

# Compensation of Harm to the Health as a Result of Radioactive Contamination According to Russian Legislation

Sergey Shupichenko

## 要 旨

ソ連時代、国家が強大な政治的権力を持ち、人間に対して国家権力が優先された。そのため、長い間、環境破壊に対する責任を負わない法律が採択されていた。ソ連崩壊後、1991年から現在までロシア議会によって、国民に対して損害賠償すべきことを定める様々な法案や法規が採択されている。原子力発電所の建設や原子燃料の製造・再加工工場の建設は、ロシアの原子力プロジェクトにおける重要な一部である。しかし、原子力発電所の操業は人間の健康に有害な放射線を伴う。

現在、ロシア政府は、国民の保護に関する特別法案を採択することによって放射能汚染の責任を認めている。しかし、ロシア政府によって定められた社会保障や環境汚染に対する賠償は、与えられた損害にとって十分ではない。人間の健康被害と放射線の影響との因果関係の立証が困難な部分もある。

本稿は、ソ連時代に起こったチェルノブイリ (Chernobyl) 発電所事故とマヤク (Mayak) 工場事故を通じて、放射線の影響による健康被害や精神的損害の賠償に関する問題を考察したものである。

**Keywords: radiation safety, compensation of harm, moral damage**

## Introduction

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## **Introduction**

In the Soviet period, state, possessing larger political power and immunity, for a long time assumed such rules of law, which made impossible to fix in it responsibility for ecological offenses. In the period from 1991 till present time, many laws include the standards, which regulate the order of the compensation of harm in connection with its infliction to citizens, were accepted by the Russian Parliament.

The building of atomic power stations and plants for production and processing of nuclear fuel was the important component of the Soviet atomic program. However, the operation of nuclear plants is connected with radioactivity, which is capable to lead to severe consequences for human health.

Irrespective of the future of nuclear power engineering, at present, its existence is accomplished fact. Problems of the protection of environment, connected with atomic energy are still topical.

In ecological doctrine of the Russian Federation<sup>1</sup>, approved by Decree of the Russian Government on August 31, 2002 is indicated, that retention and improvement of environment are priority directions of state and society activities. In this case, forming and realization of the strategy of social-economic development and state policy in sphere of ecology must be interrelated. Therefore, health, social and ecological prosperity of population are in indissoluble unity.<sup>2</sup>

Political, social and economic situation in Russia does not contribute to observance of laws, including sphere of environment protection. Judicial system is not ready for realization of the right for environmental protection. Law courts physically can not solve the quantity of lawsuits on compensation of ecological harm, which unavoidably will appear in case of full application of legislation on protection of the environment.<sup>3</sup>

At present time, state recognizes responsibility for pollution of natural environment, enacting special laws about social protection of citizens. However, the social privileges guaranteed by state and compensation in relation with the pollution of natural environment do not fully compensate the harm. There is a problem to prove causal relation between influence of radiation and harm to health. Thus, in practice the harm, inflicted to health as a result, for example, of radiation exposure, and moral damage are significant.

### **1. Legislation on radiation safety**

In the Soviet Union atomic power plants capacity from year to year was increased, the country was stuffed by nuclear weapon, nuclear reactors, and nuclear weapon tests were carried out. Despite these facts, long time, the Soviet Union did not enact its own laws in the sphere of use of atomic energy and nuclear safety.<sup>4</sup> Only in the nineties legislation about nuclear safety was started.

Radiation safety is the component of ecological safety. In its turn, ecological safety is an element of general safety. In Federal Law on March 5, 1992 "On the safety"<sup>5</sup> - this general concept is defined as condition of protection of the vitally important interests of person, society and state from internal and external threats.

Using concept "safety", it is necessary to clearly understand what is threat, from what it occurs, to whom it is directed, how the safety is ensured (guaranteed), how it is measured. All questions of environmental protection, which compose joint scientific, organizational and technical complex, are included in ecological safety. It says about protection of ecosystems and man as the parts of ecosphere from external industrial dangers.

Federal Law on January 10, 2002 "On protection of the environment"<sup>6</sup> defines ecological safety as "condition of the protection of natural environment and vitally important interests of human from possible negative influence of economic and other activity, emergency situations of natural and industrial character, their consequences".

The concept of radiation safety is fixed in Federal Law on January 9, 1996 "On radiation safety of population".<sup>7</sup> It is defined as "condition of protection of present and future generation of people from the influence of ionizing emission (radiation) harmful for their health". "Threat" is clearly defined as ionizing emission, directed toward the man.

Threat proceeds from sources of ionizing emission, and one of the basic principles of providing radiation safety is "not exceeding of permissible limits of individual radiation doses for citizens from all sources of ionizing emission".

In the basis of legislation on radiation safety is idea about the human as the weakest component of biosphere, which must be protected by all possible methods. It is considered, that if person will be properly protected from the harmful effects of the ionizing emission, then environment will be also protected, since resistance to radiation of the elements of environment (ecosystems), as a rule, is substantially higher than of a person. Radiation safety is provided by the complex of measures of radiation protection.

Here is an explanation of terminology, contained in legislation, which regulates relations of providing safety in using of atomic energy. In the Federal Law on November 21, 1995 "On use of atomic energy"<sup>8</sup> safety is one of the key terms. It is important to note, that general definition is absent, but the content is defined particularly.

Law distinguishes four kinds of danger - radiation, nuclear, fire and technical. The determination of each form is revealed in other normative acts.

Concept of "government control of safety in use of atomic energy", which is contained in the Law "On using of atomic energy", consists of three basic elements:

- development and use of standards and rules;
- licensing;
- supervision on compliance of standards and rules and on conditions of using licenses.

Concerning the concept "nuclear safety", its legislative definition is absent. Legislator, apparently, assumed the fact, that terminology of this new technology has not been hardened yet and changes frequently. Contemporary definitions of terms are transferred into the normative documents, subordinate legislation, such as, for example, "The general provisions of providing safety on atomic power station"<sup>9</sup>. In the provisions is said about safety of nuclear plant as an object, but not mentioned about "personnel, population and environment", which Law "On using of atomic energy" includes.

According to the provisions, nuclear and radiation safety of nuclear plant is defined as "the characteristic of nuclear power station, which makes it possible during the normal operation and disturbances of normal operation to decrease radiation exposure on the personnel, population and environment by the established limits".

Thus, term "nuclear safety" is not determined, but the term "nuclear emergency" is clear established: emergency, connected with the damage of fuel elements, which exceeds specified limits of safety operation, and (or) with atomic irradiation of personnel, which exceeds permitted limits.

This emergency can be arisen by the following reasons:

- by disturbance of monitoring and control of nuclear fission chain in the reactor core;
- by appearance of criticality during reload, transportation and storage of fuel elements;
- by disturbance of abstraction of heat on fuel elements;
- by other reasons, which lead to damages of fuel elements.

Identification of the concepts of nuclear and radiation safety in connection with nuclear power stations as to separate atomic object, reflects insufficient juridical methodology during creation of "The general provisions of providing safety on atomic power station" or absence of sufficient criteria of differentiation of concepts "nuclear safety" and "radiation safety".

For purposes of the protection of the interests of citizens, which exposed to nuclear damage, Federal law "On use of atomic energy" provides fundamentally new system, unknown to domestic civil legislation. Compensation for nuclear damage in accordance with civil law, which does not reflect new requirements of society, is obstructed or impossible. The situation, which was established in connection with the compensation for damage after Chernobyl emergency, confirms these difficulties.<sup>10</sup>

Term "fire safety" is fixed in Federal Law on December 21, 1994 "On fire safety"<sup>11</sup> and is defined as "condition of the protection of person, property, society and state from fires". The base of this term is safety of people, and the threat is fire - "uncontrollable combustion, which inflicts material damage, harm to life and to health of citizens and also to interests of the society and the state."

In comparison with radiation, nuclear and fire safety, another position was formed with definition of concept "technical safety". From the point of view of contemporary legislation, it is legal phantom: there is no law on the technical safety, also there is no its definition within the legislation.

