

International liability for damage caused by nuclear leaks

Fukushima accident as a model

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ABSTRACT:

This article is a legal international discussion in which I deal with the direct impact of legal liability for damage caused by nuclear leaks. This discussion focuses on highlighting the direct impact of the conventions regulating them, on the one hand, and the mechanisms to deal with these leaks in case of peaceful use resulting in damage, on the other hand, the adequacy of the international texts (conventions) for the protection of affected parties, whether States or persons, and the alignment of the domestic texts of States with international conventions in this context.

Key words: Legal Liability, Environment, Nuclear Leaks

ملخص باللغة العربية:

هذا المقال عبارة عن مناقشة دولية قانونية أتناول فيها الأثر المباشر للمسؤولية القانونية عن الأضرار الناجمة عن التسريبات النووية، وتركز هذه المناقشة على إبراز التأثير المباشر للاتفاقيات التي تنظمها من جهة، والآليات للتعامل مع هذه التسريبات في حالة الاستخدام السلمي الناتج عن الضرر من ناحية أخرى، ومدى كفاية النصوص الدولية (الاتفاقيات) لحماية الأطراف المتضررة، سواء الدول أو الأشخاص، ومواءمة النصوص المحلية للدول مع الاتفاقيات الدولية في هذا السياق.

الكلمات المفتاحية: المسؤولية القانونية، البيئة، التسريبات النووية.

Introduction

Allah the Almighty says in the Holly Quran, Surah Er-rum:
“Corruption has appeared throughout the land and sea by [reason of]

what the hands of people have earned so He may let them taste part of [the consequence of] what they have done that perhaps they will return [to righteousness]”¹. Contemplating this verse reveals that Man is the only cause of the desolation of the land and the sea, i.e., the environment, in the modern sense.

In fact, the environment has become one of the most important topics that are addressed and discussed in modern times, if not the most important topic at all, as it is the framework in which this human being lives, i.e., his medium. Therefore, any development made by man becomes meaningless without development in environmental conservation, because the destruction of the environment is detrimental to the human being. That was the origin of sustainable development that has been linked to the environment.

The concept of sustainable development emerged in 1987 to mark the publication of the report of the United Nations Commission on Environment and Development (UNCED) chaired by Brundtland. This report was a major source of development leading to the 1992 Earth Summit in Rio de Janeiro.²

1 Verse 40, Surah Er-rum “ Holy Quoran ”.

2 In fact, the Algerian legislator defined sustainable development in Law number 03-01 of February 17th, 2003 on the sustainable development of tourism as follows: “Sustainable development is a pattern of development in which options and opportunities for development that preserve the environment, natural resources and cultural heritage of future generations are secured”. Dr. Abdelmoneim Ben-Ahmed believes that this definition was not clear, not to mention linking sustainable development to future generations without reference to present generations. cf.

Nuclear energy is one of the most important energy sources and has many peaceful uses, even though many people associates it with military uses. It is used for medical purposes, electrical power generation and other peaceful uses that are beneficial on all aspects of life, as well as it contributes to sustainable development. States that suffer from scarcity of energy resources resort to generating electricity through nuclear reactors because they are less expensive than other sources such as oil and gas. The use of nuclear technology to get energy is the main source of energy access in the future, as the increase of the world's dependence on oil and gas, and the use of coal to obtain energy have become costly and detrimental to the environment. Actually, the problem of energy caused by the oil appeared after breaking the Arab supplies of oil to Europe and the United States in October and November 1973.¹

Nuclear energy is likely to play a role alongside other energy sources, but it is important to meet rising energy needs as an

Abdelmoneim Ben-Ahmed, Administrative Legal Means for Environmental Protection in Algeria, thesis to obtaining doctorate degree in public law, Faculty of Law, University of Algiers, 2009, p. 32.

The legislator redefined sustainable development in Article 40 of Law number 03-10 of July 19th, 2003 on the environmental protection in the context of sustainable development, in which it states: "... Sustainable development means the reconciliation of sustainable social and economic development, with environmental protection, i.e., the inclusion of the environmental dimension in a development framework that ensures that the needs of present and future generations are met".

