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Classification of Radioactive Waste and Spent Nuclear Fuel in European Union Law. Principle of Subsidiarity

Лебедева Юлия Вячеславовна
Advisor of the Department of History and Records of the Ministry of Foreign Affairs of Russia, Ministry of Foreign Affairs of Russia
Российская Федерация, Москва
Муратов Олег Энверович
Head of the Radiation Technology Department at TWELL LLC., TWELL LLC.
Российская Федерация, Санкт-Петербург

Аннотация

Each EU Member State has the right to determine its energy balance independently; all EU Member States produce nuclear waste in the course of electricity generation as a result of industrial, agricultural, medical and research activities, as well as in the course of decommissioning and restoring nuclear facilities. The methodological framework of the study was formed by methods of scientific cognition based on dialectical and historical materialism, methods of logical and comparative legal analysis. The issue of permanent storage of radioactive waste remains very sensitive for countries. The question of developing a uniform classification of radioactive waste and spent fuel for all EU Member States is constantly raised for radioactive waste management, i.e. for its extraction, transportation, stocking, safe interim or permanent storage. Euratom and the EC have repeatedly tried to develop and adopt a common legal classification of radioactive waste. Euratom currently uses the IAEA 2009 Classification of Radioactive Waste – GSG-1. The general approach to spent nuclear fuel in EU law has been defined by the Directive 2011/70/Euratom, which states that each EU Member State has the right to choose its own nuclear fuel cycle policy. In this context, spent nuclear fuel is treated in EU law as a valuable resource that can be recycled or as spent material destined for further final disposal. A legally binding document on a uniform classification of radioactive waste and spent nuclear fuel in EU law has not yet been developed.

However, there is an understanding on the part of the EC, Euratom, and EU Member States of the need to fill this gap in EU law.

Ключевые слова: nuclear law, legal regime of radioactive waste, spent nuclear fuel, Euratom

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1 The basic act governing nuclear relations in the EU is the Treaty establishing the European Atomic Energy Community of 1957 (Euratom Treaty), which in Article 8 for the first time stipulated that the Joint Nuclear Research Centre would ensure "that a uniform nuclear terminology and a standard system of measurements are established "[1] for the Member States of the European Union (EU). This provision has been further implemented by EU directives and regulations. The development and adoption of uniform legal criteria for the classification of radioactive waste (RW) and spent nuclear fuel (SNF) for the EU was particularly important under the conditions of the "common nuclear feed market as of January 1, 1959" [2] in the handling, transport and permanent storage of RW and SNF. Chapter IX "The Nuclear Common Market" of the Euratom Treaty formalized the basic provisions applicable to goods and products of the nuclear industry according to Annex IV of the Euratom Treaty.

2 Article 37 of the Euratom Treaty contains only a general rule regarding RW, which states that each EU Member State shall provide the European Commission (EC) with "general data relating to any plan for the disposal of RW in whatever form, which makes it possible to determine the degree of risk of radioactive contamination of the water, soil or airspace" [3] of another EU Member State after the implementation of such plan. This means that the EU competence with regard to RW is of a general nature and that EU Member States decide how to dispose of RW at national level. Thus, one of the fundamental principles of the construction and operation of the EU institutional system – "the principle of subsidiarity", which is intended to "provide greater flexibility in solving problems arising in the process of European integration" — began to apply in this area [4].

3 There is no uniform classification of RW and SNF in EU law. Until 1983, Euratom made no attempt to adopt and develop a single standard for the classification of RW and SNF. Therefore, some EU Member States have a number of RW classifications based on the internal needs of national NPPs established for regional or national use, while other EU Member States have RW classifications only for scientific purposes, and in such countries as, for example, Italy and Finland, the main criterion is operational requirements.

4 In this context, the EU Joint Nuclear Research Center first considered the need for RW classification in its **1983 report "Analysis of the Current Situation and Prospects in RW Management"** and proposed to divide RW into four main categories: low-level waste (LLW), intermediate-level waste (ILW), alpha waste, and high-level waste (HLW) [5].

5 In the Report, it was proposed to include in the LLW category (mainly process) waste containing or possibly containing beta-gamma emitters, as well as waste containing essentially natural alpha emitters in low concentrations, i.e. low activity levels. These are wastes resulting from the activities of research centers, from the industrial and medical use of radioelements, and from the operation of various complete nuclear fuel cycle (NFC) facilities.

