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CRIMINAL LIABILITY FOR ECOLOGICAL DAMAGE RESULTING FROM NUCLEAR TRANSPORT

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Abstract

According to art. VII point 1 of the Vienna Convention, the State in whose territory the facility is located ensures the payment of nuclear damage allowances, recognized as being the responsibility of the operator, providing the necessary amounts insofar as the insurance or the financial guarantee would not be sufficient.

The special character of the civil liability for nuclear damage also concerns the exonerating cases of liability. These have a restrictive character and include the assumptions in which the nuclear damage caused by a nuclear accident resulted directly from acts of armed conflict, hostilities, civil war or insurrection.

According to the polluter pays principle, in the area of nuclear damage liability the operator pays, any conditioning on the subjective attitude of this person towards the accident and the damage produced is removed. The evidence of the fault of the responsible person is eliminated, which is impossible to manage, on the one hand, and there is the risk of not covering the damages produced in very serious circumstances, often impossible to evaluate, on the other.

Keywords: *criminal liability, nuclear damage, pollution*

The objective foundation of civil liability for delinquent nuclear damage is realized by a number of operators

The risk of using nuclear energy for destructive purposes is an eloquent example that demonstrates how the achievements of scientific research, made for the development and progress of human society, can cause particularly serious harm and even the disappearance of life on earth. After the events of the Second World War when the atomic bomb was first used on the Japanese cities of Hiroshima and Nagasaki, in 1945, the accidents at Cernobîl and Forbach[1] followed, which brought back to the debate the need for firm regulation[2] of liability in the case of such damages.

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[1] The accident at the Forbach Nuclear Power Plant, also caused by negligence, occurred on August 13, 1991.

[2] On April 26, 1986, the explosion of a reactor of the Cernobîl nuclear power plant occurred due to human negligence. The consequences of the disaster are not so far completely known: there were numerous damages consisting of the death of a number of people in the explosion, others due to the irradiation, many people were ill, damage to property was caused and over fifty thousands

Internationally, civil liability in the field of nuclear energy was regulated in the provisions of the Paris Convention of 1960, of the Convention on Civil Liability for Nuclear Damage in Vienna of 1963 and of the Common Protocol on the Application of these Conventions, adopted in Paris in the year 1988, documents that Romania ratified by Law no. 106/1992[3].

In the national legislation, the normative act that regulates the *civil liability for nuclear damages resulting from activities of use of nuclear energy for peaceful purposes is Law no. 703/2001*[4].

The provisions of this law are supplemented by the provisions of the Civil Code and of the Civil Procedure Code, according to the provisions of art. 15 of the Law.

Given the particular danger posed by humans and the environment to the irrational use of nuclear energy, the ***objective and exclusive*** responsibility of the operator of a nuclear installation for any nuclear damage, in art. 4 paragraph (1) of the Law.[5] Although nuclear damage is a variety of environmental damage, there are a number of specific features that we will analyze in terms of the specific objective foundation of this responsibility.

Special conditions for committing criminal liability for nuclear damage. The content of the notion of "nuclear damage"

Art. 3 let. d) of Law no. 703/2001 defines nuclear damage in an enunciative presentation of all present and future, foreseeable and unforeseeable damages.[6]

The content of the notion of nuclear damage includes the damage caused to man and his goods, as well as to the environment. Also, the compensations will be considered for the effective repair of the damages caused and the cost of the preventive measures, any losses or damages caused by these measures, as well as the restoration of the environment, following, as far as possible, a restoration of the previous situation.

The cause of these damages is the ***nuclear accident***, defined in art. 3 let. a) from the law, as "(...) any fact or sequence of facts having the same origin, which causes

people were evacuated from nearby localities. Over several countries in the central and northern Europe, the radioactive name has passed, finding in time the infestation of certain plant and animal products, as well as the increase of the risk of certain diseases. Concerning the Cernobîl accident, see M. Duțu, *Environmental Law, Treaty*, vol. II, Economic Publishing House, Bucharest, 1998, p. 206-208.

[3] Of. Gazette no. 258 of 15 Octomber 1992.

[4] Of. Gazette no. 818 of 19 December 2001, enter into force in 12 months from publishing, respectively 19 December 2002. Subsequently, this was modified by Law no. 470/2004 and by Law no. 115/2007. In this section we shall refer to this *Law.*

[5] M. Duțu, *op.cit.,* p. 254.