1 JOHN T. EDSALL, *Hazards of Nuclear Fission Power and the Choice of Alternatives*, *Environmental Conservation*, Vol. 1, No. 1, Spring 1974, p. 21.

alternative to carbon-based energy, because of concerns about the use of carbon energy that causes global warming. Moreover, nuclear energy is one of the States' aspirations to meet their obligations to produce electricity through alternative sources.¹

According to the trade estimates made by the US Department of Energy, total world nuclear energy generation could exceed 2005 levels by 35 percent in 2015 and 70 percent in 2030.²

Until the end of 1970, nuclear reactors provided about 5% of the world's electricity production, but, today, they provide a much higher level of electricity, about 16% of world electricity production.³

This study is very important because of the high use of nuclear energy for peaceful purposes supported by many people since nuclear energy, here, is used for peaceful purposes only without military ones, which gives it priority and removes any opposition against it. However, this tendency should not be considered a lot, because these peaceful uses do not mean that nuclear energy is safe, but, undoubtedly, there are enormous and dangerous risks with the use of this energy, even if there are much precautions, such as the nuclear leaks from Japanese reactors by the earthquake that hit Japan in March

1 International Energy Agency. *World Energy Outlook 2007*. November, Paris (2007). cf. Nourane Taleb Washash, *International Relations and the Internationalization of Peaceful Nuclear Energy*, Magister dissertation, The Arab Open Academy in Denmark, 2009, p. 58.

2 US Department of Energy, *International Energy Outlook 2006*, Washington, DC: Energy Information Administration (2006). cf. Nourane Taleb Washash, *Op. Cit.*, p. 59.

3 Nourane Taleb Washash, *Op. Cit.*, p. 60.

2011, which caused nuclear leaks that exceeded the statutory limits. As it is known, these leaks have crossed the Japanese border and recorded radiation levels that have crossed natural boundaries to neighboring states.

This accident raises several legal problems regarding the international liability for these leaks and damage caused by them. To what extent is Japan liable for damage caused by leaks from nuclear reactors? On what basis can this liability be established? What is the body authorized to consider compensation in case of liability? We will answer these questions through the following subjects:

Subject I: What is Nuclear Damage?

The occurrence of damage leads to liability in general, whether in domestic or international law. Therefore, we have to speak here about damage. In fact, if environmental damage has characteristics distinguishing it because of its nature, nuclear damage has more characteristics distinguishing it because of the specificity of nuclear energy. Radiation exposure can cause adverse health effects that clinically emerge, in the case of large doses, among people exposed to radiation after a short time, such as nausea, redness of the skin, or, in the extreme cases, severe symptoms called inevitable effects that occur if the dose exceeds the trigger level. Radiation exposure may also have other effects, such as cancers that appear after a period and

can be detected in populations by epidemiological methods. This should occur over the full range of doses without a trigger level¹.

The contaminant accumulates in the environment over time, and damage caused by its presence is increased and exacerbated by the accumulation of the contaminant. From this particular nature, the stored contaminants create a complexity in the reliance on dependency between the present and the future. i.e., the specific damage of the future relies on the current actions.²

It is noted that the International Law Commission has substantially developed its work with regard to international liability for the transboundary damage. It defined the risk of causing significant transboundary damage as a risk with high probability to cause significant transboundary damage, and a low probability to cause serious transboundary damage. It also defined damage as damage caused to people, properties and environment, and indicated that transboundary damage is caused to a territory other than the State of origin, or to other places under the jurisdiction or control of that State, whether or not the concerned States have common borders. The State of origin is the State in whose territory, or under its jurisdiction or control is carried out the planning of activities not prohibited by international law and that involve the risk of causing significant trans

1 Mamdouh Hamed Attia, *Sahar Mustafa Hafed, Radiation Hazards Between the Environment and Legal Legislation in the Arab World, First Edition, Dar Al-Fikr Al-Arabi, Cairo, 2005, p. 355.*

2 Jalal Banna, *Economic Standards for Environmental Problems, First Edition, Modern Arab Bureau, Alexandria, 2007, p. 115.*

boundary damage because of their material consequences or the implementation of such activities.¹

Nuclear radiation is widespread in various parts of the world because of nuclear tests or uses of the atom for peaceful purposes. It is noted here that the radiation rates vary from one region to another; it may be very large, resulting in enormous damage, for example, the tests conducted by the United States of America on Bikini islands in the Pacific Ocean, where the population has been deported for up to a hundred years. Radiation rates may be lower in safe limits, but it is uncertain that these safe rates do not pose future risks because future impacts are always unknown.²

There are advocates and opponents for the peaceful use of nuclear energy. Debates have been intense between them following the Pennsylvania incident in the United States of America in April 1979 because of a failure in one of the valves at the power plant of Three Mile Ireland, which almost led to a tragic disaster. Because of this accident, anti-nuclear activity organizations and authorities, in the United States of America and outside, claimed the closure and

¹ *United Nations, General Assembly, International Law Commission A56 / 10, p. 333.*

We note here that the previous report of the Commission defined the risks of causing significant transboundary damage as a type of risk of serious damage and a strong probability of causing other serious damage between the high probability of causing serious damage and the low probability of causing serious damage. Cf. United Nations, General Assembly, International Law Commission, p. 273.