6 The ILW category included process waste containing primarily beta-gamma emitters in relatively high concentrations. The alpha waste category included process and treated waste from nuclear laboratories and SNF treatment facilities. Only vitrified waste containing ^{235}U fission fragments and transplutonium elements (Am, Cm, etc.), which are alpha, beta, and gamma emitters, were classified as HLW.

7 The next attempt to develop a uniform RW classification in the EU was the **Euratom EC Recommendation of 1999 on a classification system for solid RW** [6]. It was based on the IAEA classification with some modifications to take into account the experience of European national experts. It was proposed to the EU Member States to adopt a uniform system of solid RW classification for national purposes and to facilitate information management in this field. Solid RW was divided into three types based on activity, half-life, and heat generation:

8 1. **Intermediate level waste (ILW)** is a type of RW, primarily of medical origin, that decays during a period of interim storage and can then be handled outside the regulatory system, provided that cleanup levels are met.

9 2. **Low and intermediate level waste (LILW)** in which the concentration of radionuclides is such that heat generation is sufficiently low. The heat generation limit of 2 kW/m3 recommended by the IAEA for LILW has not been retained by European experts. It is recognised that this value is only relevant for on-site safety analysis.

10 LILW is divided into:

11 2.1. **Short-lived waste (LILW-SL)** is RW with a radionuclide half-life of 30 years or less and a limited concentration of alpha-emitting radionuclides with a specific activity of 400 Bq/g.

12 2.2. **Long-lived waste (LILW-LL)** is long-lived radionuclides and alpha emitters whose concentration exceeds the limits for short-lived waste. 3. **High-level waste (HLW)** is waste whose radionuclide concentrations are such that their high heat generation is considered during storage and disposal and heat removal is provided (heat generation is site-specific, and this waste comes mainly from SNF treatment).

13 Euratom proposed to use this RW classification system to provide information on solid RW to the public, national and international organizations. This classification cannot replace technical criteria where necessary for safety. Taking into account that the

1999 Euratom EC Recommendation is non-binding according to Article 288 of the Treaty on the Functioning of the European Union, the EU Member States have been using this classification since January 1, 2002, at their discretion together with existing national RW classification systems. Therefore, the EU Member States have different RW and SNF classification systems.

14 According to **Belgian** law, RW includes “any substance not intended for further use with a radionuclide content exceeding the limits at which its uncontrolled disposal or use may be authorized”. RW has been divided into three categories according to the method of disposal: A - short-lived LLW, B - ILW, and C - HLW and very high-level waste, and the resulting SNF was subject to treatment. In 1993, the government imposed a moratorium on SNF treatment, but for a long time there was no official act classifying SNF as RW. According to the Directive 2011/70/Euratom, in 2015, the Belgian government approved an official program for RW and SNF management, which introduced important changes in the practice of SNF and long-lived LLW, ILV, and HLW management [7]: SNF was officially classified as RW, the RW classification was revised, the RW register data (actual accumulated and projected amount) was updated, and the schedule for the deep geological disposal project was set.

15 According to the 2015 classification, untreated SNF is classified as Category C waste and is subject to final isolation in deep geological formations after preliminary cooling to reduce heat generation. The RW classification system still includes three waste categories, but their definitions have changed (Table 1). Table 1

16 Old and New Classification RW Categories

RW Categories	Old Classification	New Classification
A (short-lived LLW/ILW)	Conditioned waste with activity and half-life sufficiently low to be acceptable for surface disposal. This category includes short-lived LLW and ILW with most radionuclides having half-lives of 30 years or less, and may include traces of long-lived alpha emitters. They should be isolated from the environment for a period of at least 300 years until the activity level has decreased by a factor of at least 1,000.	Conditioned LLW and ILW containing insignificant amounts of long-lived radionuclides for which the period of potential hazard does not exceed several hundred years. Subject to surface or near-surface disposal. The category corresponds to the LLW class in the 2009 IAEA classification. [7, p. 2]
B (long-lived LLW/ILW)	Conditioned LLW and ILW containing long-lived alpha emitters in quantities that preclude their classification as Category A and the low level of heat generation that precludes their classification as Category C	Conditioned LLW and OLW, in which the content of long-lived radionuclides determines the period of their potential hazard to the environment lasting from tens to several hundred thousand years, and the level of their heat generation at the time of conditioning is high enough, but after long-term storage becomes lower than required to be classified as Category C. The category corresponds to the ILW class in the 2009 IAEA classification.
C (short-lived long-lived HLW)	Conditioned HLW containing significant amounts of short-lived beta and gamma emitters and large amounts of long-lived alpha emitters and characterized by high heat generation (greater than 20 W/m).	Conditioned HLW containing significant amounts of long-lived radionuclides, resulting in a potential hazard period of tens to several hundred thousand years. After interim cooling and disposal in a repository, their heat generation will lead to heating of the host rock. The category corresponds to the HLW class in the 2009 IAEA classification. Category C includes vitrified HLW resulting from the treatment of SNF and untreated SNF classified as RW, with the exception of some types of fuel

		resulting from the operation of research reactors, which should be classified as Category B.

