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IMPACT OF EUROINTEGRATION ON THE TRANSFORMATION OF THE POLITICAL- LEGAL SYSTEM OF UKRAINE IN THE FIELD OF NUCLEAR SAFETY

Keywords: nuclear power plant, nuclear safety, eurointegration, Euratom, WENRA, IAEA

ABSTRACT: This article deals with the most pressing issues in the modern political-legal and security information agenda. The active hostilities on the territory of Ukraine have placed the world, and in particular the European Union, under the threat of a new artificial nuclear catastrophe, which could be provoked by the provocative actions of the Russian army at the Zaporizhzhia nuclear power plant. Considering the relevance of the issue, the object of study is the political and legal system of Ukraine in the context of nuclear safety, which has undergone significant changes under the influence of European integration. For comprehensive coverage of the issue, the study examines the evolution of nuclear safety both in Ukraine and the European Union. Particular attention is paid to both the development of legislation and the formation of regulatory authorities. An important component of this study is a detailed analysis of the legal framework of both Ukraine and the European Union. Due to this, it was possible to clearly determine the scale of influence of the specific legislative acts. The study confirmed the impact of European integration on the main laws of Ukraine related to nuclear safety and the need to bring Ukrainian nuclear safety regulatory documents into line with the legislation of the European Union. This article deals with the EU supranational regulators such as WENRA and ENSREG have a significant impact on the regulatory and legal framework for nuclear safety. Ukraine made many commitments to improve control and develop its own regulatory body – the State Regulatory Inspectorate, which received significant autonomy under the influence of European ini-

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tiatives. It should be stated that the influence of European integration as a political process is so profound that it leads to conceptual changes in the legislative and even institutional framework. The conclusions provide a few suggestions for improving the response system to factors such as hostilities, including at the legal level.

INTRODUCTION

Nuclear power is a very common energy reproduction technology. However, this type of energy has unique properties compared to other technologies in the energy sector. These characteristics include high energy density; the release of a large amount of residual heat after the fission chain reaction has stopped and the possibility of the release of radionuclides. These factors contributed to the development and adoption of measures to ensure the safety of the population from the possible consequences of a violation of the operation of nuclear energy technologies.

Considering the level of danger, this issue is of global importance. The final control is carried out by government organizations the IAEA. In this context, the European Union (hereinafter the EU), as one of the most successful globalization projects, is also actively involved in the development of mechanisms to counteract the risk of using nuclear energy. This process has gone through many transformations and conceptual changes, especially at the legal level. It should be noted that the legal aspect is one of the most important components of the formation and functioning of the EU (Lange, 2008, p. 2). According to John McCormick, an expert on EU history, the development of the legislative framework and nuclear safety measures in the European Union occurred under the influence of various artificial disasters. However, the events of 1986 on the territory of Ukraine had the greatest impact on the development of nuclear safety in the EU. The scale of the Chernobyl disaster made it necessary to reconsider approaches to nuclear safety both in the world and the EU, especially in the information space (McCormick, 2001, p. 93).

Unfortunately, now Ukraine can again become the scene of one of the largest artificial disasters associated with nuclear energy. On February 24, the Russian Federation (hereinafter the RF) launched a full-scale military

aggression against Ukraine. As a result, Ukraine temporarily lost control over the Zaporizhzhia nuclear power plant (hereinafter ZNPP). It is the largest nuclear power plant both in Ukraine and Europe (Istoriia Zaporizkoi AES). The Russian troops constantly carry out provocations and shelled the infrastructure of the nuclear plant. The situation became so tense that the IAEA was forced to send a commission headed by the director of the organization, Rafael Mariano Gross, to monitor the situation of the ZNPP and the possibility of its further operation. According to the second report of the IAEA commission, which was published on September 5, 2022, due to the provocative activities of the Russian troops, all 7 safety criteria for a nuclear power facility were violated (Nuclear Safety, Security and Safeguards in Ukraine, 2022, p. 7–8).

The facts presented above demonstrate an extremely high level of threat, a nuclear catastrophe, which in scale can exceed the explosion at the Chernobyl nuclear power plant. However, since 1994 Ukraine is bidding for membership of the European Union. Therefore, in the context of the political process of European integration, Ukraine maximally transformed its legislation to the EU standards. Considering the current situation at ZNPP, the issue of studying the evolution of the legal aspect of Ukraine's nuclear safety, in the context of the impact of the European integration process, becomes relevant. Having considered this problem from the standpoint of the political influence of the EU on changing the legal system of Ukraine, it becomes possible to analyze the effectiveness of those legal mechanisms that can be applied in the current situation. The current article considers the impact of the European integration process on the transformation of the legal system of Ukraine in the field of nuclear safety.