[6] *Ibidem*.

a nuclear damage, and regarding the preventive measures, creates a serious and imminent threat of producing such damage".

As far as we are concerned, we share the opinion expressed in our legal literature[7] without reservation, according to which the liability for nuclear damage is of an objective nature, being a full responsibility, independent of any guilt. Guarantee and risk are the two guiding ideas for substantiating this responsibility, interdependent and mutual, ensuring greater protection for victims of nuclear accidents.[8]

The operator, as the holder of the authorization for the conduct of nuclear activities, has the obligation to guarantee their security, to prevent and remove all the risks regarding the damage caused by the injury of persons or the destruction of the goods. Given the danger of nuclear accidents and the often irreversible nature of the damage done, the risks are particularly high for all activities in which nuclear energy is used. This also implies the assumption, by the operator, of the responsibilities of repairing the damages, as ***guarantor of some risky activities for the whole company.***

Under these conditions, the ***idea of the guarantee for the risk of activity*** represents the objective basis of the liability for nuclear damage.

From the definition of damages and nuclear accident results the existence of a special liability for things, situation in which the provisions of the law are corroborated with the provisions of art. 1376 Civil Code. The notion of "thing" acquires in this context new valences, strengthening the opinion expressed in the legal literature, according to which the civil liability on the basis of art. 1376 Civil Code, it concerns all the inanimate things, in this case having a material existence that is insensible to the human senses, whether they are potentially dangerous, whether or not they have their own dynamism[9].

No regulation refers to the fault of the operator, the operator being held liable regardless of his intentional or guilty involvement, even in the absence of any fault. The production of nuclear damage as a consequence of the nuclear accident triggers the mechanism of civil liability, the victim having to prove the existence of the damage and the causal link between it and the generating fact, the nuclear accident.[10]

The exclusive responsibility of the operator delimits exactly the scope of the persons who are obliged to compensate for nuclear damage, respectively the

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[7] *L. Pop*, „Răspunderea civilă pentru daune nucleare", p. 58.

[8] M.Duțu, *op. cit.*, p. 260.

[9] *C. Stătescu, C. Bîrsan*, op. cit., p. 300; thus, nuclear damage is the result of ionizing radiation emitted by any radiation source that is in a nuclear installation or emitted by nuclear fuel, radioactive products or radioactive waste from a nuclear installation or emitted by nuclear material, coming from or sent to a nuclear installation or the result of the radioactive properties of such material or of a combination with radioactive, toxic, explosive or other hazardous properties of such material.

[10] M. Duțu, *op. cit.*, p. 261.

persons authorized to carry out nuclear activities. According to the *polluter pays* principle, in the area of nuclear damage liability the *operator pays*, any conditioning on the subjective attitude of this person towards the accident and the damage produced is removed. It is not relevant to commit any lawful or unlawful acts by this person, intentional or guilty. The mere fact of the occurrence of a nuclear damage related to a causal accident with a nuclear accident at the operator's plant, equipment or radioactive materials, entails its liability. The proof of the fault of the responsible person is eliminated, which is impossible to manage, on the one hand, and there is the risk of not covering the damages produced in very serious circumstances, often impossible to evaluate, on the other.

The syntagma of *any damage* is insistently contained in the law, proving the legislator's intention to include all those harmful consequences that may result from a nuclear accident.

As an indirect sanction, the operator is entitled to the action in retrogression only if "*such a right was stipulated in a written contract" or if "(...) the nuclear accident results from an action or omission committed with the intention to cause a nuclear damage against the natural person who acted or failed to act with this intention*" [art. 11 paragraph (1) lit. a), b)].

Exonerating causes of civil liability

Only in totally exceptional cases, express and limiting the law, can the operator's liability be removed:

- *nuclear damage is the direct result of acts of armed conflict, civil war, insurrection or hostility* - if we consider the fact that the law regulates the liability for the activities in which nuclear energy is used for peaceful purposes [art. 5 paragraph (2)];

- *the nuclear damage resulted, in whole or in part, from a serious negligence of the person who suffered it or that person acted or failed to act with the intention of causing damage* [art. 5 paragraph (1)].

