

INTERNATIONAL EFFORTS TO PROTECT THE ENVIRONMENT FROM NUCLEAR POLLUTION

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Abstract:

The environment occupies the concerns of the international community as a whole due to the importance of the environment as a human and legal value, as the right to the environment is a human right, and in view of the growing environmental dangers facing the environment, especially in the modern era in which elements of environmental destruction have increased, the most dangerous of which is nuclear pollution. Therefore, it was necessary to combine international efforts to protect the environment, especially in light of the widespread uses of nuclear energy in all industrial, agricultural and medical fields, the most dangerous of which is the nuclear weapon that destroys the environment and the threat of its use, as the humanitarian and legal duty is imposed on the international community. Taking all measures to protect the environment from the danger of this pollution. Accordingly, we will discuss these efforts and the extent of their effectiveness, while introducing nuclear pollution and its sources.

Keywords: Environment, Nuclear pollution, International efforts, Protection.

INTRODUCTION:

In the introduction, Man lives in the environment, which is the sum of material elements such as water, air and soil. He breathes and eats his food there. Therefore, he cannot live in isolation from the environment. That is why international and national legislation recognizes that the right to the environment is a human right, so it was necessary to preserve it from all attacks that cause damage to an element of the environment or deprive him of the right to enjoy it, clean and healthy, in order to improve health and food security for humans.

The issue of protection against the dangers of nuclear and radioactive contamination is considered one of the most important topics on the international and national scene, both ancient and modern, given that radioactive nuclear weapons are destructive to man and the environment as a whole, as they undergo complete nuclear destruction and pose serious dangers to the environment, as their effects persist for hundreds of years, making the earth polluted, unfit for life, carcinogenic and uninhabitable¹.

The world has witnessed the horrors of the bombs of Hiroshima and Nagasaki in 1945, which at the same time resulted in the death of more than 110,000 people, not to mention the nuclear pollution in the region and all its neighboring regions, whose damage defies any description of pollution, especially since its effects last for millions of years, besides the fact that environmental pollution is a widespread damage that knows no boundaries and moves from one place to another at great speed, not to mention that it affects all elements of the environment, whether it is air, water, oceans, soil, plants, living organisms or humans, due to the spread of waste, nuclear elements and radioactive elements resulting from the use of dual nuclear energy, which relies on nuclear fuel or in the production of nuclear weapons or medical and agricultural equipment, in the construction of roads in rock, in the construction of bridges and in the world's electricity production, because 70 percent of it comes from nuclear energy, and this spread of nuclear

¹- Mustafa Bawadi , Threats of nuclear radiation to the natural environment and ways to address them at the international level, Al- Ijtihad Journal for Legal and Economic Studies , Volume 9, Number 2, Tamanghasset University , year 2020, P331.

particles is the result of nuclear leaks despite international agreements and strict safety precautions, but human and technical errors often lead to serious disasters, due to nuclear tests and the burial of their waste, the best proof is what was left by the nuclear crimes of French colonialism in the Algerian desert on February 13, 1960¹.

In our article, we will discuss the various international efforts to protect the environment from nuclear pollution, particularly in light of the widespread production and use of nuclear energy in peace and war, and the adequacy of these efforts to answer the following questions:

What do we mean by nuclear pollution? What are the international efforts to protect the environment from the dangers of nuclear pollution and their adequacy?

To address this problem, we follow the following plan:

1- Concept of pollution, nuclear pollution of the environment and its effects.

1.1- Definition of nuclear pollution of the environment

1.2- Sources of nuclear pollution of the environment

1.3 - The effects of nuclear pollution on the environment

2- International efforts to protect the environment from the dangers of nuclear radiation.

2.1- International agreements and treaties.

2.2- International mechanisms for protecting the environment against the danger of nuclear radiation

2.3- The effectiveness of international efforts to protect the environment from the dangers of nuclear radiation

1- Concept of nuclear pollution of the environment and its effects.

Given the importance of the subject, we have tried in this article to familiarize ourselves with some definitions of radioactive contamination of the environment, mentioning its sources and its effects on the environment.