THE DEVELOPMENT OF NUCLEAR SAFETY IN THE EU BOTH AT THE INSTITUTIONAL AND LEGAL LEVEL

The idea of «Europe» as a unified political system is not something supernova or unique. The destructive conflicts and imbalance of power in the first half of the 20th century pushed many countries to seek compromise and integration. After the two World Wars, it became obvious that the

established state systems cannot adequately interact and generate total conflicts. Assessing the scale of the tragedy that emerged after the World Wars, a new generation of intellectuals and philosophers turned to an alternative idea, namely, the cooperation of countries. The world paid an extremely heavy price for peace. Do of this, more and more countries turned to the ideas of regional unity (McCormick, 2001, p. 43–44).

Many researchers point out that the formation of the EU occurred under the influence of the military threat of the Cold War. Especially, as mentioned above, the world wars had a strong influence on the political orientation of many countries. According to Suha Atatüre, the beginning of the formation of the EU coincided with the most violent stages of the Cold War (Atatüre, 2008, p. 22–23). The history of the EU began at the institutional level in 1950, when French Foreign Minister Robert Schuman proposed a plan to create a supranational organization «The European Coal and Steel Community», which was founded in 1952. This organization included six countries: France, West Germany, Italy and the Benelux countries (McCormick, 2001, p. 45). In turn, Federiga Bindi notes that the so-called «Schumann plan» (1950) raised serious concerns about the rearmament of Germany. It should be noted that after World War II, a vacuum of power balance was created in the center of Europe. To restore balance, the United States proposed the creation of an integrated structure based on the Atlantic Alliance, which would also include Germany, but under the control of the American armed forces. Active discussions began regarding the further development of the military bloc. The result of the negotiations was the signing of an agreement on the formation of the «European Defense Community» (1952) and the final formation of the North Atlantic Alliance (with the inclusion of West Germany and Italy) in 1954 (Bindi, 2012, p. 13–14).

The next important document and a stage in the formation of the EU was the so-called «Treaty of Rome». This document was signed in February 1957 and fixed the creation of the European Economic Community (hereinafter the EEC). The signatories of the Treaty were: France, West Germany, Italy, Belgium, the Netherlands and Luxembourg. The presented Treaty consists of six parts and 248 articles. This document maximally expanded the sphere of interaction between the participating countries.

In the preamble to the document, the desire for closer cooperation between countries and the elimination of borders between peoples was announced to achieve more effective social development. One of the key goals of this document was to improve the standard of living of citizens and increase economic growth. Achieving these goals was expected through the creation of a single market to facilitate the exchange of goods and resources. The creation of such a trading system as the single market was an extremely important step toward the formation of the EU. The interaction occurred in various areas: transport, social, tax, etc. Also, the most important component of the implementation of the Treaty of Rome was the harmonization of the legislative framework. To control the execution of the adopted document, many supranational institutions were created: the Assembly, the Council of Ministers, the Commission and the Court. All these institutions strived for the most effective level of regulation of interactions between the participating countries, especially at the legal level. In parallel with the Treaty of Rome, an extremely important document was concluded (Shynkarenko, 2011, p. 638–639). It was an agreement on the formation the European Atomic Energy Community (hereinafter Euratom) ratified in 1958.

To understand the scale of the impact of the European integration processes on the legal component of Ukraine's nuclear security, it is important to consider the evolution of this issue within the EU. The issue of the development of nuclear safety in the EU, in our opinion, is closely related to two components: the history of the development of specialized institutions and the evolution of legal standards. The first and perhaps the most important supranational organization within the EU was the creation of Euratom (Treaty establishing the European Atomic Energy Community (Euratom), 1957) Since Euratom was created under the Treaty of Rome, its founders were the abovementioned 6 countries. The main purpose of the creation of this organization is to promote the formation, study and development of nuclear energy, especially for the industrial complex. In post-war Europe, there was an acute shortage of energy resources, which could be filled by the development of technologies in the nuclear sector. The institutional model of the «Euratom Treaty» has a common concept with the EEC Treaty and includes: the Council, the Commission and the

European Parliament (The Court of Justice of the European Union and The Accounting Chamber subsequently joined the Treaty). Each institution shall function within the framework of the powers entrusted to it under this Treaty. The Treaty also introduced high safety standards, which were aimed primarily at training personnel and protecting the civilian population from possible negative consequences of using nuclear energy. The structure of the Treaty consisted of six sections, which covered the main goals and methods for realizing the potential of nuclear energy. The first section is devoted to seven tasks that were set for the community. The second section is related to the promotion of the progress and development of nuclear energy. The third section covers the issues of Euratom institutions and general funding. The fourth section reveals specific financial aspects. The fifth and sixth sections are related to the formation of the organization at the initial stages (Summaries of EU Legislation. Treaty establishing the European Atomic Energy Community (Euratom)). It should be noted that the «Euratom Treaty» was quite static in terms of legal transformation compared to other the EU legal standards. However, in the Protocol (No 2) to the Lisbon Treaty, changes were made that adapted many articles and sections of the «Euratom Treaty» in accordance with the new regulatory requirements (Treaty of Lisbon – Protocol No 2, 2007).