Exonerating cases applicable to other forms of liability for the deed of work, force majeure, the deed of the victim or the deed of a third party are not provided, resulting in the enumeration in the legal text being limiting and not exemplary. In order to exclude liability for nuclear damage, the force majeure can only cover the assumptions provided for in art. 5 paragraph (2).

Although art. 15 of the Law refers to the provisions of the Civil Code, we believe that any other exceptional situations will not be interpreted by similarity, compared to the content of the legal text[11]. Moreover, in the express formulation of the exonerating cases, the situations of force majeure - the armed conflict, the acts of third parties - the civil war, insurrection or hostility or the deed of the victim - the gross negligence of the person who suffered it or that person acted or failed to act.

[11] *Ibidem*.

Solidary liability of operators

In cases where a nuclear damage entails the liability of several operators and the part of the damage that each one must bear cannot be determined with certainty, they will be *jointly* and *severally* liable, the liability of each being not greater than the amount applied to it by law [art. 4 paragraph (4)]. The solidarity and completeness of the operators' liability represent another guarantee for the reparation of the damage caused instituted in favor of the victims of nuclear damage, involving all those who, regardless of whether or not they are guilty, have the quality of operators, and the assets they operate have triggered a nuclear accident. All are held jointly and severally liable for the full repair competition[12].

In the event that several installations belonging to the same operator are involved in a nuclear accident, this will be responsible for each installation, up to the amount of competition applicable to them under the law [art. 4 paragraph (5)].

Also, if a nuclear accident causes more damage, of which one damage is nuclear and another damage is not nuclear or, besides the nuclear accident, other events have contributed to their production, so that the nuclear damage cannot be separated by certainty of the nuclear one, it is to be considered as nuclear damage, caused by the nuclear accident [art. 5 paragraph (3)].

In accordance with the provisions of the Vienna Convention, which gives the right of states to regulate by national laws the terms of the prescription of the right to compensation for nuclear damage, art. 12 provides for two limitation periods, depending on the severity of the damages:

- 30 years from the date of the nuclear accident, if the action is related to death or injury;

- 10 years from the date of the nuclear accident, if the action is related to the production of other nuclear damage provided by the law (except the costs of preventive measures and any losses or damages caused by such measures).

Under these terms, the right to action is prescribed if the action was not filed within 3 years from the date when it knew or should have known the damage and the operator.

Explicitly, para. (3) in art. 12 gives the possibility to modify the application if the damage was aggravated, even after the expiration of these terms, provided that no irrevocable court decision has been reached by the competent court.

Given the particular danger posed by the use of nuclear energy, the devastating consequences it can produce, but also the risk of a nuclear catastrophe, the legislator provided in art. 13 of Law no. 703/2001 the obligation of the operator and the carrier of nuclear materials to conclude an insurance contract or to bring a financial guarantee ***to cover it*** for civil liability for nuclear damage.[13] In order to ensure the fulfillment of this obligation, the legislator provided an essential

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[12] Denisa Barbu, *Drept procesual penal. Partea generala,* Lumen Publishing House, Bucharest, 2016, p. 112.

[13] *Ibidem*.

condition for obtaining the authorization according to Law no. 111/1996 regarding the conduct of nuclear activities, republished.[14] This legal provision refers to the socialization of the risks of nuclear damage, ruling in the sense of the most effective protection of the victims of the damage, by committing the civil liability, both in the criminal and contractual plan.

In this way, the aim is to repair the damage, regardless of the financial power of the operator from the moment when they have to pay the damages. The compulsory conclusion of an insurance contract or the establishment of a guarantee, as well as the obligatory conditions for the authorized conduct of an activity that presents the risk of nuclear damage, correspond to the ***precautionary principle***, disputed in the contemporary legal doctrine, regarding those damages brought to the environment or to human health, of great gravity, having foreseeable or even unforeseeable consequences, for future generations.

At the same time, as the nuclear accidents so far have demonstrated (especially in Cernobil on April 26, 1986), their consequences are beyond the political borders. It is not accidental, therefore, that the legal regime in this matter first followed the path of international regulation[15].

The first international document in this area was the *Convention on Civil Liability in the Field of Nuclear Energy*, signed on July 29, 1960 in Paris (and entered into force on April 1, 1968), under the auspices of the Nuclear Energy Agency of the Organization for Economic Cooperation and Development (AEN / OECD), in order to provide a special uniform regime of civil liability for nuclear damage in Western Europe[16].