² *Majid Ragheb Al-Hilw, Law on the Protection of the Environment in the Light of Sharia, Knowledge Establishment, Alexandria, 2002, p. 330.*

disposal of nuclear power plants, but the advocates saw that the generation of electricity by nuclear energy is an urgent need considering the tremendous industrial development in human history. They added that the Pennsylvania incident and others were due to the lack of the necessary precautionary measures to prevent nuclear radiation hazard. Moreover, they reinforce their view that the current uses of fossil energy resources such as oil and coal are not less detrimental than peaceful uses of nuclear energy.

We also note that similar reactions have occurred in the States that have nuclear reactors, such as Germany, Britain and Japan that is the second State in the peaceful use of nuclear energy. These States have done a thorough examination of the nuclear facilities on their territories.¹ In fact, there are great difficulties we face when trying to determine the environmental damage the most important of which are:

1 / The difficulty of proving damage and linking it to its origin, on the basis that the effects of radiation leaks may extend for successive generations. Therefore, in this case, it is difficult to prove the causal link between damage and the action caused it.²

1 - *Ibid.*, pp. 331, 332 and 333.

2 Abbas Abdelkader, *Violation of International Regulations for Environmental Protection*, Magister dissertation, Faculty of Law and Political Science, University of Djelfa, 2010, p. 103.

2 / The nature of environmental damage that occurs gradually, especially damage caused by radiation leaks, since damage caused by the latter does not appear until after a period of occurrence.¹

3 / Damage caused by nuclear leaks transcends the borders of the State where these leaks occurred. It may occur thousands of kilometers in different ways, such as animal deaths, contaminated rainwater, or polluted crops, water, etc.

The 1997 Vienna Convention defined nuclear damage as one of the following cases:

1 / Loss of life or exposure to wounds.

2/ Loss or damage to property.

In the following cases, to the extent decided by the competent court:

1/ Economic losses resulting from loss or damage resulting from loss of life, exposure to wounds, or loss or damage to property.

2/ Rehabilitation measures of damaged environment.

3 / Loss of income resulting from economic interests arranged in the environment and from damage caused to the latter.

4 / Expenses of preventive measures, losses and damage resulting from these measures.

1 Ahmed Abdelkarim Salama, *Environmental Protection System, comparative mainstreaming research, without a publishing house, Cairo, 1990, p. 384.*

5 / Any other economic losses except those related to environmental damage if they are adopted by the law governing civil liability and applied in the competent court.

Damage may be, here, radiation leak from the nuclear facility or radiation from nuclear fuel, radioactive material or waste coming from, to or manufactured in the nuclear facility, whether the leak is caused by radioactive properties, or a combination of radioactive properties with explosive or harmful chemicals in any form.¹

The nature of damage caused by the use of nuclear energy has had a major impact on assessing the adequacy of the application of the traditional international liability rules. It is noted that the vast majority of the contemporary international law scholars have been based on the special character of this damage in their call for the need to develop the international liability rules to meet this damage.² The Stockholm Environment Conference noted that: "States must cooperate to develop international law in respect of liability and compensation to victims of contamination and other damage caused by the activities located within the jurisdictions of these States or under their control, and affect the territories located outside their jurisdictions".³

1 Article 1 (f) of the Convention on Supplementary Compensation for Nuclear Damage, September 12th, 1997, The 1997 Vienna Convention on Civil Liability for Nuclear Damage and the 1997 Convention on Supplementary Compensation for Nuclear Damage- Explanatory Texts, IAEA International Law Series, N ° 03, Vienna, p 141 and 142.

2 Samir Mohamed Fadel, *International Liability for Damage Caused by the Use of Nuclear Energy in Peacetime*, World of Book, Cairo, 1976, p. 103.