Currently, Euratom is implementing many important functional initiatives in the field of nuclear energy in the EU and other countries that cooperate within the framework of the association. In a general sense, Euratom implements a set of measures to control the use of nuclear materials in EU countries and finances leading international research in the fields of nuclear fission (Hinson, 2019, p. 4). To implement these initiatives, Euratom cooperates with many European and international organizations. In the political and legal context, Euratom exercised its power through the «Nuclear Safety Directives». Currently relevant is the Directive (2014/87/Euratom), as amended in 2014. It significantly strengthens the position of the EU in the context of international nuclear security (Council Directive 2014/87).

A feature of the Directive is the consideration of data on «stress tests» that were conducted in 2011–2012 at nuclear plants, and also the experi-

ence of the nuclear power plant accident at Fukushima in 2011. Additionally, the Directive expands the powers of national regulatory authorities, ensures their independence requires from EU countries to expand their powers and increase financial support. Also an important control tool for Euratom is the requirement for national governments to submit reports on the implementation of the requirements of the Directive to the Council of Europe and the European Parliament. The Directive put the presented paragraph into effect in 2009 (Council Directive 2009/71). According to the requirements of the Directive of 2014, the report was to be submitted in 2020. The publication of the final version of the report occurred in April 2022. Considerable attention was paid to information on «stress tests», provided by national regulatory authorities. It should be noted that the inspection was carried out in many partner countries that are not part of the EU, including Ukraine (Report from the Commission to the Council...).

Such significant attention to the activities of Euratom in our study is due to the fact this is actually the first European supranational organization that was clearly focused on the development of nuclear energy and security in this area. But, Euratom is not the only structure in the EU that is engaged in the development of nuclear energy. Parallel to Euratom and in cooperation with it, there are many organizations in structures aimed at the development of nuclear energy and security in the EU. One of the first structures that supported the activities of Euratom was the Joint Research Center (JRC). Its formation is prescribed in Article 8 of the «Euratom Treaty» (Treaty Establishing The European Atomic Energy Community).

This organization is now engaged in scientific activities and the development of information in 10 scientific areas (European Commission. EU Science Hub). However, initially, the JRC was mainly focused on exploring the potential of nuclear energy. Its tasks included conducting research in the field of nuclear energy, training of personnel and support in the field of nuclear safety (Science for Nuclear safety..., 2014, p. 4). According to the decision of the Council of Europe in 1989 and the «conclusions» made in 1994, this organization expanded its research into the non-nuclear industry, to provide EU institutions with the necessary scientific and

technical information. Despite this, the JRC is one of the key structures in the field of nuclear safety not only in the EU, but also in other partner countries. JRC's current activities cover various nuclear safety arrangements. For example, a wide range of issues from construction, to operation, upgrades and decommissioning of nuclear facilities. JRC also provides assistance in the field of nuclear fuel safety, its decommissioning and testing preparedness for response to a nuclear emergency (Science for Nuclear safety..., 2014, p. 4–6).

Another influential organization in the field of EU nuclear safety is WENRA (Western European Nuclear Regulators Association). This structure was created in 1999 and, in essence, is the main regulator of nuclear safety in the EU and partner countries. The need to create such an organization was due to two important factors: the strengthening of nuclear safety due to EU enlargement and the need to create a unified approach for national regulatory authorities. In fact, WENRA is a community of regulators who use their accumulated knowledge and experience to develop more effective security practices. The activities of WENRA in 1999–2000 allowed the development of standards for licensing nuclear facilities, as well as the preparation of a regulatory framework for national regulators. Today, the organization has 18 members (EU), 2 associate members and 12 observers. Collaboration between members of organizations allows expanding the knowledge base in the field of nuclear safety and helps in solving problems of regulators at the national level (WENRA).