In contemporary Russian legislation is used another concept - "industrial safety", fixed in Federal Law on July 21, 1997 "On industrial safety of dangerous industrial units"<sup>12</sup>. This concept is "condition of protection of the vitally important interests of person and society against emergencies on dangerous industrial units and consequences of emergencies". By emergency is understood "destruction of constructions and (or) technical devices, used on dangerous industrial units, not controlled explosion and (or) emission of dangerous substances". This law contains particular definitions of dangerous industrial units, dangerous substances (inflammable, explosive, toxic and so forth), dangerous types of equipment and kinds of activities.

It is important to note that in the list of dangerous substances, nuclear materials and radioactive materials are absent. Nevertheless, equipment, which works at high pressure and temperatures, and also load-lifting mechanisms are included in operation of Federal Law "On industrial safety of dangerous industrial units". Thus, the law creates conditions for different interpretation of its operation sphere.

Accordingly, concepts "nuclear" and "radiation safety" do not have clear legislative distinction. There is no general criterion of separation of these concepts. On the one side, the object of safety is interests and health of the present and future generations. On the other side, the object of safety is atomic power station,

i.e., nuclear device. Thus, the object of safety is not clearly explained in legislation.

There is no legislative definition of concept “technical safety”. This obstructs clear determination of the sphere of regulation, fixed in Federal Law “On industrial safety of dangerous industrial units”.

In ecological law question about ecological and nuclear safety is still topical. Providing of ecological safety is understood as evaluation criterion of legal effectiveness of rules for environment protection. Observance of these rules is indicator of providing of ecological safety. On the contrary, their disturbance is indicator of susceptibility to ecological danger.<sup>13</sup>

## 2. Content of ecological harm

In civil-legal literature, rules about compensation of harm are usually divided into two groups: general and special. The first group includes rules, which have the general value. These rules are used in all cases, when in the law there are no indications relative to the application of special rules, which establish responsibility on separate kinds of obligations. General nature has the rules of articles 1064, 1065 of the Russian Civil Code<sup>14</sup>. These rules are:

- establish the general conditions of civil- legal responsibility and indicate circumstances, which free from responsibility on compensation of harm;
- determine the bases of compensation for moral damage and so forth.

Subordinate legislation composes the second group. This group includes governmental decrees and also charters, rules and instructions, in which are given an answers to the most varied questions, concerning the compensation of harm.

There are specific principles, inherent only in institute of the compensation of harm: the principle of the fault of a harm-doer, total compensation of harm, interrelation of obligations as a result of infliction of harm with other juridical institutes. The delict (tort), which causes the harm to person or to the property of a person is the base of responsibility as a result of harm infliction.

There are several conditions, which establish the obligations on compensation of harm.

- *Delict (tort)* is action or inaction, which disrupts stipulated rules and personal rights of suffered person. Action is considered as delict, if it violates order or prohibition, established by the rules of objective (substantive) law. Inaction becomes delict, if provided by the rule of law duty is not fulfilled by the person voluntary. Accordingly, the harm inflicts to another person.

- *Infliction of harm* is necessary condition of responsibility on obligations as a result of harm. If there is no harm - there is no responsibility.

Harm to property consists of following: arising the real damage to sufferer; deprivation of the possibility to obtain planned incomes; necessity to carry any material expenditures. The main characteristic of property harm is the fact, that it always can be expressed by definite sum of money. As the property harm civil legislation includes the losses, which bear the persons in the case of infliction of damage to their life and to health (Chapter 59 “Liabilities for damage” of The Russian Civil Code). This is so-called physical harm. Physical harm can be the result of injury or another damage of health. The sufferer also has right to compensation for moral damage (physical and moral sufferings) in accordance with Art.151, 1099-1100 of the Russian Civil Code.

- *Fault of harm-doer (tortfeasor)*. The obligation of compensation is laid on harm-doer only in the case of his fault behavior. For example, if we examine accident on enterprise as the source of the damage inflicted to citizens, the enterprise as owner of the source of increased danger is obligated to compensate harm in accordance with Item 1 Article 1079 of the Russian Civil Code (if only enterprise will not prove that the harm arose as a result of irresistible force or intention of the sufferer).

The fact of operation of the source of increased danger, which inflicted harm, despite the fault of possessor or operator of the source of increased danger, is the base to raise claims for compensation of harm. Thus, Article 54 of Federal Law “On use of atomic energy” says, that responsibility of operating organization for losses and harm, inflicted by radiation exposure, arises regardless of the fault of operating organization.<sup>15</sup>

- *Causal relation* between harm and delict. All actions, facts, events, processes in the life are connected with each other. Thus, if enterprise inflicted harm to natural environment and in connection with this began aggravation of the health of person, it is possible to suppose the causal relation. This causal relation includes the actions of enterprise, as a result of which the natural environment was polluted. The harm inflicted to person is aggravation of his health.

Enterprises, which exert unfavorable influence on natural environment are responsible to citizens for the harm, inflicted to their health. If direct or indirect causal relation with unfavorable influence of natural environment (radiation) to the health is established, it gives the right to claim the compensation of harm in the judicial order.

Actually, the Constitution guaranteed to population the right for compensation of only a part of real ecological harm. Such harm is inflicted by ecological offenses. The same approach is in Federal law “On

protection of the environment". Special rule in this law says about compensation of the harm, inflicted to health of citizens "as a result of violation of legislation in sphere of environment protection" (Article 79). Legislation makes possible for citizens - to recover, and state bodies - to compensate the harm. Such harm causes by the activity, which does not possess all elements of delict.

Thus, regardless of the numerous forms of ecological harm, its elimination consists of three basic methods: 1) preventive maintenance; 2) suppression; 3) elimination of the consequences of ecological offense.<sup>16</sup>

On the special features of origin and compensation, it is possible to recognize three forms of this harm:

- caused as a result of extraordinary situations of natural and industrial nature;
- connected with residence on the territories with an increased risk of radiation, chemical or other environmental pollution;
- connected with residence on the ecologically unfavorable territories.<sup>17</sup>

Claims on compensation of harm to health are possible to file simultaneously with claims on compensation of moral damage. The compensation for moral damage in accordance with Item 3 Article 1099 of the Russian Civil Code is accomplished regardless of the property harm.

The compensation of the harm, inflicted to health, is expressed in losses, which bears the person in relation with aggravation of his health. The additionally expenditures for treatment, restoration of health in sanatoriums, dispensaries, expenditures for treatment, prosthetics, nursing and so forth are regulated in accordance with Item 1 Article 1085 of the Russian Civil Code.

Defendant in lawsuit about the compensation of harm can be legal person or state. Defendant in trial always must be independent legal person. Court trials showed that the simultaneous recovery of compensation of the harm and moral damage in connection with unfavorable influence of radiation to the health is possible. The current Russian legislation and the rules of international law make it possible in the judicial order to recover (exact) the damage fully from the person, legal person who inflicted the harm.

### **3. Compensation of harm as a result of Chernobyl catastrophe**

Atomic energy is one of the most important achievements of man. However, now, especially after Chernobyl catastrophe, there are hesitations, that nuclear energy is benefit and completely safe. It is necessary to understand the nature of radiation. Radioactivity is property of material. Emission (eradiation, appearance)

of the ionizing particles is the feature of radioactivity. This process is called the ionizing emission. The ionizing emission is dangerous for human health and any organism, only with the high levels of exposure<sup>18</sup>.

For understanding of the influence of radiation refer to table 1<sup>19</sup>.