3 Principle 22 of the Stockholm Conference Declaration.

The specific nature of nuclear damage does not lie only in its seriousness, but also in the difficulty to prove damage, on the one hand, and the disability to attribute this damage to its source, on the other hand. The plaintiff must prove that the damage is caused by atomic radiation, then, he must prove the source of this radiation.

It is easy to detect direct damage unlike indirect one because it is difficult to find indirect effects immediately after exposure to nuclear radiation. The effects of the latter may not appear before hours, and may extend for weeks, months, years and even from a generation to another. Therefore, it is hard to determine its source, especially for diseases that may result from other non-nuclear causes such as leukemia, infertility and others. These factors inevitably lead to great difficulty in finding the real source of damage, thus, it is not easy to find the causal link between damage and the act causing it, which is the prerequisite of liability both at the domestic and international levels.¹

Subject II: Legal Mechanisms Regulating Legal Liability for the Peaceful Use of Nuclear Energy

In this subject, we deal with the most important legal conventions regulating the liability resulting from the peaceful use of nuclear energy considering that this activity is internationally legitimate, since there are no texts prohibiting it, but there are texts regulating. Therefore, it is very important to study these texts .

1 Samir Mohamed Fadel, *Op. Cit.*, p. 104.

Section I: Paris Convention of 1960 on International Liability in the Nuclear Field

This treaty was concluded on July 29th, 1960 and signed by sixteen Western European States. This treaty has established the investor's civil liability for nuclear damage on the basis of the idea of objective liability that determined that the investor is objectively liable for the nuclear damage caused by the energy center he invests.¹ Since the adoption of Paris Treaty, a series of conventions, on repairing damage caused by nuclear accidents or incidents.²

Section II: Vienna Treaty of May, 21st, 1963 on Civil Liability for Nuclear Damage Caused by an Accident at a Nuclear Facility

This Treaty aims to establish a regime of liability for nuclear damage similar to the regime adopted by the Paris Convention to be applied worldwide. It has determined that the investor is the liable. It was about compensating the nuclear damage and defined the investor as the person recognized by the public authorities as an investor of a nuclear facility. It defined, in the first paragraph of article I, the expression of a nuclear facility as "including every nuclear reactor

1 Jasser Mouslim El-Dalla'in, *International Liability for Detrimental Environmental Action in International Law*, Magister dissertation, Amman Arab University for Higher Studies, 2006, p.52.

2 Jutta Brunée, *Of Sense and Sensitivity: Reflections on International Liability Regimes as Tools for Environmental Protection*, *International and Comparative Law Quarterly*, volume 53, April 2004, p. 357.

except the reactor used as a source of energy, every means of transport, every plant producing or processing nuclear fuel, and every site earmarked to the storage of nuclear material except storage during transport".

The Brussels Treaty of May 25th, 1963 on the liability of operators of nuclear ships. It establishes the rules of liability arising from the nuclear ships operation in accordance with the principles of liability for the fixed atomic establishment. It determined, in the first paragraph of article II, the objective liability of nuclear ships operators as follows "the nuclear ship operator bears absolute liability for any nuclear damage subject to prove that such damage is caused by a nuclear accident, including the nuclear fuel of that ship, or the radioactive products and wastes from that ship".¹

Section III: International Convention on Nuclear Safety

The Chernobyl accident has shown that the current regime of liability is insufficient to ensure fair compensation as soon as possible, especially for significant damage, due to the limited territorial application of this regime and the narrow definition of damage, as well as the modest compensation it awards.²

After the Chernobyl accident, the industrialized States adopted the safety standards approved by the International Atomic Energy

1 Jasser Mouslim El-Dalla'in, *Op. Cit*, p.52.

2 Mohamed Elbaradei, Edwin Nwogugu, John Rames, *International Law of Nuclear Energy: An Overview of the Legal Framework*, IAEA Bulletin, Volume 3, 1995, p.20.

Agency (IAEA) that could conclude two international conventions on nuclear accidents and ratify them in record time.¹

The International Convention on Nuclear Safety was adopted in Vienna by representatives of 84 States on June 17th, 1994 without a vote. Its preamble states that the international community should ensure the safe and regulated use of nuclear energy and the preservation of the environment. It also specifies that the State uses nuclear energy is liable for the safety use of the latter.