Another authoritative organization in the field of nuclear safety is the European Nuclear Safety Regulators Group (hereafter ENSREG), which was founded in 2007. This organization is an independent expert body that provides advisory support to the EU countries and partner states in the field of nuclear safety (European Nuclear Safety Regulators Group). According to the document that establishes the rules of ENSREG activities, one of the main goals of the organization is to create a common approach for many areas of nuclear safety. For this purpose, ENSREG coordinated its activities with EU institutions (considering the Euratom Treaty) and national regulators. Representatives of both supranational organizations and national regulators are part of the working groups of the organization. This approach contributes to the creation of a balance

of interests between different levels of power and allows for more effective interaction within the framework of nuclear safety (Revised Rules of Procedure for ENSREG, 2011).

In our opinion, these three organizations perform key functions in ensuring nuclear safety in the EU and partner countries. From the above facts, it is appropriate to conclude that, compared with other areas of EU environmental law, the process of developing nuclear safety is more static and developed under the significant influence of large-scale artificial disasters. However, both Euratom and its accompanying organizations have evolved and continue to evolve. In our opinion, one of the key trends of WENRA and ENSREG is not just a search for a balance between the interests of national regulators and the supranational needs of the EU, but the desire for a globalization formation of a unified institutional and legal system for nuclear safety. This trend is directly related to the main political aspects of the EU, which is striving to improve its globalization model.

FORMATION OF NUCLEAR SAFETY IN UKRAINE AT THE LEGAL LEVEL

After 1991 year, many countries in the Balkan region and Eastern Europe wanted to become a part of the EU. Every year, the European Community grew up and the globalization process of European integration only intensified. Ukraine has not become an exception, and since 1994, it has been pursuing a consistent policy of joining the EU. It was this year that Ukraine signed the «Partnership and co-operation agreement between the European communities and their member states, and Ukraine», which can be considered the starting point of the European integration process for Ukraine (Partnership and co-operation..., 1994). However, before proceeding to the analysis of the impact of European integration on the legal system of Ukraine, it is necessary to consider the initial legislative and regulatory framework.

In our opinion, apart from the mentioned Cooperation Agreement, two other documents should be highlighted as a background in the development of relations between the EU and Ukraine. After 10 years (in 2005)

a new document called «Ukraine-European Union Action Plan» was adopted, this expanded almost all spheres of cooperation (Ukraine-European Union Action Plan, 2005). Conceptual changes in the process of European integration occurred after the signing of the «Association Agreement...», which qualitatively transformed the sphere of interaction between Ukraine and the EU (Association Agreement between the European Union..., 2014). It should be noted that in addition to nuclear security, Ukraine actively integrated into a very wide range of areas. Important changes took place in politics, law, economy, culture, science, etc. Initially, Ukraine did not have common borders with the EU, but the rapid growth of the EU has made it possible to get closer even geographically. Ukraine seeks to maximize integration by carrying out reforms for the necessary level of development of the political and legal system. The main goal is to eliminate the framework in political, economic, cultural and legal contexts (Romanko, 2017, p. 272). At the moment, Ukraine is trying to strengthen these processes in all aspects of cooperation. This approach is in line with the globalist tendencies of the modern world. One of the most important aspects is environmental law and nuclear safety as the most crucial problems faced by most countries. We are convinced that only by cooperating and exchanging experience one can effectively confront new challenges.

The history of Ukraine as an independent state originated in 1991, therefore, the legal aspects will be considered from this period. One of the first nuclear safety documents in independent Ukraine should be considered the «Nuclear Safety Convention», which Ukraine signed in 1994 and ratified in 1997 (Nuclear Safety Convention, 1994). According to this document, Ukraine assumed the obligation to promote the safety of nuclear facilities at the international level. Also, a number of fundamental issues were established in this document. For example, in Article 2, Chapter 1, the following definitions were given: «nuclear facility»; «regulatory body»; «license» (Nuclear Safety Convention, 1994, Ch. 1. Art. 2). Generally, this document can be considered fundamental in many respects because it spelled out the key provisions of the safety of nuclear facilities in detail.

One of the first legislative acts that deals with nuclear safety is the Law of Ukraine «On the Protection of the Natural Environment», which was

adopted in 1991 (On the Protection of the Natural Environment, 1991). The law itself does not strictly focus on the implementation of safety mechanisms in the field of nuclear energy. However, an artificial disaster at a nuclear facility can cause enormous damage to the environment. Therefore, in Article 54, the requirements for ensuring security measures are prescribed for enterprises that use radioactive materials (On the Protection of the Natural Environment, 1991, Art. 54). Also, in Article 66, which is devoted to combating accidents and their harmful effects on the ecosystem, considers the use of nuclear energy as an area of risk (On the Protection of the Natural Environment, 1991, Art. 66).