1-1 - Definition of radioactive pollution of the environment:

The term radioactive pollution has spread in the international community and among all official and unofficial bodies, but its content is considered somewhat ambiguous, since it is one of the most dangerous pollutants of the environment. To determine its definition, the definition of the environment and then the definition of radioactive pollution were used according to the following detail:

A - Definition of the environment: The term environment is considered a term composed of several terms and many meanings, addressed by various linguistic, jurisprudential and legal definitions. We will focus our study on the legal aspects of its relationship with the specialty, especially since various international and national legislations have addressed and explained its content, that the aspect protected by international law and international custom, and this is in accordance with international declarations and agreements, especially after the Stockholm and Rio de Janeiro conferences, however, by defining the environment we mean all the components, living or not, that make up the environment in which we live and that interact with each other to form the ecosystem, which includes air, water, soil, plants, animals and microorganisms², as well as the natural resources and sources on which humans depend for a better life. Among the most important definitions that define the environment, we find its content in the middle of the United Nations Framework Convention for Protection against Climate Change in 1992, which is considered one of the most recent and important international agreements focused on protecting the environment

¹ - Sabah Al- Ashawi , International responsibility for environmental protection, first edition, Dar Al-Khaldounia , Algeria, 2010, P03.

² - M.K.Tolb / Develobber sans detruire / por un environnement vecu / france . 1984 / p 37

from climate change and specifically from greenhouse gases dispersed in the atmosphere, as well as the Kyoto Protocol of 2015.

B - Definition of nuclear pollution:

Nuclear pollution is scientifically defined as a physical phenomenon that occurs in the atoms of unstable elements, in which the atom loses some of its particles and transforms into another element and another isotope of the same element, which causes environmental pollution¹.

C - Legal definition of nuclear pollution: The International Convention for the Suppression of Acts of Nuclear Terrorism defined in its Article 1 that "the term radioactive material means nuclear material and other radioactive material containing nuclides that spontaneously disintegrate, a process accompanied by the emission of one or more types of ionizing radiation. Such as alpha and beta rays, neutron particles and gamma rays, which can cause, due to their radioactive and fissile properties, physical effects that can lead to death and pollution of environmental elements².

The Algerian legislator has defined nuclear radiation as any electromagnetic or particulate radiation that can lead to the destruction of the matter exposed to it, directly or indirectly.))⁴

1.2- Sources of nuclear pollution of the environment:

The sources of nuclear pollution are distinguished into two main sources, natural and artificial, namely pollution caused by man or without human intervention, and by this we mean the natural phenomena that cause it, such as earthquakes, volcanoes, etc., and what is certain is that man bears the legal responsibility for pollution⁽³⁾.

- Natural sources of radioactive pollution:

There is no doubt that in the layers of the earth there are many cosmic rays and various minerals and components, and that due to natural phenomena, including earthquakes and volcanoes, an explosion of nuclear rays or the destruction of nuclear power plants, such as the Fukushima nuclear accident in Japan in 2011, and these are sources that humans do not have to discover, as we mentioned before.

A- Cosmic rays : These rays are the most important sources of nuclear pollution. They are scattered in space or come from sunlight and other galaxies, the exposure rate of an individual to them is about 200 milli rem (⁴) . The atmosphere protects humans from cosmic radiation to which humans are naturally exposed up to 30% (⁵).

B- Radiation of the Earth's crust: The earth's crust contains many naturally radioactive elements, such as uranium and thorium, which are considered radioactive isotopes. They are either alone or as one of the elements in radioactive decay chains or radioactive diodes. The rocks of the earth's crust and soil contain many radioactive elements that give the human race, in particular, a dose of radiation varies from person to person and from place to place.

¹ - Ali Saidane , Protecting the environment from pollution by radioactive and chemical substances in Algerian law, first edition, Dar Al- Khaldounia , Algeria, 2008, P26.

² - Decree No. 05-118 of April 11, 2005 relating to the memorization of foodstuffs, Official Journal No. 27 of 2005.

³ - Ali Saidane , Legal protection of the environment against pollution by dangerous substances in Algerian legislation, doctoral thesis, supervised by: Abu Bakr Idris, Department of Public Law, Faculty of Law, University of Algiers, Ben Youssef Ben Khaddah , 2007

⁴ - rem :....