Nevertheless, international efforts in the field of nuclear security have become the task of all participants in this regard. Hans Blix, the Director of the International Atomic Energy Agency at that time, indicated that any accident anywhere in the world would lead to radiation leaks that cross the borders, which leads to undermining confidence, among public opinion, in nuclear energy as a safe source of energy. He added that through this convention, States will provide themselves with a set of safety rules.²

Subject III: The Basis of International Liability for Damage Caused by the Peaceful Use of Nuclear Energy

International liability is critical. In this context, Dr. Benamer Tounsi says: “The rules on State liability in public international law are a fundamental legal regime considering the safeguards they

1 David A. V. Fischer, *The Future of the IAEA, Program for Promoting Nuclear Non-proliferation, Issue Review*, N ° 02, December 1993, p 02.

2 Odette Jankowitsch, *Frantz-Nikolaus Flakus, International Convention on Nuclear Safety: A legal milestone, IAEA Bulletin, Volume 3, 1994, p. 36.*

determine to ensure that the obligations imposed by international law on people are respected, and the sanctions they provide for violation and non-fulfillment. Thus, the liability provisions contribute, to a large degree, in the stability of international situations”.¹

Dr. Mohamed Sami Abdelhamid defines it as follows: “For the existence of international liability, an act attributable to a State (or an international organization), serves as a basis in international law, must takes place and be detrimental to another person of international law”²

Dr. Samir Mohamed Fadel defines international liability by saying: "International liability is a legal situation under which the State, to which an act or activity is attributed, observes the compensation of damage caused to another State or one of its nationals as a result of this act or activity”.³

International liability was, initially, established on fault-based theory that has developed until including risk rooting.

Some scholars believe that it is not easy to apply the traditional rules of international liability for environmental damage, preferring to resort to non-traditional administrative, technical or legal means to achieve effective protection of the environment in light of developments in the international community, which was touched by Principle 22 of Stockholm Declaration on the Environment in 1972,

1 Benamer Tounsi, *The Basis of International Liability in Light of Contemporary International Law*, First Edition, Aleppo Publications, 1995, p. 7.

2 Mohammed Sami Abdelhamid, quoting Jasser Mouslim El-Dalla'in, *Op. Cit.*, p. 9. , p.

3 Samir Fadel, quoting Jasser Mouslim El-Dalla'in, *Op. Cit.*, p. 10.

and Principle 13 of the Rio de Janeiro Declaration of 1992 that both provides for international cooperation to promote the development of the rules of international liability for environment damage.

The problem, here, is that nuclear reactors generating electrical power are run by private companies and are not state-owned is raised. Thus, the State is not directly liable, which is questionable whether the principles of international liability can be realized in this case. In fact, in this case, the so-called “indirect liability” of the State is resorted to by the availability of a set of conditions, most importantly, the State fault or failure to fulfill its international obligations. If this is proved, the State is liable for the activities of individuals or persons within the framework of indirect international liability.

There are many activities detrimental to the environment conducted by private companies. The State does not directly accomplish them, but it is limited to imposing restrictions and licenses on activities and controlling their works. Therefore, the state can be directly and not indirectly liable for damage caused by these activities, resulting in a kind of efficiency of the State liability consistent with environmental protection requirements. Accordingly, the State should take all necessary action to prevent persons under its jurisdiction from carrying out any activities detrimental to the environment. If the State does not fulfill its obligations, it will be exposed to international liability.¹

1 Talal Ben-Saif Ben-Abdullah EL-Hosani, Protection of the International Environment from Pollution, 2005, p. 32.

It should be pointed out that the fertile application of the theory of risk must be in domestic law, since applying it absolutely in international law is tainted with much reservation among a wide community of international law scholars.

The majority of jurisprudence agrees to establish international liability for the peaceful use of nuclear energy based on risk. Paul Rutter says, in this regard : “If the peaceful use of nuclear energy and the diverse tests in outer space permitted to establish a special regime of liability, without objection on the adequacy of this step, this is, certainly, due to the extraordinary nature of the risks they create”.¹

Dr. Samir Mohamed Fadel also said that:” The State engaged in any peacetime atomic activity should be obliged to compensate damage caused by this activity on the basis of strict liability without fault of this State, if it is found that it has taken all precautions to prevent damage caused by this activity to affect other States, and did not break, in the exercise of this activity, any of the customary or conventional rules of international law”.²

Dr. Benamer Tounsi thins otherxise and does not agree with Dr. Samir Mohamed Fadel’s point of view about the establishment of liability based on the theory of risk, since the State, in this case, does not have any liability because it do not commit a fault and do not violate any international obligation. The State is obliged, here, to provide compensation for damage caused to other States so as the victim does not remain without compensation - considerations dictated

1 cf. Benamer Tounsi, *Op. Cit.*, p. 121.