The main law in the nuclear sphere of Ukraine is «On nuclear energy and radiation safety» adopted in 1995 (On nuclear energy and radiation safety, 1995). The presented legislative act is still in force and is constantly updated, with amendments made by the Verkhovna Rada of Ukraine. According to Article 7, this law regulates all areas of activity related to the use of nuclear energy (On nuclear energy and radiation safety, 1995, Section I Art. 7). And in Article 8, it is stated that the norms and rules that operate within the framework of Ukrainian legislation are mandatory for execution (On nuclear energy and radiation safety, 1995, Section I Art.8). It spells out the most diverse aspects of nuclear safety in detail. For example, Section III regulates the activities of state bodies at different levels of the vertical of power in detail (On nuclear energy and radiation safety, 1995, Section III). The abovementioned facts very clearly demonstrate the fundamental nature of the Law of Ukraine «On the establishment of nuclear energy and radiation safety», for regulating nuclear safety.

The Law «On the protection of people from the influx of ionizing vitality» was adopted in February 1998. It is aimed at protecting property and the population from ionizing radiation caused by artificial disasters or violation of the rules of operation (The Law of Ukraine «On the protection..., 1998). In Section I, the main terminological definitions and provisions on the issues of ionized radiation are described. For example, Article 2 describes the scope of the Law, emphasizing the role of public authorities in the control and regulation of this issue (The Law of Ukraine «On the protection..., 1998, Section I Art. 2). The other Sections of the Law describe in detail such aspects as permissible doses of

ionizing radiation and mechanisms to counteract the spread of ionizing influence on the population. Another important legislative act in the field of nuclear energy is the Law «On permissible activity in the field of nuclear energy» adopted in 2000 (On permissible activity..., 2000). According to Article 2 of this Law, its main task is the legal regulation of licensing activities in the field of nuclear energy. The Article 4 of the licensing activity says that only those types of nuclear facilities that have passed the necessary checks meet international safety standards are allowed to be used. However, extremely important aspects are presented in Article 5 of the Law. It establishes the absolute priority of safety in the operation of nuclear facilities describes a differentiated approach to activities related to radioactive substances, introduces a ban on the intervention of any organization or individual except for a special regulatory body. In our opinion, this Law is very important in the context of the implementation of nuclear safety standards because it considers regulatory mechanisms.

In our opinion, the above mentioned Laws of Ukraine are the main in the field of nuclear safety. These laws are basic for the implementation of regulatory and safety measures in the field of nuclear energy operation. But besides these laws, there are many important regulatory documents that clarify many aspects of nuclear safety. For example, such an important document is the «Code of Civil Defense of Ukraine», which was adopted in 2012 (Kodeks tsyvilnoho zakhystu Ukrainy, 2012). The presented normative act is not focus exclusively on nuclear safety. However, in Clause 4, Article 50 of the Code, an object that carries an artificial hazard is a nuclear facility (with violation of the operating conditions) (Kodeks tsyvilnoho zakhystu Ukrainy, 2012). Additionally, Article 9 of this document describes the functioning of the unified system of civil protection. Following the requirements of this Article, in 2020 the Ministry of Justice of Ukraine issued an order on the «Regulations on the functional subsystem of nuclear and radiation security of the unified state system of civil defense» (Pro zatverdzhennia Polozhennia pro funktsionalnu pidsystemu yadernoi..., 2020). This document introduces nuclear safety into a unified system of civil protection, which indicates the importance of this area for Ukraine, at the regional level too.

As in the case of the EU, the legal framework was reinforced by institutions that could implement the prescriptions and requirements of regulatory documents. In 1992 the Cabinet of Ministers of Ukraine issued a resolution on the creation of the «State Committee of Ukraine on Nuclear and Radiation Safety» (Resolution on the creation of the «State Committee of Ukraine...», 1992). The goals and objectives of this organization do not differ from those associated with the activities of Euratom and similar organizations. The main emphasis was placed on the development of rules and regulations for the safe use of nuclear energy and radiation materials. Since Ukraine was just beginning to form its legal and institutional framework, this organization has undergone many changes. For example, in 1994, the organization lost its autonomy and by the Decree of the President of Ukraine «About the establishment of the Ministry for the Protection of the Natural Environment and Nuclear Security of Ukraine» (Ukaz Prezydenta Ukrainy «Pro utvorennia Ministerstva...», 1994). In the future, there was a certain transformation of this organization, a change in the title and legal subjectivity. However, this process did not change the conceptual essence of the presented organization, especially in the context of its activities. It should be noted that in 2010 by the Decree of the President of Ukraine «On the optimization of the system of central authorities of executive power», the organization was retitled the «State Inspectorate for Nuclear Regulation of Ukraine» (hereinafter the State Regulatory Inspectorate) (Ukaz Prezydenta Ukrainy «Pro optymizatsiiu systemy...», 2010). In 2019 by the Decree of the Cabinet of Ministers, the autonomous legal status of the organization was confirmed (Postanova Kabinetu Ministriv Ukrainy. Pro vnesennia zmin...», 2019). Like other regulatory bodies in the field of nuclear safety, since 1996, the State Regulatory Inspectorate has published every year a report on the state of nuclear facilities and the degree of implementation of projects in which this organization is involved. This issue will be considered in more detail below, in the context of the European integration process.