⁵ - Ahmed bin Muhammad Al-Sari'i and Hassan Othman Muhammad, Radioactive Pollution of the Environment , a series of specialized publications published by the Standing Committee on Radiation Protection, King Saud University , Saudi Arabia, 1998, P3. 2325

C- Radiation inside the human body : In its physical structure, the human being contains radioactive isotopes. They contain potassium and carbon, potassium is of great importance because it emits beta rays and gamma rays, which are high rays.

D- Air : Air is considered a source of nuclear radiation, as it is scientifically known that air molecules are loaded with many radioactive particles from various nuclear power plants and complexes and the rest of the explosions, whether inside the seas and oceans from nuclear reactors and during radioactive nuclear explosions in mines and factories during refining and mining operations ⁽¹⁾.

E- Sol: Radioactive materials spread widely in the ground and give a dose of radiation to humans that sometimes exceeds the dose of radiation resulting from cosmic rays. The intensity of the dose of radiation emanating from the ground varies from place to place and sticks to the soil, rocks and boulders. The best known of these are potassium 40, rubidium 6 and uranium 238 ⁽²⁾ .

F - Water: Water, like various elements of the environment, is polluted by radioactive atoms resulting from various nuclear tests and by the rest of the waste that mixes with rainwater when it falls with radon and eruptions, as well as with groundwater.

- Industrial sources of radioactive pollution:

Human hands are commonly involved in causing radioactive contamination, which often results in serious environmental damage. The most significant of these sources are of several types, including:

A- Nuclear reactors: The first nuclear reactor was built in 1942 under the leadership of Enrico Fermi, after which the huge Manhattan Project was created to build nuclear weapons after the end of World War II. After that, military nuclear industries spread to many countries, both in peacetime and wartime, which doubled nuclear pollution in many parts of the world ⁽³⁾ . This reminds us of the horrific Chernobyl nuclear accident in Ukraine, the Fukushima accident, and the Three Mile Land accident⁽⁴⁾.

B - Nuclear tests: They are considered one of the most important sources of nuclear radiation and environmental nuclear pollution, and countries have rushed to attract them secretly or openly in all areas, such as seas and oceans, the United States of America tested 66 hydrogen bombs between 1946 and 1958 ⁽⁵⁾, and this problem constitutes one of the most important challenges of international environmental law.

Among the most significant nuclear accidents are the nuclear tests carried out in the Algerian desert, where the French occupation carried out seventeen nuclear tests, which caused devastating pollution of the desert environment, also on March 7, 1983, when a nuclear engine with an estimated capacity of 110 of enriched radioactive uranium U235 collapsed in the Atlantic Ocean ⁽⁶⁾

C- Use of weapons: They are considered the most dangerous weapons of mass destruction compared to biological and chemical weapons, because they are blind weapons that do not

¹ - Ahmed bin Muhammad Al-Sari'i and Hassan Othman Muhammad, Radioactive Pollution of the Environment , a series of specialized publications published by the Standing Committee on Radiation Protection, King Saud University , Saudi Arabia, 1998, P6.

² - The same reference P06.

³ - Maamar Ratib Mohamed Abdel Hafedh , Possession and Use of Nuclear Weapons in the Light of International Covenants and Agreements, A Step Forward Towards the Disarmament of Weapons of Mass Destruction, Dar Al- Kutub Al- Qaniya , Dar Shatat Publishing and Software, Egypt, 2014, P21.

⁴ Litim Nadia, The role of international organizations in protecting the environment from pollution by hazardous wastes, PhD thesis, Faculty of Law and Political Science, Haj University Lakhdar , 2010-2011. P29.

⁵ - Arms control and international Environmental Law , Stockholm institute for Scandinavies Law 2009,P20

⁶ - Tabel Mahmoud Al-Hassan, Atomic Waste and Nuclear Tests at Sea and Their Dangers to the Marine Environment, Security and Life Magazine, No. 373, College of Science, Taibah University , Saudi Arabia,P62.

differentiate between civilians and soldiers, their effects are devastating for the environment and humans. The 1967 Treaty banning nuclear weapons in America defined a nuclear weapon as "any device capable of releasing nuclear energy without control, it possesses properties that make it suitable for military use ⁽¹⁾.