2 cf. Benamer Tounsi, *Op. Cit.*, p. 122.

by justice. However, if the State refused to provide this compensation, its liability arises because of the violation of an international obligation, which provides that each State engaged in serious activity, awards compensation for damage caused to others, i.e., its liability is established by rejecting the principle of compensation.¹

Subject IV: Objective or Absolute Liability for Damage Caused by Nuclear Leaks

Ibrahim Ali defines it as the State liability for damage caused by legitimate activities involving considerable risks, regardless of failure, negligence or fault on the part of the State – It is a liability without fault for a dangerous activity.²

It is noted, here, that there is no need for fault or illegitimate international action or contrary to an international obligation to establish the State liability, so long as the State activity causes damage to another State. Therefore, this theory is an application of the theory of profit with loss stating that the State that benefits and profits from this activity, should bear the consequences and risks of the latter, even if legitimate.³

Many international conventions established the objective liability including The International Convention on International Liability for

1 Benamer Tounsi, *Op. Cit.*, pp. 122 and 123.

2 Ibrahim Ali, *International Rights and Duties in a Changing World*, p. 647, cf. Mohamed Sanitan El-Zu'bi, *International Liability for Damage Caused by Nuclear Waste*, Magister dissertation, Faculty of Law, Middle East University, 2010, p. 41.

3 Mohamad El-Majdoub, *Mediator in International Public Law*, 2003, p. 260, cf. Mohamed Sanitan El-Zu'bi, *Op. Cit.*, p. 42.

Damage Caused by Ships or Space Objects issued by the United Nations General Assembly Resolution number 2777 of November 29th, 1971, which states in its second article II that “the absolute liability should be borne to pay compensation for damage caused by a space object above ground or aircraft during flight”

Canada, therefore, demanded the Soviet Union in 1978 to pay compensation for damage caused by the fall of the Cosmos 954 satellite over Canadian territory. The Soviet Union paid compensation on the basis of objective liability.¹

The scholar Duncan Currie believes that it is illogical to grant courts within their jurisdiction they occur, the power to adjudicate compensation for nuclear damage. He demands that such powers be granted to impartial courts, since the courts within their jurisdiction nuclear facilities are located, will apply the law of the State in which they exist, which is not in favor of victims, limit the value of compensation with the narrow definition of damage.

For an effective compensation regime, Currie suggests what follows:

- 1 / Absolute liability for nuclear accidents must be established.
- 2 / Compensation value should not be limited.
- 3 / There must be a long and just time to claim compensation.
- 4 / All liable parties must bear liability.

¹ Mohamed Sanitan El-Zu'bi, *Op. Cit.*, p. 42 .

5 / There should be impartial courts to adjudicate the claims of affected people.

6 / There should be a specific definition of compensable damage.

7 / There should be clear rules of proof.¹

A problem related to the States that are not parties to the conventions on civil liability for damage caused by nuclear energy is raised, because the number of the producers of electricity through nuclear power is significant and they are not all in States parties to the conventions on civil liability. According to statistics in 2006, 52% of nuclear facilities exist in States not parties to these conventions.²

It is noted that the majority of the world's population lives in States that have not joined these conventions, therefore, additional efforts should be made³ to find ways of compensation for damage caused to these people.⁴

If a nuclear accident, at a facility located in a State that is not party to these conventions, occurs, the victims will be in a difficult situation in terms of obtaining compensation for damage they suffered, starting with the problems related to their right to accessing

1 Ved P. Nanda, Jon M. VanDyke, *International Nuclear Law: an introduction, Nuclear introduction Macro*, 2008, p. 6.

2 Julia A Schwartz, *Op. Cit.*, p. 63.

3 Medous Falah El-Rashidi, *Activating the Rules of International Environmental Law, Interest, Rules and Means of Protection, Conference Paper Towards an Effective Role of Law in the Protection and Development of the Environment in the United Arab Emirates*, 2-4 May 1999, Al-Ain, United Arab Emirates, p. 8.