This convention was supplemented by the Brussels Convention of January 31, 1963, which provided for the provision of victims of a nuclear accident an additional allowance, through public funds, by the contracting parties.

The main significance of this convention is to establish the basic principles of civil liability in nuclear matters, subsequently approved by all international regulations in the field and by national laws[17].

On April 29, 1963 was signed in Vienna, under the aegis of the International Atomic Energy Agency (IAEA), the *Convention on Civil Liability for Nuclear Damage* (entered into force on November 12, 1977), which aims to establish an international vocation regime based on the same principles like the Paris Convention[18].

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[14] Of. Gazette no. 552 of 27 June 2007 completed and amended, last amendment by Law no. 378/2013 (Of. Gazette no. 827 of December 2013).

[15] *Ibidem*.

[16] Romania acceded to the Vienna Convention and to the Common Protocol by Law no. 106/1992. For the content of the international documents and the internal regulations in this matter see the volume *Responsabilite civile,* edited by AEN / OECD, Paris, 1990.

[17] We consider the following: objective and exclusive liability, directing liability to the operator, limited liability (damage repair), insurance obligation or other financial guarantee, non-discrimination, unity of jurisdiction.

[18] For a general presentation of the convention, see S. Van Geldem, „Responsabilidad civil por danos nucleares", in *Ambientes y Recursos Naiturales*, vol. VI, no. 4/1989, pp. 22-30. For Romanian

Also, in 1962 the *Convention on the Civil Liability of Nuclear Ship Operators* was adopted, containing provisions similar to those of the Paris and Vienna Conventions, in order to cover the field of reactors installed as a means of propelling on ships.

In the area of liability for maritime transport of nuclear materials, after some difficulties, in 1971 the *Convention on the Legal Rules of Civil Liability Applied in case of Accident during the Transport of Nuclear Materials* was adopted. More recently, in 1988, the Paris and Vienna Conventions were linked by the adoption, under the auspices of AEN/OECD and IAEA, of a common protocol, which represents an important step towards a better understanding and uniformization of civil liability for nuclear regimes. (entered into force on April 27, 1992).[19]

In order to extend the applicability, to increase the amount of the nuclear operator's liability and to improve the means of obtaining an adequate and equitable repair, the Vienna Convention was amended by the Protocol of 12 September 1997.[20]

A preliminary problem is that of establishing the meanings of specific terms, respectively those of installation, accident and nuclear damage.

The notion of nuclear installation. The operator of a nuclear installation is liable for any nuclear damage that has occurred in this nuclear facility (Article II. 1 a of the Vienna Convention). As such, the special regime is applicable to the nuclear installation, which is broader than the nuclear power plant.

Expressly, the convention does not apply to nuclear installations used for non-peaceful purposes. The Romanian law took over and amended this text, in the sense that the nuclear installation also includes any installation in which nuclear materials are stored, except for their storage for the transport of nuclear materials.

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legal literature, see M. Ghelmegeanu, „La responsabilite civile pour dommages nucleaires dans les conventions internationales concernant l'utilisation pacifiques de Penergie atomique", in *Revue roumaine de Sciences sociales, serie de Sciences juridiques*, no. 2/1968, p. 195 et seq.; I. Anghel, „Probleme de răspundere care se ridică în legătură cu folosirea în scopuri paşnice a energiei nucleare", in *Răspunderea civilă*, by I. Anghel, Fr. Deak, M. Popa, Editura Ştiinţifică, Bucureşti, 1970, p. 216 et seq.; *idem,* „Răspunderea civilă pentru pagube produse prin folosirea în scopuri paşnice a energiei atomice", in *Revista română de drept*, no. 2/1971, p. 66 et seq.; M. Duțu, „Răspunderea civilă pentru pagubele nucleare", in *Dreptul*, no. 10-11/1993, p. 47 et seq. regarding the regim of civil liability in Eastern States see OCDE, „La reparation des domages nucleaires dans les pays membres de l'OCDE", in *Buletin de droit nucleaire,* no. 20/1977, p. 54-82; M. Pelzer, „La responsabilite civile dans le domaine nucleaire au lendemain de Paccident de Tchernobyl. Un point de vue allemand", in *Buletin de droit nucleaire*, no. 39/1987, p. 69-80.