Another important enterprise in the field of nuclear energy in Ukraine is the «State Enterprise «National Atomic Energy Generating Company «Energoatom»» (hereinafter Energoatom), which was established by the Decree of the Cabinet of Ministers in 1996 (Postanova Kabinetu Minis-

triv Ukrainy Pro stvorennia Natsionalnoi atomnoi enerhoheneruii-choi..., 1996). In fact, this enterprise is a local analog of Euratom. Energoatom does not clearly focus on nuclear safety. In order to regulate the activities of Energoatom, the Cabinet of Ministers of Ukraine approved the Charter of the organization (Postanova Kabinetu Ministriv Ukrainy Pro zatverdzhennia Statutu derzhavnoho pidprijemstva «Natsionalna atomna..., 2021). According to the Charter, its functions include various issues related to economic. In Article 7 of the Charter, there are 89 items related to ensuring the organizational and economic activities at nuclear power facilities. However, in Article 6 of the Charter, which discusses the goals of Energoatom, special attention is paid to safety at different stages of the functioning of a nuclear facility. This enterprise meets control over the construction, commissioning and decommissioning of nuclear facilities (Postanova Kabinetu Ministriv Ukrainy Pro zatverdzhennia Statutu derzhavnoho pidprijemstva «Natsionalna atomna..., 2021).

THE TRANSFORMATION OF THE LEGAL ASPECT OF UKRAINE'S NUCLEAR SAFETY UNDER THE INFLUENCE OF THE EUROPEAN INTEGRATION PROCESS

The abovementioned processes of formation the legal system and institutions in the EU and Ukraine, made it possible to determine clear trends and features of these processes. Most of the requirements that are indicated at the legislative level are very clearly synchronized with the duties of Euratom and other international organizations described above with the Ukrainian nuclear safety system. The legal framework of Ukraine, like the EU, is inextricably linked with the institutions that exercise control and execution of regulations, but it is an important comprehensive protection mechanism. The presented data indicate that during the 30 years of Ukrainian Independence, there has been a serious evolution of the legal aspects of nuclear safety. However, Ukraine, as a country that has taken a clear and consistent course toward European integration, could not develop its nuclear safety apart from EU standards.

It should be noted that both the EU and Ukraine do not act absolutely autonomously. However, consideration of the influence of this organization is excluded from the context of our study, therefore, the transformation of the Ukrainian legal system will be considered exclusively within the framework of European integration processes.

From the very beginning of the process of European integration of Ukraine in 1994, the issue of nuclear safety was already topical. Already in the first «Cooperation Agreement» issues of nuclear safety were considered. For example, in Article 62, various aspects of cooperation in the field of nuclear safety of the civil sector are quite meaningfully spelled out. It covers both the control and regulation of the use of radioactive materials and the operation of nuclear facilities (Partnership and co-operation agreement between the European communities..., 1994). From this, it follows that at the earliest stages of European integration of Ukraine, the influence of the standards of European normative acts on the further development of Ukrainian law was obvious. To achieve the goals of European integration, the «Strategy for integrating Ukraine to the European Union» was adopted in 1998. The eighth Clause of this document confirmed the interaction in the field of nuclear energy (Ukaz Prezidenta Ukrainy Pro zatverdzhennia Stratehii intehratsii Ukrainy..., 1998).

In 2004, there was a fairly large-scale enlargement of the EU toward Eastern Europe. As a result, the geographical border of the EU has come close to Ukraine. Considering these large-scale geographical, economic and political changes. Ukraine adopted in 2005 a document titled «Action plan «Ukraine – European Union»» (hereinafter Action Plan), which was aimed at strengthening cooperation with the EU and intensifying the process of European integration (Plan dii «Ukraina – Yevropeiskyi Soiuz», 2005). Energy issues were also included in this strategic document, and special attention was paid to the field of nuclear energy. For example, Clause 12 in Subsection 2.5 of this document contains a meaningful description of the obligations that Ukraine undertakes to the EU, as follows; improving safety at nuclear facilities, working on a protective dome for the Chernobyl nuclear power plant and strengthening support for national regulators (Plan dii «Ukraina - Yevropeiskyi Soiuz», 2005). It should be noted that the specified requirements in the «Strategies» and

«Plans» are not just recommendations, but quite specific instructions for the implementation of the goals. For example, the annual report of the State Regulatory Inspectorate (2006) confirmed that the implementation of tasks prescribed in the «Action Plan» is occurring (Dopovid pro stan yadernoi ta radiatsiinoi bezpeky v Ukraini, 2006). In our opinion, this is rather significant fact of the influence of the European integration process on legal policy and institutional transformation.