17 The concept for the disposal of Category B and C waste is currently being developed in detail. The repository will consist of adits in the clay layer at a depth of 230 to 240 meters. Since 1980, the HADES underground research laboratory has been operating at a depth of 250 m in the clay layer in the municipality of Møl.

18 In **Denmark**, RW disposal is not regulated by law, and therefore only storage is considered in the RW classification system. The system is mainly based on the origin of the waste and to some extent on radioactive dose measurement and sorting. Upon arrival at the storage facility, RW is classified according to external radiation; after treatment, RW is stored in a low- or intermediate-level waste storage facility, depending on the radioactive dose rate and the fissile content of the RW. Treated sealed RW is stored in the storage facilities at Risø National Laboratory.

19 **Finland.** The Nuclear Energy Act of 1987 defines the legal framework for activities related to the use of nuclear energy, including the management of RW and SNF. RW is first divided into two main types of waste: radioisotope waste from medical institutions, research centers and industry, and RW generated at NPPs. This type of RW is subdivided into LLW, ILW, and HLW.

20 According to the 1994 amendment to the Nuclear Energy Act, all SNF and RW generated during the operation of NPPs should be treated and permanently disposed of on the territory of the country. After conditioning, LLW and ILW are buried in storage facilities at Olkiluoto NPP (in operation since 1992) and Loviisa NPP (in operation since 1997).

21 Until 1996, SNF generated at Loviisa NPP was exported to Russia for treatment, but a 1994 amendment to the Nuclear Energy Act classified SNF as HLW, the export of which from Finland is prohibited. To solve the problem of permanent disposal of SNF and HLW, Posiva Oy was established in 1995 with responsibility for treatment and disposal. The Onkalo repository is being constructed at the NPP site, which is located on the Finnish island of Olkiluoto near the southwest coast of Finland, in granite at a depth of 450 meters below the bottom of the Baltic Sea. The SNF is buried in borated cast-iron containers that are placed inside copper foams, and each foam is buried in an individual well drilled in the floor of the disposal tunnel. Once filled, the well is backfilled with bentonite clay. Although Onkalo is designed to be a permanent repository for SNF, it will be possible to retrieve the SNF to the surface.

22 The first phase consists of five tunnels 350 meters long, 3.5 meters wide, and 4.5 meters high. Each tunnel will house 30 containers with a total capacity of 65 tons of SNF.

23 The Onkalo repository became operational on January 1, 2023. It is planned to receive waste from all over the EU. The repository houses a laboratory to study ways to edit the genome and create a cure for Alzheimer’s disease, vaccines against malaria, tuberculosis, and herpes.

24 **France** is the only EU country with industrial technologies for all stages of the nuclear fuel cycle, from uranium mining to SNF treatment, as well as for the extensive

use of nuclear energy in power engineering, industry and medicine. Programs for the use of nuclear energy in science, industry and national security began in 1945, when the government established the Atomic Energy Commission. Several research laboratories and pilot production facilities for processing special nuclear materials were established within 10 years.

25 In view of the developed nuclear industry, RW management is categorized according to the territorial location of nuclear facilities and their geographical and functional origin, the so-called “zoning”. The RW classification system is determined by the radiotoxicity of the waste and the method of its disposal. Two parameters are used to determine the radiotoxicity of waste: the lifetime of the main radionuclides (less or more than 30 years) and the activity level (very low, low, intermediate, and high). The introduction of the Very Low Level Waste (VLLW) category simplifies RW management processes and reduces disposal costs without compromising safety. The regulatory requirements for VLLW (specific activity for most beta- and gamma-emitting radionuclides is 100 Bq/g and the dose rate to the surface of waste packages is less than 5 mSv/h) allow its disposal in simplified storage facilities.