[19] Prior to the existence of the Common Protocol, victims located on the territory of the States Parties to one of the conventions were not protected if an accident occurred in an installation located on the territory of one party to the other convention. The document extends the application of the two conventions to the victims located in the territory of the Contracting States, to each of them. On the content, meanings and history of the adoption of the protocol, see V. von Busekist, „Le Protocole commun relatif a l'application de la Convention de Vienne et la Convention de Paris; une passerelle entre les deux conventions sur la responsabilite civile pour les dommages nucleaires", in *Buletin de droit nucleaire,* no. 43/1989, p. 10.

[20] Ratified by România by Law no. 203/1998.

Accident and nuclear damage are two notions closely related, similarly defined in the international regulations in this field[21].

We can notice that, according to these definitions, the nuclear accident does not correspond to the classic meaning of the term accident, that is, it may not always have an "accidental" character. Thus, for example, contamination from a leak in the circuit, not perceived for a certain period, is a sequence of facts and does not have a sudden character.

But the nuclear accident does not employ the special civil liability regime[22], except when it comes to either nuclear fuels, products or radioactive waste held in the plant, or nuclear materials that originate or have as their destination this plant.

Repairable nuclear damage. The nuclear damages that give rise to the right to repair, according to the special regime, are those that result from a nuclear accident, but under the condition that they are not excluded by the express provisions of the national convention or legislation.

In relation to this definition, we first note that nuclear accident includes both the generating fact and its consequences. We can distinguish, from this point of view, four situations:

a) the fact that the generator and the damage can be due, both, to the nuclear reaction, in which case the damage will be considered nuclear and its repair will be subject to the special regime;

b) the generating fact and the damage suffered are both of a classical nature, hypothesis in which the provisions of the Vienna Convention are not applicable;

c) in the event of a classic accident, which causes a nuclear damage (for example the breaking of a cooling circuit), the provisions of the Vienna Convention apply.

The two elements to be defined are: the notion of transport of nuclear materials and the establishment of repairable damages.

The specific liability regime applies to the transport of nuclear material that originates from or is produced there and has occurred here. Nuclear materials are defined in the convention as any nuclear fuel other than natural or depleted uranium and radioactive products or waste. Compared to the acceptance given to nuclear fuels in the accident that occurred inside an installation, we are in the presence of a more restrictive definition, being excluded radioisotopes.[23]

The first derogation from the usual rules is that the nuclear operator (and not the carrier) is responsible for the damage caused by the transported nuclear substances. As a general rule, the shipping operator responds until another installation takes over the materials. The consignor operator and the consignee operator may, at the same time, agree on other arrangements, on the basis of a written contract. In case of accident, the identity of the responsible operator can be

[21] *Ibidem*.
[22] *Ibidem*.
[23] *Ibidem*.

determined immediately due to a certificate of responsible person, as well as the materials transported, the itinerary, the amount and the type of the guarantee.

The existing international regulations in this area and first of all the Paris and Vienna Conventions have outlined and enshrined a number of common general principles of civil liability for nuclear damage, which gives it a special character, also taken by national law. In this regard, there are the principle of objective and exclusive liability, the directing of the liability to the operator, the limited character of the liability (repair), the obligation of insurance or other financial guarantee, the non-discrimination based on citizenship, domicile or residence, the unit of jurisdiction. These principles were partially taken over by Law no. 61/1974 and are enshrined in Law no. 703/2001.

The Vienna Convention opted for an objective, independent liability of the operator for damages caused by a nuclear accident occurring in his plant or involving nuclear materials during transport, originating or having its plant as destination[24].

The objective nature of the nuclear liability of the nuclear operator complements the exclusive nature, which means that the victims of a nuclear damage have no possibility other than to sue against it for reparation of the damage. This limitation of the rights of the victims recognized by the common liability regime is justified both by the objective liability system and by the need to simplify and accelerate the compensation procedures, since all actions are directed against one and the same person: the nuclear operator. This rule also presents an obvious economic advantage, avoiding the initiation of actions against suppliers or associations of the operator, who, without this protection, would have been obliged to insure against the nuclear risk.