**Table 1 Terms and abbreviations are used in measurement of radiation**

Term	Measures		Relation of measures	Description
	SI	Previous system		
Activity	Becquerel, Bq	Curie, Ci	1 Ci = 37x 10 <sup>9</sup> Bq	the number of radioactive decay per time unit
Dose rate	Sievert per hour, Sv/h	Roentgen per hour, R/h	1 microR/h= 0,01 microSv/h	radiation level per time unit
Absorbed radiation dose	Grey, Gy	Rad	1 Rad=0,01 Gy	the quantity of energy of the ionizing radiation, transmitted to the specific object
Effective dose	Sievert, Sv	Rem	1 Rem=0,01 Sv	the radiation dose, which considers different sensitivity of organs to radiation

“Sievert” is sufficiently high value. The more applicable for measuring radiation dose and radiation background is milliSievert or one thousandth of 1 Sievert. “Curie” in physics, unit of activity of a quantity of a radioactive substance, named in honour of the French physicist Marie Curie. 1 curie (Ci) is equal to  $3.7 \times 10^{10}$  becquerel (Bq). In 1975 the becquerel replaced the curie as the official radiation unit in the International System of Units (SI).

Becquerel is very small value in comparison with the Curie (1 Ci = 37 X 10<sup>9</sup> Bq). Becquerel is usually used for measuring the content of radionuclides in water, air, foods and materials. Curie is used for measuring of pollution density of the soils.<sup>20</sup>

It is necessary to show the general picture of emergency consequences, which took place on Chernobyl atomic power station on April 26, 1986.

Immediately after emergency the radioactive isotopes of iodine were the greatest danger for population. The maximum content of radioactive iodine in the milk and the vegetation was observed from April 28 to May 9, 1986. However, during the period “iodine danger”, safeguard measures had not been provided. For Russia on the end of April and May, were the greatest influence of radioactive isotope Iodine -131, which could penetrate to human’s organism with milk, eggs and vegetables. Since June 1986, the radiation exposure was formed due to the radioactive isotopes of Caesium-137.

Radioactive discharges from the very beginning were spread to different directions along the air flows, passed at the different altitude. The major transfer of radioactive discharges occurred in the west and the northwest to the territory of Belarus and further, to the Western Europe. Next day discharges reached Poland and Sweden. Because wind direction changed, in the separate areas fell rains of different intensity. As a result, there was elution of radionuclides from the clouds. An extremely uneven picture of pollution occurred.

For population the most serious medical consequence of emergency became thyroid gland cancer. The thyroid gland - is organ, sensitive to exposure by radioactive iodine. Those who were children and adolescents at the moment of emergency are the most vulnerable to this disease. In the period 1992-2000 in Belarus, Russia and Ukraine were revealed about 4000 cases of thyroid gland cancer in people, who at the moment of emergency were 0 -18 years old.<sup>21</sup>

**Table 2 Levels of pollution in European countries by Caesium-137 (unit of measure is  $Km^2$ )<sup>22</sup>**

Country	Rate of Caesium-137, kiloBq/m <sup>2</sup>					
	10-20	20-37	37-185	185-555	555-1480	1480-
Belarus	60 000	30 000	29 900	10 200	4 200	2 200
Russia	300 000	100 000	48 800	5 700	2 100	300
Ukraine	150 000	65 000	37 200	3 200	900	600
Sweden	37 400	42 600	12 000			
Finland	48 800	37 400	11 500			
Bulgaria	27 500	40 400	4 800			
Austria	27 600	24 700	8 600			
Norway	51 800	13 000	5 200			
Germany	28 200	12 000				

The table shows, that the greatest part of pollution was fallen in Russia, Ukraine and Belarus. Thus, the majority of suffered people lives in these countries.

As a positive example of protection citizen's constitutional rights to live in favorable environment and the compensation of harm related to violation of these rights, can be found in the Decision of the Russian Constitutional Court on December 1, 1997 № 18- P " On case about checking of correspondence to the Constitution of separate norms of Article 1 of Federal Law on November 24, 1995 " On the amending of the

Russian Law " On the social protection of citizens, who were exposed to radiation as a result of the catastrophe in the Chernobyl atomic power station"<sup>23</sup>

In 1991, the Constitutional Court of Russia was created. Law "On the Constitutional Court of Russia" was enacted on July 12, 1991.<sup>24</sup> It was established for the following purposes:

- protection of the sovereignty of nations in Russia;
- protection of constitutional system;
- protection of basic rights and freedoms of man, accepted by constitution;
- protection of basic rights and freedoms of citizens and legal persons;
- maintenance of supremacy and direct action of the Constitution over the whole area of the Russian Federation.

Furthermore, the Constitutional Court establishes a correspondence to the Constitution (basic law) international agreements, Russian legislation and legislation of the subjects of Russia, and also the practice of enforcement (operation) of Russian legislation. In its activity the Constitutional Court, according to the law, must contribute to providing of lawfulness and to strengthening of law.

From the content of Decision of the Russian Constitutional Court on December 1, 1997 № 18- P follows, that in 1997 citizens "B", "G" and "Z" applied to the Constitutional Court with demand to verify constitutionality of the rules of Law "On social protection of citizens, who were exposed to radiation as a result of the catastrophe in the Chernobyl atomic power station". The reason for demands is the fact that in accordance with the law, soldiers, who became invalids as a result of Chernobyl catastrophe, received only retiring pension, but the compensation of harm was not provided. In the opinion of applicants, rules of the law contradict with Section 4 of Article 15, Sections 1, 2 of Article 19, Section 1 of Article 39, Article 42 and Section 3 of Article 55 of the Russian Constitution.

The Constitutional Court decided, that soldiers, who became invalids as a result of the Chernobyl catastrophe, irrespective of receiving of retiring pension, according to sense of Article 42 of the Constitution, must have right to compensation of harm, like other citizens, who suffered from Chernobyl catastrophe.

As it follows from the content of disputed rules of the examined law, providing compensation of the harm, inflicted by extraordinary radiation catastrophe, legislator did not follow the constitutional - legal duty, contained in Articles 1, 2, 7, 18, 42 and 53 of the Russian Constitution. Accordingly, legislator diminished, and in some cases inadmissibly restricted protected by the Constitution rights and interests of citizens, who were soldiers and performed their duty on elimination of consequences of Chernobyl catastrophe.

The Constitutional Court acknowledged that state recognizes responsibility for consequences of ecological catastrophe as a result of the large-scale radioactive contamination of biosphere, which affected fates of millions people, who live in vast territories.

As a result, emergencies substantially violated not only right to the favorable environment (Article 42 of the Russian Constitution), but also, other constitutional rights and interests of citizens, related to the protection of life, health, dwelling, property, or right to free movement and selection of the place of a stay and residence. The rights were derogated so significantly, that inflicted harm becomes actually irrecoverable.

It generates the special nature of relations between citizen and state, which consisted in the fact that state incurs the responsibility of compensation of a harm, which, on the basis of its scale and a number of victims, cannot be compensated in order, established by civil, administrative, criminal and other legislation. In the Decision of Constitutional Court is noted, that stability in the sphere of constitutional- legal relations between state and citizen must not be less in its level, than in the sphere of other legal relationships, which are based on the standards of subject legislation. This constitutional obligation of state corresponds to the right of citizens to favorable environment, adequate information about its condition and to the compensation of the damage, caused to their health or to property by ecological catastrophe, and it follows from Articles 2, 18 and 53 of the Russian Constitution.

Using of nuclear energy, according to Subsection «i» Section 1 Article 71 of the Russian Constitution is under jurisdiction of the Russian Federation. The objects of nuclear power engineering also relate exclusively to federal property. This constitutional obligation of state is defined particularly in Federal Laws "On use of atomic energy" on November 21, 1995, "On protection of population and territories from natural and industrial extraordinary situations" on December 21, 1994<sup>25</sup> and "On radiation safety of population" on January 9, 1996. The above legislation prescribes the system of measures, directed toward providing of radiation safety of population and its protection from the extraordinary situations, which also include the situation, arisen in connection with the catastrophe on Chernobyl atomic power station.

The Constitutional Court proceeded from the principles of legal and social state, contained in Articles 1, 2 and 7 of the Russian Constitution. There are guarantees of the social protection of citizens, provided by state in accordance with the purposes, fixed in Article 7 of the Russian Constitution. The guarantees in relation with the right to favorable environment and protection of health can include the complex of privileges and compensation, which is beyond the limits of the compensation of damage, inflicted to health or to property by ecological delict.

