all the waste is eventually relocated to Okuma and Futaba it will not be removed within the agreed 30 year timeframe, they will thus likely become permanent nuclear dumps.[124]

There are born some support was expressed for the idea of unlimited liability of the operator. On the other hand, it was pointed out by some delegations that unlimited liability might prove illusory if the assets of the operator were not adequate, and that the focus should rather be on providing an adequate financial cover for the operator's liability.[125] But, as was pointed out in Section 1.3.1, the liability limits established by the 1963 Vienna Convention are minimum limits, and the same still holds true for the 1997 Vienna Convention. Therefore, nothing prevents the Installation State from establishing higher limits for the operator's liability or, indeed, no limit at all. Some States have in fact opted for unlimited liability of the operators of nuclear installations. However, even where the Installation State has opted for unlimited liability, it still has to decide up to what amount the operator is required to maintain insurance or other financial security covering his liability, since insurance coverage cannot be unlimited. The 1963 Vienna Convention is silent on this issue and thus leaves the Installation State free to establish the amount of insurance or other financial security covering the operator's liability.

[124] Modelling the global atmospheric transport and deposition of radionuclides from the Fukushima Dai-ichi nuclear accident T. Christoudias1 and J. Lelieveld1,2 1The Cyprus Institute, Nicosia, Cyprus 2Max Planck Institute of Chemistry, Mainz, Germany Atmos. Chem. Phys., 13, 1425–1438, 2013 www.atmoschem-phys.net/13/1425/2013/ accesed 10 october 2018

[125] See documents NL/2/4, p. 5; SCNL/1/INF.4, p. 9. At the third session, a draft provision was adopted whereby the operator could not have benefited from limitation of liability in case he had deliberately not fully applied binding regulations on nuclear safety and had knowledge that the incident could have been avoided if those regulations had been applied (so-called "breakability" of limitation of liability) (see document SCNL/3/INF.2/Rev. 1, Annex I, p. 5

On the other hand, under Article VII.1 of the 1963 Convention, the Installation State would have to provide public funds in order to ensure the payment of all claims established against the operator, [126]irrespective of any limit it may have established for the amount of insurance or other financial security, to the extent that the yield of financial security is inadequate to satisfy such claims. The situation is very different from under the 1997 Vienna Convention. The amending Protocol inserted in Article VII.1(a) of the Convention a new provision to the effect that, where the liability of the operator is unlimited, the Installation State cannot establish a limit which is lower than 300 million SDRs for the financial security required to maintain. On the other hand, this same provision introduces a limit to the State's obligation to cover the operator's liability which is not presented in the 1963 Convention; in fact, the Installation State is still required to ensure the payment of claims established against the operator to the extent that the yield of the financial security is inadequate to satisfy such claims, but only up to 300 million SDRs (or any higher amount it may have established as the limit of that financial security). In this respect also, the amending Protocol takes the special situation of low-risk installations into account. [127]Under Article VII.1(b) of the 1997 Vienna Convention, the Installation State, "having regard to the nature of the nuclear installation or the nuclear substances involved and to the likely consequences of an incident originating therefrom", may establish a lower amount of financial security of the operator, provided that "in no event shall any amount so established be less than 5 million SDRs". If, however, the damage in fact caused by an incident proves to be in excess of that amount, the Installation State

[126] Article VII.1 of the 1963 The Vienna Convention of Nuclear Damage
[127] The amending Protocol inserts in Article VII.

must ensure the payment of claims for compensation which have been established against the operator by providing necessary funds up to 300 million SDRs or any higher amount established pursuant to Article VII.1(a).[128] So that's could be the challenge for Japan to perform civil liability .

2 . Fukushima Environmental Recovery

The next challenge after Japan ratifies The Vienna convention on nuclear damage is environmental recovery. Environmental recovery is very urgent to make Fukushima be inhabited again but The Cleaning Fee for the Fukushima Nuclear Disaster is very expensive This figure does not include the cost of properly disposing of contaminated material, cleaning the Fukushima reactor and handling the leakage of contaminated water into the Pacific Ocean, or appropriate compensation for 150,000 disaster victims who did not receive fair treatment by TEPCO owners of the Fukushima nuclear plant and the government.

Seven years after the start of the Fukushima Daiichi nuclear disaster, the radiation levels in areas of Namie and Iitate where evacuation orders were lifted in March 2017 remain too high for the safe return of thousands of evacuees.[129] In the "difficult to return to" highly contaminated exclusion zone in Namie, the radiation levels clearly show that there is no prospect of a safe return becoming possible over the long term.