26 All RW management issues, including the operation of RW disposal centers, are handled by the French National Radioactive Waste Management Agency (ANDRA). The management of the different categories of RW is shown in Table 2. Table 2

27 Management of Different Categories of RW

$T_{1/2}$ Activity	Long-lived, $T_{1/2} > 31$ years	Short-lived, $T_{1/2} < 31$ years	Very short-lived, $T_{1/2} <$ 100 days
VLLW, 1–100 Bq/g	Morville disposal facility (active)	On-site storage for radioactive decay of short-lived radionuclides followed by landfill disposal of such waste	
LLW, 100 Bq/g –100 kBq/g	Radium and graphite-containing waste disposal facility project (end of development 2023)	Aube and Manche disposal facilities (active)	
ILW, 100 kBq/g –10 MBq/g			
HLW, 10 MBq/g – 10^9 Bq/g	CIGEO deep disposal facility (in the design phase)		

28 The Reversible Disposal Act of 2016 formalizes the mandatory requirement to ensure that waste already disposed of can be recovered within 100 years. Taking into account new scientific data and technologies, this will allow future generations to independently determine the strategy for the long-term management of HLW and long-lived ILW.

29 SNF is treated as a recyclable valuable resource containing various elements that can be reused. Currently, France, which is the world leader in SNF treatment, operates two treatment facilities — UP2 and UP3 — each with a capacity of 800 tons of SNF at Cape de la Hague, which treat foreign SNF in addition to its own [8]. The unburnt uranium and spent plutonium separated from SNF are used to produce mixed

uranium-plutonium fuel (MOX fuel), which is used in 40 reactors not only at French NPPS, but also at NPPS in the EU (Belgium, Germany, and the Netherlands), Switzerland, and Japan.

30 The peculiarity of SNF treatment is the generation of a large amount of liquid RW of different types: there are 13, 78 and 1,875 m3 of HLW, ILW and LLW, respectively, per 1 ton of SNF. HLW containing fission products and transuranic elements is vitrified in two facilities commissioned in 1989 and 1993. Liquid LLW is discharged into La Manche. The main radionuclides in the discharge are tritium, caesium, strontium, cobalt, and alpha emitters.

31 In **Germany**, the RW classification system is linked to the permanent storage location. The classifications are determined by the operator following a site safety assessment, taking into account legally binding acts, resolutions, and regulations. Quantitative requirements for the repository are then defined, including in particular a system of waste groups, packaging container classes, and specific activity limits for radionuclides.

32 In **Greece**, there is no official RW classification system, as RW is produced by research institutes, medical institutions and industry, which are required to have a national license.

33 **Ireland** has no NPPs or NFC facilities, so RW is classified according to whether it is sealed (RW placed in containment) or unsealed (any unsealed radiation source that produces radioactive contamination for the environment).

34 The basis of the RW classification system in **Italy** is the way in which it is disposed of. RW is divided into Category I RW, which decays to below the clean-up level in a few months. The remaining RW is classified into categories II and III according to its half-life and radioactivity.

35 **The Netherlands**. The RW classification system is based on treatment and conditioning. There are three categories of RW, each with a number of subcategories. Category 1 includes all LLW and ILW below the established radiation dose rate and is subdivided according to origin, radionuclide content and half-life. Waste Categories 2 and 3 are categorized on the basis of heat generation and then subdivided by origin and waste type. Waste containing natural radionuclides, which require a license, is also subject to all regulatory requirements for RW management.

36 Despite the fact that the country has thick layers of rock salt, which is a stable and reliable medium for long-term isolation of RW, the government, after numerous debates and under public pressure, decided to arrange controlled long-term (at least 100 years) storage of RW in above-ground storage facilities. This will ensure the highest level of control.

37 COVRA was established in the 1990s for RW treatment and long-term storage. The RW storage facility, consisting of modules with free corridors, is located in a reinforced concrete building with low humidity level. Lower dose rate RW packages are placed along the walls of the modules and on the upper levels, providing a shield against radiation from higher dose rate packages.

38 In **Portugal**, the RW classification is defined according to the method of disposal. There are three categories: short-lived LLW (RW from nuclear research, medicine and industry, as well as beta/gamma, spent sealed sources with a half-life of less than 30 years), alpha waste (mainly radium and americium), uranium mining and milling waste.

39 In the **Spanish** RW classification system, there are two categories of waste based on the planned or applied permanent storage option. These are LLW and ILW suitable for permanent surface storage and all other wastes. In addition, the criteria for each repository include requirements for waste packaging characteristics, conditioning, radionuclides, and the repository as a whole.