In particular, such measures are provided by the Russian Law on November 26, 1998, which is directed toward protection of rights and legal interests of citizens of the Russian Federation, who were in the zone of influence of unfavorable factors, such as disposal of radioactive wastes into Techa river, arisen as a result of the emergency in 1957 on the industrial association "Mayak" in Chelyabinsk region<sup>26</sup>. This law also includes persons, who participated in elimination of the emergency consequences. Thus, operation of the law includes citizens who had been in the zone of radioactive contamination, arisen as a result of the emergency and the disposal of radioactive wastes into Techa river.

In accordance with the active laws, for obtaining of privileges and compensation for citizens it is necessary: 1) to prove the fact of residence in contaminated territory; 2) to establish the fact in judicial order; 3) on the basis of judicial decision to claim the benefits and compensations.

Law "On the social protection of citizens, who were exposed to radiation as a result of the catastrophe in the Chernobyl atomic power station"<sup>27</sup> does not cover all categories of citizens, who were exposed to radiation; therefore many victims do not obtain compensation and benefits. Such categories comprised the children of the first and subsequent generations of citizens, exposed to radiation. Children, despite the fact that harm also inflicted to their health, do not obtain compensation, except yearly free sanatorium health treatment.

#### **4. Compensation of harm as a result of emergency on "Mayak" plant**

Article 42 of the Russian Constitution fixes right of each person to the favorable environment, adequate information about its condition and compensation of the damage, inflicted to health or property by ecological offense.

Domestic legislation does not give the definition of concept "favorable environment", although it has legally significant criteria, expressed, in particular, by the system of rules, regulations, and restrictions. The system of rules, as general requirements for development of "favorable environment" is determined by the Federal Law "On protection of the environment".

For example, contribution of atmospheric air pollution to the total sickness rate of adult population composes approximately 10%, and into the sickness of children - more than 30%. The diseases of respiration organs are about 50%. On the majority of known estimations, approximately 20% of sickness of population are caused by action of the factors of environment (natural climatic factors and the quality of environment),

but this percentage is substantially higher in the separate territories. Specialists note, that at present the chronic diseases of those organs and systems, which in essence fulfill the barrier functions between the organism and external environment - respiratory, immune systems, skin and others are increased.<sup>28</sup> Radiation pollution has significant influence on the quality of environment. Therefore the risk of such diseases considerably rises with the lasting effect of radiation.

Ecologists consider, that the natural environment, in which Russian population lives, corresponds to critical condition, and according to some parameters - catastrophic. Some territories in Russia became the zones of continuous and prolonged ecological disaster.<sup>29</sup>

The territory of Chelyabinsk region historically became the place for implementation of domestic nuclear program. A long-standing activity of industrial association "Mayak" (hereinafter "Mayak" plant) was accompanied by the radiation emergencies of industrial and anthropogenic nature. Such emergencies become unprecedented in the world practice. In the period 1949-1956, the liquid wastes with average and low level of radioactivity were dropped into Techa river. Local population used the river's water for drink and household purposes.

"Mayak" plant was created in the South Urals at the end the 40th years for producing of plutonium for weapons and processing of fissionable materials. There are some plants compose the enterprise:

- uranium-graphite reactor on natural uranium (Plant "A");
  - radiochemical production on the separation of plutonium-239 from irradiated in the reactor, uranium (Plant "B");
  - chemical-metallurgical production on producing of metallic plutonium (Plant "C");
  - the complex of the warehouses of radioactive wastes (Plant "S").
- Process of increasing of Plutonium production on "Mayak" plant (during 1948-1955, there were 6 nuclear reactors put into operation), and also the absence of the reliable technologies of processing and storing radioactive wastes, led to dump of radioactive wastes into Techa river since 1949. Moreover, until July, 1951 dumping of wastes was practically uncontrolled. This led up to radioactive contamination of river system and exposure to radiation of inhabitants of the coastal areas.

It is customary to assume, that in the above mentioned period were dropped 76 million cubic meters of sewage water with general activity approximately 2750 thousand curie<sup>30</sup>. Only in the surrounding of the Chelyabinsk region on the river were located 26 inhabited localities, included about 15 thousand people. In these years occurred the pollution of flood land of river, which was used for hay field and pastures.

In September 1957 on the chemical division of "Mayak" plant occurred explosion of the warehouses with highly radioactive wastes. On its scales and consequences this radiation emergency is evaluated by experts as one of the largest in the world. Two million curies of radioactivity were spread on the area of approximately 20 thousand square kilometers in Chelyabinsk, Sverdlovsk and Tyumen regions. In the contaminated terrain lived about 270 thousand people. 10 thousand of these people was in the territory with the density of radioactive contamination more than 2 curies per square kilometer.

The next aggravation of radiation occurred in 1967. This year summer in Chelyabinsk region was rainless. In the period since April until May occurred the wind spreading of Karachay lake's radioactive bottom deposits (wastes). Since 1951 this lake was used for collection of medium-active liquid wastes. The radioactive dust, which includes 600 curies of radioactivity, in essence due to Caesium-137, was scattered in the territory of 1800 square kilometers. Only the above noted situations led to overexposure to radiation of several hundred thousand people, forced evacuation of 42 populated areas and temporary termination of use of agricultural lands at almost 68 thousand hectares. At present time on the Techa riverside in territory of Chelyabinsk region are four populated areas, which inhabitants continue to expose to radiation. Among the inhabitants of these places there are groups, which accumulated radiation dose, exceeds scheduled levels accepted today in the entire world. The maximum content of Strontium-90 is observed today in people, which on the period of especially concentrated discharges of radioactive wastes into Techa river (1949-1951) were teen-agers.<sup>31</sup>

Federal Law "On social protection of the Russian citizens, who were exposed to radiation as a result of emergency in 1957 on the industrial association "Mayak" and disposal of radioactive wastes into Techa river" indicates categories of the people, which are guaranteed to get benefits and compensations, established by this law. Thus, the state recognizes its responsibility, enacting special laws on social protection of citizens, who were directly exposed to radiation as a result of emergencies and other incidents.

However, pertaining to the persons, for whom the harm was inflicted mediately, as a result of radiation influence to the parents, grandmothers, grandfathers, "the legal mechanism" of protection is not effective.

The descendants of exposed to radiation people, who were evacuated and voluntarily left the contaminated areas after emergency on association "Mayak", proved to be without the proper social protection. The present legislation provides the benefits only for recover of health of victim's children. At present, there is no legal mechanism on the compensation of harm to the health and also of moral damage to subsequent generations, which were born from the diseased parents or parents with genetic deviations.

The compensation of harm does not cover all categories of citizens, which are suffered from the harm to health in relation with residence in radiation contaminated territories. Those people, who were exposed to radiation, have sick children in the first and in the second generation. The reason of disease of the children is an influence of radiation to their parents.

The population of the riverside villages underwent the chronic, long-standing radiation exposure, caused both by the external gamma-radiation and by internal radiation due to use of river water and local food products. The basic radionuclides were Stroncium-90 and Cesium-137. The injured organs of population, exposed to radiation were skeleton and bone marrow. For prevent overexposure of population, there were moved about 8 thousand people, who lived in the most contaminated territories of Techa river. For the unknown reasons the inhabitants of Muslyumovo village were not moved, while the population of villages below and above of the Techa river were moved. Thus, at present Muslyumovo village is the nearest populated area to the place of dump of radioactive materials by association "Mayak". Muslyumovo village is located in Kunashakskiy district of Chelyabinsk region on Techa riverband. The location of the village is about 78 kilometers from the place of discharge of radioactive wastes in 1949-1956. Pollution of Techa river by radionuclides is shown in Table 3.<sup>32</sup>

**Table 3 Average radionuclide composition of discharges into Techa river in 1949-1956**

Radio-nuclide composition	Stroncium-90	Stroncium-89	Caesium-137	Niobium-95, Zirconium-95	Ruthenium-103,106	Rare-earth element (lanthanide)	Other
%	11,6	8,8	12,2	13,6	25,9	26,8	1,1

At present, the density of pollution by strontium-90 in Techa river in the limits of the village is 85 Ci/km<sup>2</sup>, by cesium-137 is 71 Ci/Km<sup>2</sup>. In the course of time, sinking of radionuclides to soil on depth 60 cm has occurred, but the basic part of activity (80%) is still concentrated in the depth 30 cm. It provides entering of radionuclides into grass on flood lands of Techa river.