The victim must only identify the person responsible for the nuclear accident; this identification is greatly facilitated by the fact that, in all states, the operator of a nuclear installation (or the carrier of nuclear materials) is subject to prior authorization, issued by the public authorities. The authorization confers on the operator the quality of the person responsible for nuclear accidents. Maintaining the principle of exclusive liability, the Vienna Convention offers the State in whose territory the facility is located the possibility to provide in its legislation that, under conditions that may be specified, a carrier of nuclear materials or a person handling radioactive waste may, upon request and with the consent of the person concerned, to be designated or recognized as an operator in its place, with regard to nuclear materials or radioactive waste. In this case, such persons will be considered as operators of a nuclear installation.[25]

The Convention establishes a special, original mechanism, which gives civil liability some specific effects. It allows easy identification of the respondent, as

[24] *Ibidem*.

[25] *Ibidem*, p. 345.

only the operator is required to repair the damage caused by a nuclear accident. The meanings of this principle are expressed by two rules[26]:

• the victims can only act against the operator responsible for damages. The operator represents the person designated or recognized by the State in whose territory the installation is located as its operator (art. I, letter C of the Convention). At the same time, the victims can only act against the exploiter, not having any action against a third party. This aspect characterizes the right of nuclear liability, the exclusive character of the operator's liability excluding any option right of the victim (the injured party);

• the operator does not have any regression. After the victims have been compensated for the damages suffered, the operator cannot go against another, as opposed to the common law, under which, at times, he could have been directed against other persons. However, here are two exceptions:

• the operator has a right of recourse based on an express provision from a written contract (art. X, letter a);

• *if the nuclear accident results from an action or an omission committed with the intention to cause damage to the natural person who acted or failed to act with this intention (art. X, letter b), this situation presents a series of advantages for suppliers, builders, in general for all those involved in the construction of a nuclear installation, as it places them under any responsibility, in the absence of an express contractual clause.*

The operator's liability is limited both in terms of the amount of the financial repair and the deadline for submitting the application.

These compensations do not include the profit and expenses of the court, and the provisions regarding limitation of liability will be explicitly maintained in the operator's authorization. As a procedure, the Government (as a representative of the state) is the competent body to determine, at the proposal of the ministry or other bodies of the public administration, subject to the authorization holder (with the approval of the ministry with responsibilities for environmental protection), the maximum amount of responsibility (within the legal limits allowed) for each authorization holder. The amount thus established does not include the damages or the expenses granted by the court for the purpose of repairing a nuclear damage.

According to art. VII point 1, of the Vienna Convention, the State in whose territory the facility is located ensures the payment of nuclear damage allowances, recognized as being the responsibility of the operator, providing the necessary amounts insofar as the insurance or the financial guarantee would not be sufficient, without these however, amounts may exceed the limits set by the document.

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[26] *Ibidem*.

Conclusions

The special character of the civil liability for nuclear damage also concerns the exonerating cases of liability. These have a restrictive character and include the assumptions in which the nuclear damage caused by a nuclear accident resulted directly from acts of armed conflict, hostilities, civil war or insurrection.

Recently, these cases of exoneration of liability, established in the Vienna Convention (as in the one in Paris) in a certain international political-military context, have provoked a series of discussions in the industrialized countries, followed by a series of changes to the legislation[27]. Among the elements that have created a series of difficulties we mention: the cases of terrorism, which have multiplied in certain periods in the developed states, as well as the notion of an exceptional natural cataclysm, which may lead to different interpretations depending on the geographical situation of each country.

The Vienna Convention establishes as exempt causes of liability, besides the exceptional nuclear cataclysm, and the armed conflict, hostilities, civil war or insurrection.

Also, the Vienna Convention leaves it to the discretion of national laws to determine the extent of nuclear damage repair. In their turn, a significant number of state regulations regarding nuclear civil liability maintain the application of national regimes of work-related accidents and occupational diseases to the nuclear damage suffered by the employees. To this end, in many countries, limiting lists have been established of the conditions that are likely to be caused by ionizing radiation[28].

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[27] In our country, the juridical internal regim in the field is set by Law no. 703/2001 regarding civil liability civilă for nuclear damage which take the content of the Viena Convention and its protocols.

[28] M.Duțu, *op.cit.,* p. 266.