D- Radioactive waste: Nuclear waste is considered one of the most significant and dangerous sources of radioactive pollution, despite the technological challenge of its treatment. Nuclear waste is the remainder of the materials used in the production of peaceful and military atomic energy, as defined by the Basel Convention on the Control of the Transport of Hazardous Wastes and their Disposal, in its second article ⁽²⁾. Perhaps the closest example is the scandal of the US government that buried its nuclear waste, represented by uranium, in the Arabian Gulf during the Second Gulf War.

E- Nuclear weapons accidents and radiation leaks: History confirms that the exploitation of nuclear energy has caused many very serious nuclear accidents, especially during its transport by aircraft, nuclear submarines and ships, and during its storage, which have had devastating effects on the global environment. The accidents are the Tchernobyl accident ⁽³⁾ in Ukraine and the Fukushima accident in Japan ⁽⁴⁾.

1.3 - Effects of radioactive pollution on the environment:

The United Nations General Assembly Resolution No. 59/44 concerning atomic radiation stated that the General Assembly, is concerned about the harmful effects that could be inflicted on present and future generations due to the levels of radiation to which the environment and all elements of the environment around us are exposed, we will try here to present the effects of radioactive contamination of the environment.

A- Effects of radioactive contamination on non-human organisms (biological diversity) :

The United Nations Scientific Committee on the Effects of Radiation on the Environment recognized in its 1996 report the magnitude of the danger posed by human exposure to nuclear radiation, which causes incurable and hereditary diseases leading to a high number of deaths ⁽⁵⁾.

B - Effects of radioactive contamination on abiotic elements:

The biosphere of the environment consists of three elements: the terrestrial environment, the aquatic environment and the air environment. Each of these elements is vulnerable to radioactive contamination for various reasons, so we will try to talk about the effects of environmental pollution in its three elements: water, soil and air, in addition to its effect on food.

B-1 - Effects of radioactive pollution on air:

Case law defines air pollution by nuclear radioactive materials as: "the mixing of the natural components of the air, namely oxygen and nitrogen, with radioactive pollutants beyond the maximum limit which must not be exceeded."

Accordingly, from the above, air pollution by radiation can be defined as any leakage or introduction of radioactive materials or elements into the physical composition of the air element

¹ - The Treaty prohibiting nuclear weapons in Latin America, in accordance with the resolution issued by the General Assembly of the United Nations, No.: 1911, on December 27, 1963

² - Basel Convention on the control of transboundary movements of hazardous wastes and their disposal of 03/22/1989

³ - Bernard Weissenfels, L'énergie en 2050 nouveaux défis et faux espoirs, EDP sciences, France, 2005, p 83

⁴ - Ali Saidane, Protecting the environment from pollution by radioactive and chemical substances in Algerian law, first edition, Dar Al- Khaldounia, Algeria, 2008, P 42.

⁵ - Report of the United Nations Scientific Committee on the Effects of Atomic Radiation on its fifty-sixth session, 10-18 July 2008, P34.

to the extent that it harms the health of living organisms and the environment in general, air pollution by radioactive materials is considered one of the most dangerous forms of air pollution.

B-2 - Effects of radioactive pollution on the water element:

Water is the basis of life for all living organisms, and no organism is devoid of the element water in its composition. Life on earth would be impossible if this element disappeared or was seriously polluted. Thus, radioactive pollution of water can be defined as: "the introduction of foreign radioactive elements into the physical and chemical components of the water element and which renders the latter unfit for its natural uses", resulting in damage that affects the health of humans and other living organisms, and several sources are responsible for radioactive contamination of sea water, rivers and groundwater. ⁽¹⁾

B.3- Effects of radioactive contamination on the soil element:

Soil is one of the most important resources and the basis of life on the Earth's surface, as it is considered the basis of terrestrial and natural ecosystems and consists of organic matter formed during very complex processes. Soil also considered a renewable natural resource of the environment and one of the fundamental requirements for the continuation of life on the Earth's surface. It is equal in importance to water and air. Soil is polluted by the introduction of foreign materials, which causes a change in its physical and biological properties. This would eliminate the living organisms that live in the soil. Soil is polluted by the materials loaded with it and soil pollution can occur as a result of a radioactive leak of radioactive waste that has been disposed of in a dangerous manner ⁽²⁾.