40 **Sweden.** RW is divided into nuclear and non-nuclear waste. Nuclear waste is RW that is not remediated or disposed of in permanent surface storage. Such RW has been divided into three types of permanent storage: first — for operational waste in rock repositories, second — for decommissioning, and third — for long-lived waste or SNF. Non-nuclear waste is RW that cannot be remediated, which is conditioned and then disposed of with RW or stored until the construction of planned facilities for permanent storage.

41 In **Bulgaria**, there are three categories of RW classified according to the equivalent gamma dose rate at 0.1 m from the surface or the value of alpha or beta activity.

42 In the **Czech Republic**, there is no RW classification system. However, national legislation requires RW producers to submit their own RW classification system according to the treatment, conditioning system and technology used. The criteria for RW classification are established by the Czech State Office for Nuclear Safety. For the purpose of national communication, the following RW categories are used: LLW, ILW, HLW and SNF, although they are not legally defined.

43 **Estonia** uses the old USSR classification system — SPORO-85 Sanitary Rules for RW Management (canceled in Russia in 2013), which established RW remediation limits based on specific activity and surface contamination.

44 The RW classification system in **Hungary** is based on the source of waste concentration and its radiation activity. RW in Hungary is divided into three categories: LLW, intermediate level waste, and HLW.

45 In **Latvia**, RW is divided into three categories: waste stored in old repositories, waste stored in new repositories, and spent sealed sources in interim storage.

46 In **Poland**, RW is classified according to the content of radionuclides (beta/gamma or alpha) and sealed radiation sources. Beta/gamma waste is then divided into LLW, ILW, and HLW.

47 In **Romania**, RW is divided into three categories: HLW, ILW and LLW depending on specific activity or radiation dose rate. Low-grade solid waste is then divided into combustible and non-combustible (special) waste. Combustible waste is divided into biodegradable and non-biodegradable waste. Non-combustible waste is divided according to whether or not it can be compacted. Uranium mining and milling

waste is classified separately according to its physical characteristics and radioactivity concentration.

48 There is no legal classification system in the **Slovak Republic**. However, a system based on the origin of RW is widely used.

49 **Slovenia** has three categories of RW: LLW, intermediate level waste, ILW and HLW. They are based on the source of waste with activity-specific limits. LLW and ILW are subdivided into waste with alpha emitters and waste with beta-gamma emitters.

50 In 2017, the **Commission's Report to the Council and the European Parliament on Progress of Implementation of Council Directive 2011/70/Euratom and an Inventory of RW and SNF** [9] proposed a classification of RW and SNF on the territory of the EU Member States. However, there is no directive or regulation in EU law, i.e. a legally binding document, that would clearly prescribe and regulate a uniform classification of RW and SNF on the territory of the EU Member States.

51 According to clause 1 of Article 12 of Directive 2011/70/Euratom, the EU Member States report to the Commission of their national nuclear programs and their SNF and RW inventories [10] based on their national classifications, which may differ from each other. In order to compare SNF and RW inventories of different EU Member States and to summarize their total inventories in the EU, Euratom translates them into a common scheme. In order to facilitate data aggregation for the IAEA, Euratom has chosen the IAEA 2009 GSG1 classification.

52 The Commission's Report to the Council and the European Parliament on Progress of Implementation of Council Directive 2011/70/Euratom and an Inventory of RW and SNF prescribes the following RW categories to be used for data aggregation on the territory of the EU Member States:

53 1. **VLLW** is waste that does not require a high level of permanent storage and is therefore suitable for disposal in landfill-type facilities with limited controls.

54 2. **LLW** is waste that exceeds remediation levels but contains limited amounts of long-lived radionuclides. Such waste requires reliable isolation and storage for up to several hundred years. LLW is suitable for disposal in engineered near-surface facilities. This class covers a very broad range of waste. LLW may contain both short-lived radionuclides at higher activity concentrations and long-lived radionuclides at relatively low activity concentrations.

55 3. **Intermediate level waste (ILW)** is waste which, due to the presence of particularly long-lived radionuclides, requires a greater degree of isolation than that provided by surface storage. ILW requires a limited area for heat removal during storage and disposal. ILW may contain long-lived radionuclides, particularly alpha-emitting radionuclides, which will not degrade over time to activity concentrations acceptable for near-surface soil removal. ILW is subject to control by Euratom and the EC. Therefore, this class of waste requires storage at great depths of up to several hundred meters.