However, at the present moment, the most important document related to the European integration of the EU is the Association Agreement (hereinafter the Agreement), which was signed in 2014 and fundamentally influenced changes in the legal sphere, including nuclear safety (Association Agreement between the European Union..., 2014). The presented Agreement promotes closer cooperation in various areas related to European integration. Nuclear energy, like other types of energy resources, is an integral part of such documents because it influences the development of the economic sector. In the preamble to the Agreement, nuclear safety is mentioned as one of the key areas of cooperation within the framework of the Association. But in more detail, interaction in the field of nuclear energy is considered in Section V of the Agreement. The cooperation in the energy industry and, in particular, the use of nuclear energy is described in detail in this Section (Association Agreement between the European Union..., 2014).

Article 342 Section V specifies many critical aspects of interaction between the EU and Ukraine in the legal and political aspects of nuclear safety. The basis of European integration in this context is the implementation of specific agreements in the field of nuclear energy, the need for which may arise during the interaction process. The range of interactions in this factor is quite extensive. Ukraine has to standardize the legal framework in accordance with EU legislation and ensure nuclear safety in all cycles of operation of energy resources and objects of this type. Additionally, the intensification of activities occurred in the field of joint research and training of personnel for nuclear facilities (Association Agreement between the European Union..., 2014).

More detailed cooperation in the energy sector between Ukraine and the EU is spelled out in the «Appendix XXVI to Chapter 1» Section V of

the Association Agreement (Dodatok XXVI - Do Hlavy 1 «Spivrobitnytstvo u sferi enerhetyky, vkluchaiuchy yadernu enerhetyku», 2014). However, this document lost its force and on the basis of «Decision No. 1/2019 of the Association Council between Ukraine and the EU from 07/08/2019», a new edition was adopted under the number XXVII (Rishennia Rady asotsiatsii mizh Ukrainoiu ta YeS, 2019). In fact, this document describes in more detail the process of approximation of law in the field of energy (not only nuclear). For example, in Appendix XXVII-B, Ukraine assumes direct obligations to optimize the legal system of the energy sector, in relation to the EU regulations (Dodatok XXVII-B – Do Hlavy 1 «Spivrobitnytstvo u sferi enerhetyky, vkluchaiuchy yadernu enerhetyku», (2019). The Appendix discusses different types of energy and the EU regulations that should be synchronized with Ukrainian legislation. In Appendix XXVII-B, there was a separate sub-clause dedicated to nuclear power. Generally, Ukraine must implement the following five Euratom Directives: Directive 2013/59/Euratom (Directives Council Directive 2013/59/EURATOM); Council Directive 2006/117/Euratom (Council Directive 2006/117/EURATOM); Council Directive 2009/71/Euratom (Council Directive 2009/71/EURATOM); Council Directive 2014/87/Euratom (Council Directive 2014/87/EURATOM); Council Directive 2011/70/Euratom (Council Directive 2011/70/EURATOM). The abovementioned Directives are fully related to nuclear safety issues. This fact indicates that the EU considers this component of its energy policy extremely important and the established requirements will transform the legal basis of Ukraine's nuclear security to the maximum.

This approximation process did not begin in 2019, but much earlier. In our opinion, the adoption of the Association Agreement became the key stage for the transformation of the entire legal system of Ukraine, because the approximation process has significantly intensified. The State Regulatory Inspectorate in 2014 became the main institution that took the initiative in approximating the legal system, the main regulatory body in the field of nuclear energy and is responsible for safety. In 2015 the State Regulatory Inspectorate submitted for consideration the Draft Law on Amendments to a number of Laws dedicated to nuclear safety. In total, four Laws should be subject to changes, three of which were considered

above and are the legislative basis for the nuclear safety of Ukraine. The implementation of many Euratom directives and the development of relevant Legislative Acts began in 2014–2015. Their goal was to increase the autonomy of the State Regulatory Inspectorate in accordance with the standards of European regulatory bodies (*Dopovid pro stan yadernoi ta radiatsiinoi bezpeky v Ukraini*, 2015).