4 Julia A Schwartz, *Op. Cit.*, p 64.

justice, the party against which the lawsuit should be filed, the competent courts to consider the claim, and the party on which the burden of proof lies.¹

01. International custom:

Custom does not give rise to a legal rule unless it is repeated and universal, which leads States to think that it is a binding rule. Among the rules that protect the general interest of international community those which require States to prevent environmental hazard, and which are based on a previous rule has arisen from international practices; this is the rule that makes States liable for damage caused to others.

02. Rio and Stockholm Declarations:

There is considerable debate about whether these two declarations are considered sources of international environmental law. Some scholars think that they are secondary sources and do not amount to original ones unless they are applied by the International Court of Justice or by any other judicial authority.

Indeed, International Environmental Law defines so-called “flexible law”, which is the opposite of the rigid law embodied in international treaties and custom, as “Decisions, recommendations, declarations and resolutions of various institutions that have been established under international law”.²

Although flexible law lacks binding power, it plays a crucial role in determining exceptions that shape the future of international law, in

¹ Julia A Schwarts, *Op. Cit.*, p 65.

² Ellika Louka, *Op. Cit.*, p. 25.

general, and international environmental law, in particular, since the principles specified by flexible law are often adopted as treaties binding on States parties.

Seidl-Hobenveldern argues that the State cannot accept a principle and act contrary to it except in the case of fundamental changes. Tecllaf indicates that fundamental principles such as good-neighborliness and abuse of rights lack the precision necessary to be applied strictly to the issues at stake.¹

Subject V: Other Principles of Liability for Damage Caused by the Peaceful Use of Nuclear Energy

There is, in fact, a set of principles by which international liability for damage caused by the peaceful use of nuclear energy can be rooted, since these principles have contributed to root international liability for damage caused to the environment, such as Detrimental Use of Territory Principle (Section I), Precautionary Principle (Section II), and Polluter Pays Principle (Section III), all detailed as follows:

Section I: Detrimental Use of Territory Principle

Contemporary jurisprudence recognizes the State liability for environmental damage to other States because of the persons' actions within the State's territory, since States must maintain security and public order based on their territorial sovereignty. It is not necessary

¹ Winfried Lang, *UN-Principles and International Environmental law Max Planck*, Volume 3, 1999, p. 157.

to find organizational, regulatory, or contractual link between people and the State, since the only criteria is that people should be subject to its control and guidance.¹

It is noted that scholars differed on the legal basis to raise the State liability in this case, in two opinions:

1/ Basing on detrimental use of territory principle: There is a customary principle in international law called “non-detrimental use of territory”, which is based on due diligence principle, i.e., the State should take all sufficient and reasonable measures and precautions to prevent any detrimental acts that may occur through its territory and cause environmental damage to other States. In the case of State complacency and failure to take such measures, its international liability should be established.²

2/ Basing on the relevant treaties in force: It is known that treaties set out specific obligations to each party. The State is, more and more, involved in the activities that require special licenses or control such as licensing ocean dumping. In case of damage caused by these activities, the State bears liability for it because it could have prevented such acts from the beginning.³

One example of the adoption of detrimental use of territory principle for the establishment of international liability is the famous arbitration case of “Trail Smelters” in 1935, in which the United States sought compensation for fumes from Trail smelters in Canadian

¹ Jasser Mouslim El-Dalla'in, *Op. Cit.*, p. 25.

² *Idem.*

³ *Ibid.*, p. 26.

territory near the American border, after the court ruled in favour of the United States and recognized that “Under the principles of international law. . . No State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence”. The court decided to compensate the United States for harm suffered. Thus, the State cannot invoke national sovereignty to harm other States.¹

Section II: Precautionary Principle

Precautionary Principle is one of the most important principles have been adopted because of the tremendous technological development witnessed by humanity, and the need to reconcile science with technological development and environmental preservation. Rio Declaration contains a set of principles aimed at sustainable development, including precautionary principle embodied in Principle 15 of the declaration.²

It should be noted, here, that there are concerns about the use of precautionary principle in disrupting commercial traffic, restraining scientific and technological development and accessing to decisions originating from fear rather than scientific facts.³

1 *Ibid.*, p. 36, cited by Elli Louka, *Op. Cit.*, p. 40.

2 Philippe Sands, *Principles of International Environmental Law*, second edition, Cambridge University Press, United Kingdom, 2003, p. 56.

3 Elli Louka, *International Environmental Law: Fairness, Effectiveness and World Order*, Cambridge University Press, United Kingdom, 2006, p. 34.