B.4- Effects of radioactive pollution on animals and plants:

The risk of radioactive material leaking to humans via plants does not depend on direct human consumption of these plants contaminated by radioactivity.

2- International efforts to protect the environment from the dangers of nuclear radiation.

2.1 - International agreements and treaties:

The US nuclear war against Japan and its disastrous effects on the environment with its various elements have been the cause of the conclusion of many bilateral and multilateral international instruments with a view to the final status of weapons of mass destruction, the most important of which are:

- * An Agreement on Measures to Reduce the Risk of Nuclear War (Washington 1971), the aim of which is to reduce tensions and risks related to nuclear types, and includes strengthening the capacity for cooperation between countries to resolve disputes over nuclear energy, resolving them peacefully, promoting its peaceful use, and strengthening humanitarian assistance in emergencies.
- * The Vienna Convention on Civil Liability for Nuclear Damage of 1963, under the supervision of the International Atomic Agency on May 21, 1963, headquartered in Vienna, and its implementation began on November 12, 1977. The agreement aims to establish a global system that includes rules of liability for nuclear damage and also guarantees compensation to victims of nuclear damage.
- * SALT 1 Agreements: Relating to Measures to Limit Strategic Offensive Arms, signed in Moscow on May 26, 1972 between the United States and the Soviet Union, and are considered among the most important international agreements aimed at reducing strategic nuclear weapons.

¹ - Ali Saidane , Protecting the environment from pollution by radioactive and chemical substances in Algerian law, first edition, Dar Al- Khaldounia , Algeria, 2008,P 50.

² - Christian Balaille et Henri Revoile , Les incidences environnementales et sanitaires des essais nucléaires effectués par la France entre 1960 et 1960 , rapport au sénat , assemblée nationale française , 2002-2003,p 27.

* The agreement on preventing nuclear war signed in Washington on June 22, 1973: it is known as the Nuclear Non-Proliferation Treaty.

* SALT II Agreement: signed in Vienna on June 18, 1979, its objective was to limit American and Soviet strategic offensive weapons.

* Agreement on the Establishment of Nuclear Risk Reduction Centers (Washington, September 15, 1987): This is an agreement signed between the United States and the former Soviet Union, and its objective is to remove weapons and all ballistic missiles.

* START 1 Treaty: Signed in Moscow on July 3, 1991 and entered into force in 1994, it stipulated a reduction in strategic offensive arms. Russia and the United States fulfilled their obligations on time on December 5, 2001.

* The Treaty on the Limitation of the Proliferation of Nuclear Weapons, ratified on July 1, 1968 and entered into force on March 5, 1970. This treaty is based on a distinction between countries that possessed nuclear weapons before January 1967, which are the United States of America, the former Soviet Union, China, Great Britain, France) and other countries, and these countries have committed themselves not to help other countries acquire nuclear weapons. This treaty aims to: avoid the danger of nuclear war through the abstention of the member states of the nuclear club.

* Comprehensive Nuclear-Test-Limitation Treaty: Signed by 155 countries on September 10, 1996, its goal is to end nuclear weapons.

* The Outer Space Treaty of 1967, the objective of which is to establish regulatory principles for the activities of States in the exploration of outer space and to combat any non-peaceful use of outer space.

2.2- International mechanisms for protecting the environment against the danger of radioactive contamination.

From the above, we see that the international community is constantly working to protect the environment, and all this in the interest of human life, and this requires legal mechanisms to implement the aforementioned international laws, otherwise they will have no effect, and this is what we will discuss under the title of international mechanisms to ensure the application of the rules of international law. ⁽¹⁾

First : The United Nations in 1945: The Organization plays an important role in consolidating the right of countries to peacefully exploit nuclear energy in various issues and at all levels. It has mobilized all its agencies for this, in particular the Security Council and the General Assembly of the United Nations and the resolutions organizing the relations of States with peaceful nuclear technology. The most important of these decisions are:

- Resolution No. 687 of 1991 ⁽²⁾ against Iraq, according to which Iraq was obliged to undertake without any conditions not to possess or produce nuclear weapons and to accept inspection.
- Resolution No. 1696 of July 31, 2006 concerning the Iranian nuclear program, based on Chapter Seven of the United Nations Charter.
- Resolution No. 903 of the United Nations General Assembly of 1955 establishing the United Nations Scientific Committee on the Effects of Nuclear Radiation.