56 **4. HLW** is waste with a sufficiently high activity concentration, with significant heat generation from radioactive decay, or waste with large amounts of long-lived radionuclides that should be considered in the design of an engineered facility for the

permanent disposal of such waste. Disposal in deep, stable geological formations, typically several hundred meters or deeper, is a generally accepted option for the disposal of HLW. In EU law, according to Article 3 of Directive 2011/70/Euratom, disposal means the placement of RW and SNF in a repository without the intention to remove them [11].

57 However, the EU Member States do not adhere to the above-mentioned RW classification, and countries such as Slovenia, Romania, and Sweden use a combined class of waste — low and intermediate level waste (LILW) — when formalizing RW disposal methods. This approach makes it difficult for Euratom and the EC to prepare RW reports for the IAEA.

58 In December 2019, the **Commission's Report to the Council and the European Parliament on Progress of Implementation of Council Directive 2011/70/Euratom and an Inventory of RW and SNF** [12] described the current situation and changes over three years (2017–2019) in SNF and RW management by the EU Member States. The EC reiterated the lack of a uniform classification of RW and SNF in EU law and proposed to use the IAEA 2009 classification (GSG-1) to assess the inventory of RW and SNF. However, the EU Member States still continue to submit information on RW and SNF to Euratom and the EC according to their national classification systems.

59 Each EU Member State has the right to determine its own nuclear fuel cycle policy. Under EU law, SNF can be considered as a valuable resource that can be reprocessed or as spent material intended for further permanent disposal.

60 The EU Member States independently determine the procedure for further SNF management in accordance with their technological capabilities, specifics of national legislation, and economic feasibility.

61 Due to the fact that nuclear energy is a shared competence of the EU and its Member States, i.e. "with regard to issues that can be dealt with both at national and supranational level" [13], the principle of subsidiarity applies in this area. In particular, the legal concepts of RW, SNF, and RW and SNF management are adopted at the EU level, i.e., at the supranational level, while the issue of RW classification and SNF management strategy is resolved independently by the Member States, i.e., at the national level. At the same time, there are "diverging, often conflicting interests of the EU and its Member States" [14] in the issue of developing a RW and SNF classification, which is due to the different scientific, technical, economic, and administrative approaches of the EU Member States. Meanwhile, the role of the EU in a comprehensive solution tends to be strengthened, and on the other hand, there is a "need to maintain a balance of power between the EU and the Member States" [15]. However, this "not only does not contradict the trend of forming and developing EU nuclear law, as well as a number of other trends in the development of the EU legal system" [16], but on the contrary, "in most cases it organically combines with and complements them" [17]. Therefore, the issue of RW and SNF classification at the supranational level in the EU, which is "highly specialized" [18], will be resolved in the coming years with a new EU directive to facilitate interaction between the EU Member States, Euratom, the EC, and the IAEA.

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Yulia Lebedeva
Advisor of the Department of History and Records of the Ministry of Foreign Affairs of Russia, Ministry of Foreign Affairs of Russia
Russian Federation, Moscow
Oleg E. Muratov
Head of the Radiation Technology Department at TWELL LLC., TWELL LLC.
Russian Federation, Saint Petersburg

Abstract

Each EU Member State has the right to determine its energy balance independently; all EU Member States produce nuclear waste in the course of electricity generation as a result of industrial, agricultural, medical and research activities, as well as in the course of decommissioning and restoring nuclear facilities. The methodological framework of the study was formed by methods of scientific cognition based on dialectical and historical materialism, methods of logical and comparative legal analysis. The issue of permanent storage of radioactive waste remains very sensitive for countries. The question of developing a uniform classification of radioactive waste and spent fuel for all EU Member States is constantly raised for radioactive waste management, i.e. for its extraction, transportation, stocking, safe interim or permanent storage. Euratom and the EC have repeatedly tried to develop and adopt a common legal classification of radioactive waste. Euratom currently uses the IAEA 2009 Classification of Radioactive Waste – GSG-1. The general approach to spent nuclear fuel in EU law has been defined by the Directive 2011/70/Euratom, which states that each EU Member State has the right to choose its own nuclear fuel cycle policy. In this context, spent nuclear fuel is treated in EU law as a valuable resource that can be recycled or as spent material destined for further final disposal. A legally binding document on a uniform classification of radioactive waste and spent nuclear fuel in EU law has not yet been developed. However, there is an understanding on the part of the EC, Euratom, and EU Member States of the need to fill this gap in EU law.

Keywords: nuclear law, legal regime of radioactive waste, spent nuclear fuel, Euratom

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