We find that the European Union has adopted precautionary principle as a constitutional principle, which gave it great strength and obligation.¹

According to which the lack of technology given current scientific and technical knowledge should not delay the taking of effective and appropriate action to prevent the risk of serious damage to the environment at an economically reasonable cost.²

The Chernobyl nuclear accident of April 26th, 1986 that has become a last warning, has opened the door wide to doubt the ability of science to adequately insure the potential risks of its applications. It has been shown to humanity that if science solves problems, it creates others. Day after day, disasters lead to serious damage could never be repaired; in addition, problems and damage are complicated and abound with the development of science and technology.

Damage caused by the Chernobyl accident to both individuals and society, was expensive and resulted in the loss of human lives, injuries, diseases, stress, physical damage, environmental damage and economic losses. Damage was almost endless and losses caused by the accident were immeasurable.³

This has resulted in human awareness of the limits of his knowledge, and it has become necessary to think and work, in the long

1 *Ibid.*, p.51.

2 Ben-Ahmed Abdelmoneim, *Op. Cit.*, p. 20.

3 Julia A Schwartz, *International Law of Nuclear Civil Liability: after Chernobyl*, OECD, 2006, p. 42.

term, to avoid irreparable risks as possible. The rights given to man over the environment must be followed by duties towards the latter. Therefore, it is imperative, in this case, to implement precautionary principle.¹

It is noted that the International Initiative for Citizenship adopted by the United Nations has relied on three basic principles as follows:

- 1 / Adopting precautionary principle to face environmental challenges.
- 2 / Adopting initiatives to develop greater liability regimes.
- 3 / Promoting the development and diffusion of the use of environmentally friendly technology.²

Section III: Polluter-pays Principle

Polluter-pays principle requires that whoever causes damage by taking environmentally detrimental activity should bear all costs to prevent such damage. This principle is economically originated, and states that goods or services offered in markets must reflect the cost of the used materials, including environmental materials, since the removal of polluting wastes from air is a type of using these resources in production factors.³

The European Security and Cooperation Organization defined polluter as “who directly or indirectly causes damage to the

1 Precautionary Principle in International Environmental Law, Magister dissertation, 2005, pp. 34 and 35.

2 Philippe Sands, Op. Cit., p. 116.

3 Abbas Abdelkader, Op. Cit., p. 91.

environment or creates conditions leading to such damage”. Dr. Yahia Wanas says, in this regard, “While the economic standard applied to know the polluter seems simple and does not raise any economic controversy, it does not legally answer all questions related to the traditional fault-based liability rules in determining the liable”, since polluter-pays principle is automatically applicable, even in the absence of fault, as an economic concept. Moreover, polluter-pays principle does not investigate the direct liable for pollution or interrelated factors of liability for the occurrence of pollution. Thus, jurisprudence considers that the financial burden borne by the polluter by applying economic standard is not a product of purely legal liability, because polluter-pays principle establishes an objective financial burden on the polluter, without constituting prior opinion or affecting the polluter’s civil or criminal liability, because it aims to deduct expenses”.¹

Conclusion

It is clearly demonstrated after this presentation that the peaceful use of nuclear energy is inevitable and very necessary for the generation of electricity as an important activity, especially for Japan as a country that does not have natural resources helping it to provide sources of energy. The following facts can be recognized:

¹ Wanas Yahia, *Legal Mechanisms for Environmental Protection in Algeria*, Doctorate thesis, Faculty of Law, University of Tlemcen, 2007, p. 76.

1. We have conceded that although the uses of nuclear energy for peaceful purposes, damage they may cause may be disastrous, so caution and vigilance are inseparable and necessary.
2. Considering the nature of such damage, there must be a regime of liability for compensation for it simply because it is unreasonable that victims remain without compensation.
3. Because liability could not be implemented, here, on the basis of fault theory because no fault has been made and the matter concerns a natural disaster. Thus, other parallel elements should be sought for rooting liability in this case.
4. The idea of objective or absolute liability should be implemented and rooted, as the idea of liability without fault, based on risks, has emerged.
5. In addition, there are rules of international law, in general, and international law of the environment, in particular, that should be used in this case. It concerns precaution and polluter-pays principles, as well as the role played by flexible rules of law in this case.

As a conclusion, States - Japan in this case - bear liability for damage caused by radiation resulting from the earthquake, even if nuclear energy is used for peaceful purposes.

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