The United Nations General Assembly has also established committees in the field of the use of nuclear energy, which are:

¹ - Zaidi Wardia , The use of atomic energy for military and peaceful purposes, thesis for obtaining a Master's degree in public international law, Mouloud Mammeri University of Tizi Ouzou , 2012.P119.

² - Basil Youssef, United Nations Applications of International Law B, I, Documentary and Analytical Study, Center for Arab Studies, Beirut, 2006 P282.

- The United Nations Atomic Energy Commission was established on January 24, 1946, and its objective is to formulate recommendations and suggestions necessary for the dissemination of information and data necessary for the peaceful uses of nuclear energy among all countries, and to establish safeguards through inspection.

- The United Nations Scientific Committee on the Effects of Nuclear Radiation: In accordance with Resolution No. 913 issued by the United Nations General Assembly, the committee was established on December 1, 1955 with the mission of monitoring the effect of nuclear radiation on the environment.

First: the International Atomic Energy Agency: established on October 26, 1957, on behalf of the United Nations. Its objective is to achieve international cooperation for the peaceful uses of nuclear energy ⁽¹⁾

Second: The International Committee on Radiation Protection: This is an international advisory body. The committee was established in 1928 as a result of the International Conference on the Export of Radiation. It is considered the leading body in the field of protection and protection against ionized radiation that has provided recommendations and guidance regarding protection against the risks arising from the use of ionizing radiation in various fields.

Third: The United Nations Scientific Committee on the Effects of Atomic Radiation: Established in accordance with Resolution No. 913 of 12/03/1955.

On behalf of the United Nations General Assembly, its objective is to work towards the submission of reports containing information and suggestions on the prevention of the danger of nuclear radiation, and to prepare periodic and annual reports on radiation levels, their results and their effects on the environment and humans, and submit its reports to the United Nations General Assembly ⁽²⁾.

Fourth: World Health Organization:

It aims to combat radioactive contamination, particularly after the Chernobyl accident of 1986 and the health effects resulting from the Chernobyl accident, as well as the health care programme to reduce the health effects resulting from radioactive contamination.

Fifth: The Comprehensive Nuclear-Test-Ban Treaty Organization:

It was established by the Comprehensive Nuclear-Test-Ban Treaty to ensure cooperation among States parties to ensure the implementation and enforcement of its provisions, and its objective is to detect any nuclear explosion in the world, inform the countries to which its obligations have subscribed, formulate recommendations and gather:

Sixth : International groups specializing in nuclear non-proliferation: the United States of America is no longer the only one to hold the monopoly on nuclear energy, but the international geographical area has expanded to all continents, so that nuclear energy, to the extent possible, is available to terrorist groups, whether through theft or through the membership of specialists in international terrorist organizations, and the fight against global programs aimed at developing weapons of mass destruction is at the heart of the work of the supplier clubs, since they have agreed to exercise control over the transfer of components, equipment and technologies necessary for the development and use of weapons of mass destruction. Their work is based mainly on the exchange of information between their members.

¹ - article 2 of the statute of the international atomic energy agency.

² - Safwat Salama Muhammad and Jamal Al- Waifi , International Commission on Radiological Protection, Report No. 113, Education and Training in Radiation Protection for Diagnostic and Interventional Procedures, 2010 P 4.

Seventh: The Ranger Committee: Known as the Exporters Committee for the Non-Proliferation Treaty, it was established on August 14, 1971, and its objective is to work to unify agreement on a unified interpretation of the Treaty on the Non-Proliferation of Nuclear Weapons in accordance with Article 3, paragraph 2, of the Treaty on the Non-Proliferation of Nuclear Weapons ⁽¹⁾

Ninth: International committees established by the General Assembly in the field of the use of nuclear energy:

- The United Nations Atomic Energy Commission: dated January 24, 1946, its objective was research and investigation, then the preparation of recommendations and proposals necessary to disseminate the information and data necessary for the use of nuclear energy for peaceful purposes ⁽²⁾.