By laps of time, tendency of gradual reduction of the level of radionuclides in the river water was noted. The specific activity of strontium-90 in the river water near Muslyumovo village in 1999-2000 was about 15 Bq per liter (permissible level - 5 Bq per liter). The specific activity of cesium -137 in the river water in 1999-2000 composed 0.2 Bq per liter (permissible level - 11 Bq per liter). At present time, according to

decisions of administrative bodies, use of flood lands and river water for personal and economic purposes are prohibited.

Some cases show the difficulties in proving of radiation harm. In May 2001 one of the district courts of Chelyabinsk region tried the claim of citizen "I" (plaintiff) to "Mayak" plant (defender) on compensation of the harm, inflicted by damage of health, and recovery of financial compensation for the moral harm. Citizen "I" is invalid of the third group. Cause of disease is unfavorable influence of environment, an influence of radiation to the health of her parents, grandmother and grandfather. All lineal relatives of plaintiff lived in areas, which were exposed to radiation as a result of defender's emergency. Plaintiff's mother was conceived after the irradiation of the father, who worked as a building engineer in Chelyabinsk road company in the period 1948-1951 years. The company had been built a bridge over the Techa river.

At present plaintiff suffers of serious chronic diseases. The negative influence of natural environment caused by activity of defendant, led to the inborn disease of plaintiff "the inborn immunodeficiency condition", "agammaglobulinemia". Agammaglobulinemia is a group of the congenital or acquired diseases, which are characterized by absence or critical decrease in the level of immunoglobulins in the blood plasma. This leads to reduction in the resistibility of organism, increased sensitivity to infection causative agents. Possible treatment: lifelong injection of medical preparations of immunoglobulins, antibiotics.<sup>33</sup> The disease is confirmed by the conclusion of Regional Expert Council for identification of the causal relation of diseases, disability or death of those, who were exposed to radiation. In the conclusion of Expert Council noted, that the disease of plaintiff is connected with the radiation exposure to the parents during their residence in the territory, contaminated with radionuclides as a result of radiation emergency.

Law court based the judgement on follows. "Mayak" plant is legal person and according to Article 32 of the Civil Code of Russian Soviet Federative Socialist Republic (RSFSR), enacted on 1964 (hereinafter, CC RSFSR)<sup>34</sup>, has an independent responsibility for the harm, caused as a result of its activity. Also, according to Articles 33, 444, 454 of CC RSFSR, state does not responsible for obligations of the state organizations, which are established as legal persons. Law court rendered judgement for plaintiff and recovered from "Mayak" plant 431 rubles (Russian currency) monthly, as a compensation of harm to health. The claim on compensation of moral damage law court did not satisfy, because on the moment of infliction of the harm to Plaintiff's parents, such responsibility was not established

"Mayak" plant appealed the judgement of law court. Judicial Chamber for Civil Cases of Chelyabinsk regional law court by its decision on September, 2001 made reversal of the previous judgement. The reason

for reversal was: the law court used the rules of material and procedural law incorrectly. Judicial Chamber noted that law court did not consider that Article 454 of CC RSFSR is the general rule, which regulates relations on compensation of the harm, inflicted by the source of increased danger. The harm was subject to compensation according to the rules of this Article, if law does not provide another responsibility of harm-doer.

Article 2 of Law "On social protection of citizens, who were exposed to radiation as a result of the catastrophe in the Chernobyl atomic power station" indicates, that relations, connected with the Chernobyl catastrophe (operation of this law is extended to the citizens, who were exposed to radiation as a result of emergency on "Mayak" plant) are regulated by this law. Current Russian legislation can be applied, if it does not contradict this law and to other normative acts of Russian legislation, enacted in accordance with this law. Thus, the rules of the civil legislation could be used only in the context of special rules, of the Federal Law "On social protection of the Russian citizens, who were exposed to radiation as a result of emergency in 1957 on the industrial association "Mayak" and disposal of radioactive wastes into Techa river". It is important to note that, civil legislation operates within the bounds, which did not contradict special rules of above said law.

Explaining its judgement, The Judicial Chamber noted that, enacting this law, legislator considered that the state acknowledge responsibility for the consequences of industrial emergency. That is why, the harm, caused to citizens cannot be compensated in the order of civil, administrative, criminal and other legislation. In other words, the rules of civil legislation could be used only in the context of special rules of Law on social protection of the Russian citizens, who were exposed to radiation as a result of emergency in 1957 on the industrial association "Mayak".<sup>35</sup>

Analyzed case indicates a number of problematic questions, which arose in the process of applying above said laws. In particular, there are some problems: what rules of law regulate the such legal relationships; who is responsible for compensation of damage; the amount of plaintiff's claims; how the lineal descendants of citizens, who were exposed to radiation can defend their rights. These problems are still not regulated in legislation.

There is another case related to compensation of moral harm. In 1995 family "S" and family "N" sued to "Mayak" plant for compensation of moral harm in relation with the residence on radiation-contaminated territory of Kunashakskiy district in Chelyabinsk region. The claims were applied in Ozersky city court of Chelyabinsk region. Essence of the claims of families "S" and "N" is moral damage (physical and moral

sufferings) in relation with residence on radiation- contaminated territory, as a result of industrial activity of "Mayak" plant. Prolonged residence in radiation-contaminated territory to the entire family "S" and to several generations of family "N" is inflicted harm to health. In the family "N" was born the child with heaviest pathology (without leg and with deformed arms). In the family "S" moral harm connected with the fact, that husband and two children died from leukemia. The wife and other children are also suffering from diseases.

Arising of diseases in the entire family "S" is the consequence of exposure to radiation and prolonged residence in the territory, which was exposed to radioactive contamination. Husband died, children can not help mother, because they were ill and needed medical aid. All their illnesses are confirmed by medical institutions. Death of husband and two children is in connection with exposure to radiation. Wife worked as an observer of meteorological station. Her house was located in 100 meters from the Techa riverside. Children constantly supported her in the work. They took samples of water and silt. The samples were stored in her house for 2-3 days. The moral damage is inflicted to wife in family "S" not only in connection with death of husband and two children, but also from the realization of the fact that she will survive them and become alone. These thoughts snatched her last hopes for serene old age.

The second case on the compensation of moral harm was filed by spouses "N" to "Mayak" plant (defendant). The case was sued as a result of born on September 8, 1992 of the son with congenital deformities. Happiness of born of the first son was darkened by a whole series of the tragic circumstances. Mother of the child long time was in condition of psychological shock. She could not believe, that she is healthy woman, gave birth to invalid child. Subsequently, it became known, that besides the physical pathology the child has a whole series of the heaviest irremediable diseases. These circumstances after experience of shock were an additional terrible impact for the family. Reasons undoubtedly interested parents, and they achieved unanimous opinion that the reason is in lasting effect of radiation influence to all relatives of child from the side of father and mother. All lineal relatives of child in two generations lived in the territory of Chelyabinsk region in the areas, which were exposed to radiation as a result of the emergency on association "Mayak" and discharging of radioactive wastes into Techa river. Residence of several generations of the family in the zone of ecological emergency was reflected on the child's health.