In 2018 there clearly remains a radiological crisis not just within the restricted exclusion zones but also within the non-restricted areas of Namie and

[128] This provision was inserted at the sixteenth session of the Drafting Committee on the basis of a proposal by Japan (document, pp. 17 and 34).
[129] Reconstrcution Agency, "Regarding Authorization of Namie town Specifc Reconstruction and Recovery Base Area Plan", see http://www.reconstruction.go.jp/topics/main-cat1/sub-cat1-4/saiseikyoten/material/20171222_kouhyou_namie_tokuteifukkosaiseikyotenkuikifukkousaiseikeikaku.pdf .Acceses 11 october 2018

Iitate.[130] To clarify the use of the word emergency: if these radiation levels were measured in a nuclear facility and not at the homes of citizens of Namie and Iitate, immediate action would be required by the authorities to mitigate serious adverse consequences for human health and safety, property or the environment.

The impact of radiation caused at the events of the Fukushima Daiichi nuclear power plant moves the IAEA as an International organization that oversees nuclear use. related to these events, the IAEA has a direct role, namely assisting and overseeing by organizing the IAEA International Peer Review Mission, which is a mid-term plan for the decommissioning, decontamination and remediation of Fukushima Daiichi nuclear power plants units 1-4.[131] The International Peer Review Mission is a mission that has been applied to the IAEA Action Plan on Nuclear Safety which aims to create high level safety and security for the entire world. Because is long term mission until now Japan cant give certainty of time about the environmental recovery itself.so it can be a biggest challenge for Japan to do in environmental recovery.

[130] Asahi Shimbun, "Elimination of Fukushima evacuees from list slammed", , see http://www.asahi. com/ajw/articles/AJ201708280053.htmlAcess 11 october 2018

[131] Tae Ho Woo, '*Atmospheric Modeling Of Radioactive Material Dispersion And Health Risk In Fukushima Daiichi Nuclear Power Plants Accident*' (2013) 53 Annals of Nuclear Energy <http://www.airies.or.jp/attach.php/.../save/0/0/20_1%2C2-4.pdf> accessed 12 November 2018.

CHAPTER IV

CONCLUSION AND RECOMMENDATION

Accident of the Fukushima Daichi nuclear power plant has an impact on humans security in the form of threats to environment and economy security . In fact, the explosion occurred at the reactors after TEPCO (Tokyo Power Electric Company) drained sea water to cool the reactor directly .After that Nuclear power plant get leakage and of course this happen because Human error and government unpreparedness in managing the nuclear power plant .Threat to environmental safety in the form of contamination scattered around the reactor which includes air (atmosphere), waters and soil. This impact too resulting in the community not being free from taste afraid of scattered contamination raises public concerns. Contamination also causes a decrease in the quality of the environment when there is no one who can guarantee the cleanliness and health of the environment moreover people in Fukushima loss of residence and land of work. This condition shows that human dignity should be guaranteed, cannot materialized. The threat of environmental security becomes trigger to the emergence of economic security threats. Contamination that causes quality degradation environment causes economic security problem. The threat of economic security becomes a disruption of business activities and production.

The Production process in agriculture and livestock were broken, People's main income decreased, increased costs (production costs, transportation, and transactions) for agricultural businesses, the loss of the value of agricultural land and unused capital materialized and increased health costs. Some Japanese

local products cannot be exported to several countries so that people are working in this sector can lose their job. The threat of economic security can be seen from the compensation given to the victims. People who are victims complain about the amount of compensation given because it doesn't match to losses.

A. The Urgency of Japan to ratify civil liability in Vienna convention

Scheme Greater compensation does not include tens of thousands people who decide to evacuate voluntarily to reduce the risk of radiation exposure Their life. One of the reason why Japan must ratified the Vienna convention on civil liability for nuclear damage 1997 because it has new dispute settlement procedure Unlike the 1960 Paris Convention, the 1963 Vienna Convention makes no provision for the settlement of disputes between contracting parties concerning its interpretation or application.

Furthermore, the reason why Japan must ratified The Vienna convention on civil liability for nuclear damage is because in this convention it has already stated the main principles of civil liability itself for example like first, The operator of a nuclear installation is exclusively liable for nuclear damage. Second, Strict (no fault) liability is imposed on the operator. Third, Exclusive jurisdiction is granted to the courts of one State, to the exclusion of the courts in other States and Fourth Liability is limited in amount and in time.