- The United Nations Scientific Committee on the Effects of Nuclear Radiation: It was established by Resolution No. 913 of the United Nations General Assembly issued in December 1955. Its mission is to monitor the effect of nuclear radiation on the environment resulting from nuclear tests and various accidents.

2.3- The effectiveness of international efforts to protect the environment against the danger of nuclear radiation:

It is true that the environment has been the subject of special attention in recent years given the growing dangers of its threat, knowing that environmental pollution is not a matter of time, but the issue has become more complicated with the discovery of nuclear energy and the problems related to the dual use of nuclear energy with modern scientific and technological discoveries, especially weapons of mass destruction, and on this basis, it was necessary for the international community to intervene to establish an international nuclear law with the aim of developing policies aimed at preventing the spread of nuclear weapons.

CONCLUSION:

By the above, we confirm that nuclear pollution is very dangerous for the environment and man, and that it can occur whether the use of nuclear energy is peaceful or military, and with the diversity of sources of nuclear radiation, both natural and artificial, by the intervention of man in the pollution of the environment due to the needs of industry, but this must be done in accordance with international law, taking into account the rules of safety and security to protect the environment with all its elements from radioactive pollution, we appreciate the various international efforts to protect the environment from nuclear pollution. This has been demonstrated in the various international organizations that work under the auspices of the United Nations, such as the International Atomic Energy Agency, the Atomic Energy Commission and others, as well as in various international agreements that protect the right to use nuclear energy for peaceful purposes, the most important of which is the Treaty on the Non-Proliferation of Nuclear Weapons of 1968, which is considered the cornerstone of nuclear security. This obliges the international community to develop a protection map and strengthen the regulatory program and strategy based on international and national laws, especially with the increasing threats to the international environment due to the widespread use and production of nuclear energy, especially in the technological age, and the increase in wars of all kinds.

Through our study of this topic, the following results were achieved:

¹ - Aizal Abderrahmane: The legal system of international nuclear institutions, dissertation for obtaining a master's degree in international law and international relations, Faculty of Law - Ben Aknoun, Algeria, in 2011, P63.

² - Mamdouh Attia, Abdel Fattah Badawi, Global Peace or Mass Destruction, Disarmament of Weapons of Mass Destruction, Al-Salah Press for Strategic Studies and Media Production, Cairo, 1991, P 75.

- The environment is threatened by nuclear pollution due to the accumulation of weapons of mass destruction due to the spread of nuclear energy production and use, especially with the increase in international armed conflicts and civil unrest in many countries. This threatens global nuclear security.

- Appreciating the international official and humanitarian efforts to protect the environment. These efforts have been reflected in the introduction of international nuclear law and the conclusion of numerous treaties and agreements aimed at limiting the manufacture and development of nuclear weapons, but they are not sufficient to establish nuclear security.

Recommendations: Based on the above findings, we have just presented some of the following recommendations:

-The role of the International Atomic Energy Agency should be activated with the aim of implementing international agreements on the production and use of nuclear energy for peaceful purposes to advance economic and social progress on the one hand and to strengthen nuclear safety and environmental security on the other.

- Not to use nuclear threats as an excuse to prevent countries from exercising their right to the peaceful use of nuclear energy, with nuclear justice between countries to strengthen their expertise and their right in the nuclear and technological age, particularly in the IAEA's relations with nuclear and non-nuclear countries.

-The need to create nuclear centers specialized in the analysis of soil, food and water samples to strengthen nuclear security.

- Create an international fund to support environmental protection in the event of a nuclear emergency or accident.

- Criminalize nuclear pollution of the environment as a stand-alone international crime in the 1998 Rome Statute of the International Criminal Court.

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02- Tabel Mahmoud Al-Hassan, Atomic Waste and Nuclear Tests at Sea and Their Dangers to the Marine Environment, Security and Life Magazine, No. 373, College of Science, Taibah University , Saudi Arabia , .

04- Safwat Salama Muhammad and Jamal Al- Waifi , International Commission on Radiological Protection, Report No. 113, Education and Training in Radiation Protection for Diagnostic and Interventional Procedures, 2010.

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