Plaintiff demanded to compensate the moral damage in amount of 500 000 000 rubles. The law court decided to recovery from "Mayak" plant in favor of family "N" 50 000 000 rubles.<sup>36</sup>

In the case of family "N", reports of medical experts confirmed assumptions about the reason of born of child-invalid and an influence of radiation to several generations of family. Serious genetic mutations arose

under the influence of radiation. Genetic expertise was represented into law court as the basic proof of wrong-doing (but also inaction) of defendant, which inflicted moral damage to families "N" and "S".

Data of expertise became the basic proof of the causal relation of wrong-doing of defendant (owner of the source of increased danger). The wrong-doing was expressed in damage to favorable environment, where families "S" and "N" lived. The environmental pollution by radionuclides and inaction of defendant in restoration of the favorable environment is the main reason for infliction of moral damage.

The legal reason for filing such cases was the rule on compensation of moral damage introduced into the Basis of civil legislation of the Union of Soviet Socialist Republics (USSR) on 1991<sup>37</sup>(Article 131). The Basis was put into effect in the territory of Russia since August 3, 1992 in accordance with the Decision of the Supreme Soviet of Russia (former Russian Parliament)<sup>38</sup>. The content of this article subsequently with some changes entered into new Russian Civil Code on 1994 (Article 151).

Content of the concept of "moral damage" according to Article 131 of the Bases of civil legislation is "physical and moral sufferings". Thus, filing this case, it is necessary to prove that wrong-doing (inaction) to plaintiff is the reason of not only moral, but also physical sufferings (harm, inflicted to health). But, after turning into the law court with claim, plaintiff must prove the circumstances, which led to moral sufferings. The presumption of moral damage does not follow from the Russian legislation. Accordingly, plaintiffs must fully prove the fact of infliction of harm, so that the law court would decide a question about compensation in favor of plaintiff.

The part, which filed the claims (plaintiff), must find proofs itself, pass the most complex medical examinations, pay this work and present to the law court all proofs. It is very difficult for plaintiff to prove the fact of radioactive influence on his organism and to pass in connection with this objective medical examination. There is a problem of objective evaluation of health condition in radioactive-contaminated territory.

According to Decree of Ministry of Health and Care of Russia on October 16, 1992, № 279 "On rendering of medical aid and establishment of causal relation of diseases, disablements and deaths to persons, who were exposed to radiation"<sup>39</sup> the only medical institution was authorized to provide examination. It is the Russian Interdepartmental Expert Council at the Moscow Research Institute of Diagnostics and Surgery of the Ministry of Health and Care of Russia (former branch of the Institute № 4 of Biophysics). For a long time this Institute collected statistics of radiation influence to human organism. During soviet period this information was confidential. At present the Institute works with "Mayak" plant in close collaboration.

In accordance with the above mentioned decree was established the list of the diseases, connected with radiation exposure to the man. If disease was not included into the list, then it was not possible to prove causal relation with radiation influence.

Since 2001 this Decree was nullified. But there is a lack of institutions, which are able to provide a complex examination of radiation influence.

Citizens, who suffered from ecological offenses, are put aside by state to the lowest social level. They realize that damages are inflicted to their health, but imperfect legislation does not make possible for them to clime in judicial order for compensation of harm, restoration of violated rights, guaranteed by the Russian Constitution.<sup>40</sup>

The structure of the causal relation between the wrong-doing or inaction and moral damage in the majority of cases is implicit (indirect) moral harm. Current legislation does not provide presumption of moral harm. Presumption of harm makes possible to simplify procedure of proving of casual relation between action of wrong-doer and the health of suffered person. If this procedure will enter to legislation, an effective defense of rights and compensation of harm for ecological offenses can be provided.

## **5. Procedural features of lawsuits for compensation of harm**

Right to compensation of harm, inflicted to health by unfavorable environmental effect, is a method of realization and protection of the right of citizens to favorable environment. The relations, which arise as a result of infliction of ecological harm to health, are the complex of civil, constitutional and administrative type of legal relationships. They appear correspondingly to doing of ecological offense.

Suffered person can apply for protection of the violated right directly to the harm-doer or into law court. First of all, he does not pursue the purpose of punishment and reeducation of harm-doer. He seeks the way to receive recovery for unfavorable consequences, caused by harm-doer's actions.<sup>41</sup>

In the real life ecological harm is the result of functioning of ecologically harmful industry, which determines condition of environment in particular territory. Frequently harm appears in connection with the natural phenomena of disaster and emergency character, which destroy any economic objects and lead to emergency pollution.

It is obvious, that the bases of the compensation of harm and respectively, the sources of compensation are different. In different situations the responsibility of economic subjects, state, governmental bodies is

possible. The losses, born by citizens can be compensated in the judicial order (by suing) and extrajudicial order (periodic budgetary payments, special material support for injured population from budgetary reserve funds, insurance indemnity in case of the preliminary insurance against risks and others).

In decisions of the Russian Constitutional Court are formulated the principles of: full compensation of harm, inflicted by the state; prohibition of discrimination in relations between the citizen and the state with compensation of harm and the payment of different allowances. Absence in the legislation of the general legal bases of state's responsibility for inflicted harm, allows to state to "solve problem" in imperative order, whether accept responsibility or not. In ecological relations compensation of harm by the state is provided in cases, directly established by legislation (compensation of harm to the victims of Chernobyl catastrophe and emergency on "Mayak" plant), but not on general reasons. This approach contradicts not only principles of juridical responsibility, but also general principles of the construction of rule of law (constitutional) state.<sup>42</sup>

Analysis of legislation and judicial practice makes it possible to realize the conclusion that the natural right to favorable environment and to compensation of harm to the health of citizens, inflicted by violation of the right, is still insufficiently filled with particular content.

Russian legislation on compensation of harm to health as a result of radiation exposure is complex and volumetric. Therefore it is necessary to focus attention on basic normative acts.

Basic Federal laws, which act at present time, are:

- Law on May 15, 1991 "On social protection of citizens, who were exposed to radiation as a result of the catastrophe in the Chernobyl atomic power station";

- Federal Law on November 26, 1998 "On social protection of the Russian citizens, who were exposed to radiation as a result of emergency in 1957 on the industrial association "Mayak" and disposal of radioactive wastes into Techa river".

It is possible to divide citizens, who were exposed to radiation, into two categories.

The first category is citizens, who fall under operation of laws, which provide for assignment a social benefits and compensations for harm to health, but by different reasons do not obtain it.

In order to obtain social protection (benefits), provided by law, it is necessary for citizens, in accordance with the current legislation, to obtain specific status, provided in the law, for example "evacuated person", "emergency liquidator" and so forth. In such situation, it is necessary to apply to regional administrative bodies of social protection and present the documents, which confirm the fact of living in radiation damaged areas, exposing to radiation and other documental proofs of radiation influence. In case of unsubstantiated

refusal, all documental proofs should be filed in law court. The documental proofs should have necessary references to the Russian Constitution and current legislation.

At present time there is an important problem, that many citizens don't know how to prove the juridical fact of residence on radiation-contaminated area. In accordance with Russian Civil Procedural Code, it is possible to establish with assistance of court, juridical fact of living on the contaminated territory, i.e. to prove in judicial procedure and to establish the fact of residence on radiation - contaminated area. Proofs play the predominant role in litigation.

Proof in the law court can be witness testimony, documents, examinations, photographs and other. In case of the acknowledgement of juridical fact in a court, the judgement should be passed to administrative bodies of social protection. Social benefits, provided by the law, can be demanded on the basis of judgement.

The second category is citizens, who were exposed to radiation, but did not obtain benefits and compensation, because of absence in the law of direct rules about their status. First of all, it concerns the children of first and other generations of persons, who were exposed to radiation. For effective protection of their rights, it should be used a legal institute of compensation of harm.

One of the basic problems of compensation of harm to health of person, who was exposed to radiation, is determination of the causal relation between harm and wrong-doing (delict) of legal or physical person. If enterprise caused harm to natural environment and as a result an aggravation of health has begun. It is possible to determine a causal relation between the enterprise activity and aggravation of health.

Therefore, one of the consequences of environmental pollution can be aggravation of health. Casual relation and reasons of responsibility must be proven in trial.