Second the reason why Japan must ratified the Vienna convention on civil liability for nuclear damage 1997 because it has revised limits compensation .This new provisions has similar provisions in the 1960 Paris convention .and the last reason is The new heads of damage: Measures of reinstatement of impaired

environment and preventive measures so Japan can prevent for the future to protect their environmental. The amending Protocol inserted in the 1997 Vienna Convention is the definition, Stated Article I.1(n), whereby "preventive measures" means "any reasonable measures taken by any person after a nuclear incident has occurred to prevent or minimize damage", but "subject to any approval of the competent authorities required by the law of the State where the measures were taken".

B. **The challenges and opportunities for Japan to perform Civil Liability**.

After that Japan faces Challenges and Opportunities for Japan to perform Civil Liability. First Japan government has two options as the legal basis compensation The two options as to the legal basis for compensation Irrespective of the minimum levels of compensation, the 1997 Protocol gives the Installation State two options, which need to be explained in some detail. Under the first option, the operator's liability can be limited to not less than 300 million SDRs or, during the transitional period, 100 million SDRs.

The extension of liability in time In addition to the low amount of the operator's liability, the limitation of that liability in time, as provided for in the 1963 Vienna Convention, also appeared to be inadequate. A widespread feeling that the period of ten years therein provided for was too short emerged from the relevant literature, especially in view of the peculiarities of some radiation effects; it was pointed out, in particular, that latent personal injury such as cancer may become manifest many years after radiation exposure, especially as far as genetic damage was concerned. From the very beginning of negotiations for the revision

of the Vienna Convention there was “general agreement” on the need to extend the period of limitation for the submission of claims relating to personal injury. As a result, the 1997 Protocol amends Article VI of the Vienna Convention to the effect that, whereas rights of compensation in respect of other damage are still extinguished if an action is not brought within ten years from the date of the nuclear incident, a longer period of thirty years applies to the extinction of rights of compensation in respect of loss of life and personal injury. For the challenging for Japan itself The amending Protocol inserts in Article VII.1(a) of the Convention a new provision to the effect that, where the liability of the operator is unlimited, the Installation State cannot establish a limit lower than 300 million SDRs for the financial security he is required to maintain.

About the cleaning fee for environmental recovery is very expensive so it could be the hard challenge to do the civil liability , After that Japan can respect the rights of persons living in the area of Fukushima, in particular of pregnant women and children, to the highest level of physical and mental health, notably restoring the allowable dose of radiation to the 1 mSv/year limit, and by continuing support to the evacuees and residents.

C .Recommendation

The radiation happen because Fukushima power plant personel pulverizing the nuclear power plant with the sea water their do wrong step to prevent the high temperature in nuclear power plant,after that the leakage appear in all of

Fukushima area and because of that Japan must provide full compensation and financial support to evacuees, and take measures to reduce radiation exposure based on science and the precautionary principle to protect public health and allow citizens to decide whether to return or relocate free from duress and financial coercion. The Urgency of Japan to ratify the Vienna convention of civil liability is because nuclear radiation impact .it is very dangerous for human or environment itself and the Fukushima Daiichi nuclear power plant accident inflicted serious damage, including the long-term evacuation of citizens as well as the impact on business activities over a wide geographic area, and not only in the Fukushima prefecture where the accident occurred. Until now Japan does not ratify The Vienna Convention on Civil Liability for Nuclear Damage .The fact that Japan is close to China, North Korea and South Korea .Because of that's its very dangerous if Nuclear power plant get leakage . And for the recommendation The Vienna convention on civil liability for nuclear damage it is very important to ratify and because Japan its part of IAEA. So IAEA should make Vienna convention on civil liability for nuclear damage as main agreement is as follows, Terms of collective agreement. (1) A collective agreement shall - (a) be in writing and signed by the parties to the agreement; (b) contain the date on which it is to become effective;(c) contain procedures for the avoidance and settlement of disputes arising out of the interpretation, application and administration of the agreement, which may include a reference to conciliation or arbitration; (d) provide for such other matters as may be agreed between the parties. After that in which all members need to ratified. Therefore the case of Japan could be settled promptly by IAEA.and also for Indonesia is not urgent to make nuclear power

plant in our country because of the geographical aspect for Indonesia its very dangerous to make nuclear power plant because Indonesia located between 2 plate also same like Japan so it make vulnerable to Indonesia get earthquake and also tsunami.

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