Additionally, the optimization of many regulatory documents occurs during Ukraine's interaction with European regulatory organizations. For example, since 2009, Ukraine, as a partner country, has been closely cooperating with WENRA. Representatives of the State Regulatory Inspectorate take part in the working groups of this organization and strive for maximum optimization of regulatory standards. According to the latest annual report of the State Regulatory Inspectorate for 2021, Ukraine actively cooperates with WENRA, and Ukrainian specialists take part in three working groups related to various aspects of the operation and safety of nuclear facilities (*Dopovid pro stan yadernoi ta radiatsiinoi bezpeky v Ukraini*, 2021). It should be noted that WENRA, along with other organizations, promptly responds to emergencies. Ukraine, in this context, is no exception. On August 10, 2022, WENRA's position was published regarding the damage of ZNPP as a result of hostilities. To assess the current situation, an expert group was created, which, according to information received from Ukraine and the IAEA, analyzed the level of danger of an artificial disaster. After reviewing the information received, the expert group concluded that at the time of publication of this document there is no critical hazard. However, WENRA's clear position is that any action that could damage the integrity of a nuclear facility is unacceptable (WENRA position on the safety situation of Zaporizhzhya NPP..., 2022).

Additionally, Ukraine started cooperation with ENSREG in 2011, especially in the process of conducting «stress tests». As with WENRA, the joint activity is described in the most recent report by the State Regulatory Inspectorate. Having received the status of an observer, Ukraine takes part in the plenary meetings of ENSREG and conducts very close cooperation. For example, in 2021 the commitments made by Ukraine, an Updated National Action Plan was prepared based on the results of «stress tests» (*Dopovid pro stan yadernoi ta radiatsiinoi bezpeky v Ukraini*, 2021).

However, the most important fact is that ENSREG, as one of the key regulatory organization for nuclear safety in the EU, monitors the situation at ZNPP and responds to ongoing events. To analyze the level of danger and the military situation at the ZNPP, ENSREG has already held four video conferences with experts. One of the latest was the conference of October 4, 2022, as a response to the RF's annexation of many territories in the southeast of Ukraine, including the territory of ZNPP. An important conclusion of the conference was that ENSREG, at the legal level, recognizes only the license of Energoatom of Ukraine, for this nuclear facility and exclusive powers in the field of regulation are granted by the State Regulatory Inspectorate (Statement on the safety of nuclear installations in Ukraine..., 2022).

CONCLUSIONS

The abovementioned facts make it possible to draw conclusions about the impact of European integration as a political process on the legal system of Ukraine in the field of nuclear safety. Having considered the experience of the EU in the development of nuclear security, we could identify several trends: static in the transformation of nuclear security in relation to other legal aspects and the desire to integrate its legal model into the systems of nation states. This process, in our opinion, has an exclusively political nature and is justified by the globalist desire of the EU to unify its legal framework. In this context, Ukraine has taken all the necessary steps to optimize its legal framework to the standards of the EU and supranational regulatory authorities. We could convincingly demonstrate that since 1994, when Ukraine launched the process of European integration, nuclear safety has occupied an important place in its legal system. It was possible to demonstrate that the adoption of new Euratom Directives and normative acts was considered by Ukraine. For this purpose, special planning and strategic documents were designed to systematically transform the legal framework of Ukraine. One of the indicative facts is the changes in the three main laws, which, in our opinion, represent the legislative basis for Ukraine's nuclear safety. Additionally, the EU supranational regulators

such as WENRA and ENSREG have a significant impact on the regulatory and legal framework for nuclear safety. Ukraine made many commitments to improve control and develop its own regulatory body – the State Regulatory Inspectorate, which received significant autonomy under the influence of European initiatives. It should be stated that the influence of European integration as a political process is so profound that it leads to conceptual changes in the legislative and even institutional framework. However, the world is constantly changing and new challenges are emerging for the EU and Ukraine. The official response to the fighting on the territory of ZNPP demonstrated that the European institutions are ready to provide maximum expert and legal assistance, securing exclusive rights for the Ukrainian side to this nuclear facility. In our opinion, this precedent should become the starting point for a new round in the evolution of nuclear security. Among the new mechanisms to counteract such situations may be the development of new digital control systems, the creation of new institutions, which, at the outbreak of hostilities, can immediately introduce sanctions, and of course, the expansion of legislation and cooperation in the field of countering military operations on the territory of nuclear facilities. This topic requires further study in order to create more effective mechanisms for countering threats to nuclear security. The current challenges require a revision of the political and legal approach to nuclear security and the creation of the necessary institutions to prevent crisis situations.

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