In the Decree of Constitutional Court on June 19, 2002, № 11-P indicated:

“Procedure of designation and determination of compensatory allowance, provided by the base law, does not require proving of extent (volume) of harm, inflicted to health. At the same time, compensation of harm on the basis of civil legislation rules is not excluded, if citizen files himself to law court for protection of his rights. The possibility of payment of additional allowances, according to judicial decision and inadmissibility of decrease of the already established amount of compensatory allowances can increase guarantees of the protection of rights and legitimate interests of citizens, who suffered from Chernobyl catastrophe”.<sup>43</sup>

The civil legislation rules are follow: Chapter 59 of the Civil Code, which establishes not only general regulations of compensation of harm, but also contains special rules, which provide responsibility of legal

person for the harm, inflicted to workers (Article 1068) and also responsibility of state administrative bodies, local government or their officials (Article 1069).

In accordance with Article 1064 of the Russian Civil Code "General grounds for liability for damage", is intended, first of all, the material damage, which is manifested by decrease of the property of suffered person as a result of violation his substantive right and (or) the depreciation of nonmaterial comforts (life, health etc). A volume of compensation according to the general rule of Article 1064, must be full, i.e. suffered person are able to get compensation of real damage and lost profit (Articles 15, 393 of the Russian Civil Code).

Before filing a lawsuit, it is necessary to present proofs of substantiation of demands, namely:

- suffered person lived in contaminated territory;
- conclusions of doctors (experts) about the fact, that reason of disease is influence of radionuclides.

Expanded definition of the concept of "moral damage" is contained in Decree of the Plenum of Russian Supreme Court on December 20, 1994 "Some questions of the application of legislation about the compensation of moral damage"<sup>44</sup>.

Furthermore, separate rules, which regulate order of compensations for harm, inflicted to citizens, are contained in the laws, enacted since 1991. Such laws include, for example, Federal Law on January 10, 2002 "On protection of the environment".

## **Conclusion**

According to Federal Law " On radiation safety of population" citizens, who live in the territories, which are adjoined to plants with sources of radiation emission, have a right to social support, if there is a possibility of exceeding established basic limits of radiation doses. An order of providing of social support must be established by law. At present time this Law is not enacted.

Federal law "On protection of the environment" says about adoption of the special law on the zones of ecological emergencies, which would determine the order of declaration and establishment of regime of these zones. Actually, the same law must establish the content of the regime in zones of ecological emergencies. The corresponding law project was developed ("On status of the zones of ecological emergency and regulation of economic and other activity to this areas"), but has not enacted yet.

It is necessary to create long-term state programs on different aspects of radiation problem, especially within the framework of the concepts of demographic evolution of the Russian Federation. Genetic fund is

one of the natural objects, which needs regard and protection. This concept is applicable to the whole animal and plant world, but it is possible to mean also the gene pool of people, nation. The degradation of environment can bring and leads up to irreversible changes of the man.<sup>45</sup>

The building of new atomic power plants must be accompanied by fulfilling severe ecological requirements during selection of the place of location and during construction. Since the atomic power plants are potentially ecologically dangerous objects, estimation of correspondence to the ecological requirements of this economic solution is completely logical measure.<sup>46</sup>

According to legislation, the responsibility for damage carries an operating organization, which obtained a license for operation of nuclear plant. Another important requirement is observance of the principle of objective responsibility (regardless of the fault of harm doer). Since the damage in terms of money can reach big sizes, appears the necessity for development of special mechanisms for financial guarantee of responsibility. One of the methods of solution of this problem is creation of special insurance fund, which includes the payments of operating organizations.

There are some important measures for estimation of responsibility in using of nuclear objects.

- Legal rules defining arising of responsibility are not coordinated among them and allow various interpretations. For example, there is no equal understanding of the term "nuclear safety" in legislation. The practice of management for using of atomic energy and safety regulation has not quite adequate legislative substantiation and needs it. The absence of precise mechanism of arising of responsibility finally has an adverse effect to the safety of atomic objects;

- Novelty of nuclear right in Russia and inconsistency of actions by legislative and executive branches of state authority is one of the reasons of insufficient legal regulation of nuclear safety. It is related to the fact that urgency of such coordination does not follow from the practice of using of atomic energy where serious failures are extremely rare. Project, scientific, operating organizations, and in official bodies the personal official responsibility is highly developed at decision-making, cultivated since the times of beginning of nuclear industry. It is a tradition. But it is still no tradition of civil responsibility for possible and occurred damages as a result of radiation contamination. There is no precise legal mechanism for proving and compensation for damage;

- Atomic engineering really requires clearness and discipline which are maintained by clear legislation, education, selection and control. But, in many cases legislatively enacted measures were taken at infringement of the laws at all stages of life cycle of the objects - from placing till withdrawal conclusion

from operation. And absence of measures for arising of responsibility causes more harm to the sphere of using of atomic energy. Inconsistency of laws in various spheres of human activity can result in improper arising of responsibility of various legal and natural persons. Denial of responsibility connected with various interpretations of similar concepts in different legislative and legal acts in sphere of using atomic energy. There should be taken some measures for elimination of denial practice.

- Creating of the laws in conformity with establishing of clear, transparent system of arising of responsibility of all participants of using of atomic energy is the measure of achievement the basic purpose of nuclear technology. This purpose is creation of conditions in which full safety is guaranteed.

Information about condition of atomic objects is important component of providing of civil liability. This component was absent in the Soviet time. The state must facilitate citizens in sphere of civil rights protection. Citizens should be informed about: law, which provides their radiation safety; procedure of protection their rights and obtaining compensation in case of radiation influence. It would be expedient to fill term "nuclear safety" with additional content: concept of "personal safety from radiation influence". In this case the mechanism of civil-legal liability would become more transparent and comprehensible.

The state enacted special laws on the compensation of radiation damage in connection with Chernobyl catastrophe and emergency in "Mayak" plant. The damage became so significant, that these laws could not provide full compensation. Thus, legal relations between persons, who were exposed to radiation and the state, turn to the new stage. State assumes obligation to compensate damage, and citizens have rights to use this obligation and prove the damage in law court. At the same time, legislation contains the complex and imperfect system of the compensation of radiation harm judicially. Therefore, citizens have little opportunities to obtain compensation.

Suffered person must prove that particular substantive or moral damage arose, and this damage is consequence of defender's behavior. Proving of this consequence is the most difficult task. Entire complex of proving can be conditionally divided on several components. For proving of harm it is necessary:

- To confirm the ecological nature of inflicted harm (causal relation between harm to health and radiation pollution). It is required to establish the harmful substance (radiation), which caused disease or another injury to health, and the biomedical aspects of its action and determine possible ways and moment of its penetration into the human's body.

- To determine belonging of this substance (radiation) to any source of emission (causal relation between environmental pollution and the activity of atomic objects).

- To specify degree of participation of the contaminator in forming of harm (causal relation between ecological offense and the volume of caused harm).

It is obvious that above-mentioned procedures are extremely complicated for citizens.

A number of problems appear in the territories, contaminated by radiation.

- The special laws establish the right of citizens to obtain privileges and the allowances, connected with residence in the radiation contaminated territories. But, if person changed residence to another territory, all privileges are to be ceased.

- The movement of citizens into the clean areas for permanent residence is extremely difficult, because the federal budget allots insufficient money means. In this relation the constitutional rights of citizens to health, indicated in the Russian Constitution are violated.

- The rehabilitation and decontamination of polluted territories are almost not provided. As a result, there are no clean pastures for cattle farms and pure clean water.

Position of suffered persons becomes difficult by the fact that infliction of ecological harm to health is frequently extended in time. Accordingly, the moment of infliction of harm is not clear and cannot be definitely connected with the fact of particular ecological offense on any object or territory.

Basic complexities in establishment of causal relation are connected with difficulties of obtaining necessary information. The problem of openness and accessibility of ecological information remains actual. There is no proper system for providing the population of ecological information by dangerous industrial plants. The reasonable periods of time for providing of ecological information are not established. It is important to note, that sufficient data base about the influence of natural environment factors (including radiation) to the health of population for making of judicial decisions, is not created.

## **Appendix**

### **(Translations of Russian Legislation)**

#### **The Constitution of the Russian Federation on 12.12.1993 (Extracts)**

##### Article 1

The Russian Federation - Russia shall be a democratic federal rule-of-law state with the republican form of government. The names "Russian Federation" and "Russia" shall be equivalent.

Article 2

Man, his rights and freedoms shall be the supreme value. It shall be a duty of the state to recognize, respect and protect the rights and liberties of man and citizen

Article 7

1. The Russian Federation shall be a social state, whose policies shall be aimed at creating conditions which ensure a dignified life and free development of man.

2. The Russian Federation shall protect the work and health of its people, establish a guaranteed minimum wage, provide state support for family, motherhood, fatherhood and childhood, and also for the disabled and for elderly citizens, develop a system of social services and establish government pensions, benefits and other social security guarantees.

Article 15

1. Constitution of the Russian Federation shall have supreme legal force and direct effect, and shall be applicable throughout the entire territory of the Russian Federation. Laws and other legal acts adopted by the Russian Federation may not contravene the Constitution of the Russian Federation.

2. Organs of state power and local self-government, officials, citizens and their associations must comply with the laws and the Constitution of the Russian Federation.

3. The laws shall be officially published. Unpublished laws shall not be applicable. No regulatory legal act affecting the rights, liberties or duties of the human being and citizen may apply unless it has been published officially for general knowledge.

4. The commonly recognized principles and norms of the international law and the international treaties of the Russian Federation shall be a component part of its legal system. If an international treaty of the Russian Federation stipulates other rules than those stipulated by the law, the rules of the international treaty shall apply.

Article 18

The rights and liberties of man and citizen shall have direct effect. They shall determine the meaning, content and application of the laws, and the activities of the legislative and executive branches and local self-government, and shall be secured by the judiciary.

Article 19

1. All people shall be equal before the law and in the court of law.

2. The state shall guarantee the equality of rights and liberties regardless of sex, race, nationality, language, origin, property or employment status, residence, attitude to religion, convictions, membership of public associations or any other circumstance. Any restrictions of the rights of citizens on social, racial, national, linguistic or religious grounds shall be forbidden.

3. Man and woman shall have equal rights and liberties and equal opportunities for their pursuit.

Article 39

1. Everyone shall be guaranteed social security in old age, in case of disease, invalidity, loss of breadwinner, to bring up children and in other cases established by law.

2. State pensions and social benefits shall be established by laws.

3. Voluntary social insurance, development of additional forms of social security and charity shall be encouraged.

Article 42

Everyone shall have the right to a favorable environment, reliable information about its condition and to compensation for the damage caused to his or her health or property by ecological violations.

Article 53

Everyone shall have the right to compensation by the state for the damage caused by unlawful actions (or inaction) of state organs, or their officials.

Article 55

Compensation of Harm to the Health as a Result of Radioactive Contamination According to Russian Legislation  
(Shupichenko)

1. The listing of the basic rights and liberties in the Constitution of the Russian Federation shall not be interpreted as the denial or belittlement of the other commonly recognized human and citizens' rights and liberties.

2. No laws denying or belittling human and civil rights and liberties may be issued in the Russian Federation.

3. Human and civil rights and liberties may be restricted by the federal law only to the extent required for the protection of the fundamentals of the constitutional system, morality, health, rights and lawful interests of other persons, for ensuring the defense of the country and the security of the state.

Article 71

The jurisdiction of the Russian Federation shall include: a) the adoption and amendment of the Constitution of the Russian Federation and federal laws and supervision over compliance with them; b) the federal structure and territory of the Russian Federation; c) regulation and protection of the rights and liberties of the human being and citizen; citizenship of the Russian Federation; regulation and protection of the rights of national minorities; i) federal power-engineering systems, nuclear energy, fissionable materials; federal transport, railways, information and communications; space activities;

**Basis of civil legislation of the Union of Soviet Socialist Republics (USSR) on  
05.31.1991 (Extract)**

Article 131. Compensation of moral harm

The moral harm (physical or moral sufferings), caused to citizen by delicts, compensates by wrong-doer in case of his fault. Moral harm compensates in money or other substantive form and in the amount, determined by law court, the independently from the compensation property harm.

**Decision of the Supreme Soviet of Russian Federation on 03.03.1993 (Extract)**

1. Basis of civil legislation of the USSR put into effect in the territory of Russian Federation since August 3, 1992 to those civil-legal relationships, which arose after the said date.

**The Civil Code of Russian Soviet Federative Socialist Republic (RSFSR) on**

## **06.11. 1964 (Extracts)**

### Article 32. Responsibility of legal person

Legal person is responsible on its obligations belonging to it property, to which, according to the legislation of the USSR and the present Code (article 98, 101 and 104) can be recovered.

### Article 33. Differentiation of responsibility of state and state organizations

State does not responsible on the obligations of state organizations, which are legal persons, and these organizations are not responsible for the obligations of state. Conditions and order of covering the debts of institutions and other state organizations, which use the state budget, if the debts can not be covered due to their funds, are established by the legislation of the USSR and RSFSR.

### Article 444. General reasons of responsibility for infliction of harm

The harm, inflicted to person or to property of citizen, and also the harm, inflicted to organization, is subject to full compensation by the person, who caused the harm. Exceptions of full compensation are the cases, specially provided by legislation of the USSR.

The harm doer is escape from compensation, if he proves an absent of his fault in infliction of harm.

The harm, inflicted by lawful actions, is subject to compensation only in the cases, provided by law.

### Article 454. Responsibility for the harm, inflicted by the source of the increased danger

Organizations and citizens, whose activity is connected with the increased danger for surrounding (transport organizations, industrial enterprises, construction companies, owners of cars, etc) are obligated to compensate the harm, inflicted by the source of the increased danger, unless they prove, that the harm arose as a result of irresistible force or intention of the suffered person.

## **The Russian Civil Code on 11.30.1994 (Extracts)**

### Article 1064. General Grounds for Liability for Damage

1. The injury inflicted on the personality or property of an individual, and also the damage done to the property of a legal entity shall be subject to full compensation by the person who inflicted the damage.

The obligation to redress the injury may be imposed by the law on the person who is not the inflictor of injury.

The law or the contract may institute the obligation of the inflictor of injury to repay to the victims compensation over and above the compensation of damage

2. A person who has caused harm shall be released from the redress of injury, if he proves that injury was caused not through his fault. The law may also provide for the redress of injury in the absence of the fault of the inflictor of injury.

3. Injury inflicted by lawful actions shall be subject to redress in cases, provided for by the law. Redress of injury may be rejected, if injury has been caused at the request or with the consent of the insured person and unless the actions of the inflictor of injury violate the moral principles of the society.

#### Article 1085. The Extent and Character of the Redress of Injury Inflicted on the Person's Health

1. In case of maiming an individual or of any other injury to his health compensation shall be extended to the earnings (income) which has been lost by the injured person and which he had or could definitely have, and also to the expenses incurred by injury to his health, including the expenses on medical treatment, additional nutrition, the acquisition of medicines, prosthesis, care by other people, the sanatoria and spa treatment, the acquisition of special transport vehicles, retraining, if it is found out that the injured person is in need of aid of these kinds and care and has not the right to receive them free of charge.

#### Article 1099. General Provisions

1. The grounds and the amount of compensation for the moral damage done to an individual shall be determined by the rules, provided for by this Chapter and Article 151 of this Code.

2. The moral damage inflicted by actions (inaction) that infringe the property rights of an individual shall be subject to compensation in cases, provided for by the law.

3. The moral damage shall be compensated regardless of the property damage subject to compensation.

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主指導教員 (中村哲也教授)、副指導教員 (神戸秀彦教授・沢田克己教授)