

INFLUENCE OF PUBLIC ENVIRONMENTAL ORGANIZATIONS ON NUCLEAR ENERGY IN UKRAINE

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ABSTRACT

The scientific article is based on a wide range of sources – archival documents, publications of periodicals, Internet materials. The influence of public environmental associations on the functioning of atomic energy in Ukraine, for example, the 1980s - 2010s, is analyzed. The catastrophe at the Chernobyl nuclear power plant in April 1986 became the impetus for the mass formation of non-governmental environmental public organizations in Ukraine, which at that time was part of the USSR. An important vector of activity of the first environmental societies was the anti-nuclear movement, during which the struggle was held to stop the construction of new and increase the capacity of existing nuclear power plants. The Green World Association, whose cells were located in almost all major cities of Ukraine, was actively involved in issues of energy and nuclear safety. The Crimean Association “Ecology and Peace” appears as a reaction of the population to the beginning of the construction of the Crimean NPP. To provide social and legal protection for the victims of the Chernobyl accident, the All-Ukrainian public organization “Chernobyl Union of Ukraine” was created. At the initial stage of the existence of the “greens,” the most common forms of their activity were rallies, mass protests, the collection of signatures on the prohibition and termination of illegal actions. Green societies received widespread support from the population, but at the same time came into confrontation with the party leadership. Under pressure from public associations, the Council of Ministers of the USSR in 1989 decided to stop the construction of the Crimean NPP, the 4th reactor of the South Ukrainian NPP and reservoirs on the South Bug River. With the declaration of independence of Ukraine, a new stage in social and political life began, for which the absence of state control over social movements became characteristic. Since 1992, the legal status of public organizations was determined by the Law of Ukraine “On the Association of Citizens”. The relevance of nuclear issues in Ukraine is due to the functioning of five nuclear power plants on its territory: Zaporizhzhya, Khmelnytsky, Rivne, South Ukraine and Chernobyl (until 2000). The main environmental societies that dealt with nuclear energy issues were the National Ecological Center of Ukraine, the Ukrainian Nuclear Society, Greenpeace-Ukraine, the Ukrainian Ecological Association Green World, the All-Ukrainian Ecological League, Ecoclub and others. The environmental movement is moving from

the stage of protests and objections to pragmatic alternatives. Public organizations are becoming a link between government bodies, industry specialists and society. Ecological societies initiate appeals to the highest authorities and state specialized institutions. With the participation of the Greens, actions are being taken to inform the public about the current radiation situation at nuclear facilities, the development of alternative types of energy, and the problem of nuclear waste disposal. An important area of activity of public associations was participation in environmental assessments and hearings, scientific conferences. In particular, proposals were made to a document of national significance “Energy Strategy of Ukraine until 2030”.

Keywords: public organizations, environmental policy, anti-nuclear movement, nuclear power plants (NPPs), Ukraine.

INTRODUCTION

The growing demand for electricity in the USSR contributed to the rapid construction of nuclear power plants. By April 1986, 4 NPPs were commissioned in Ukraine: Zaporizhzhya, Rivne, South-Ukrainian, and Chernobyl. The Peaceful Atom seemed to be a limitless source of energy. During the planned operation, nuclear power plants cause significantly less negative environmental impact compared to other types of power plants. According to the plans for the development of nuclear energy in the USSR, 5 new nuclear power plants will be built in the Khmelnytsky NPP, the Crimean NPP, the Chigirinsky NPP, and the Kharkov ATEC (atomic heat and power plant) and Odessa ATEC. However, the accident at the 4th unit of the Chernobyl nuclear power plant (April 26, 1986) changed not only the development strategy of nuclear energy, but also became a harbinger of socio-political changes in the USSR and Ukraine in particular. They devoted their general problems to the functioning of the environmental movement in Ukraine and its regions research N.A. Aleksiyovets, S.I. Vasyuta, Yu.A. Kaganov, I. Kovalenko-Chukina, L.V. Kolpak, V.V. Mikhailov, O. Stegny and others. In Ukrainian historiography N.P. Baranovskaya comprehensively analyzed the socio-political, social, humanitarian and foreign policy problems caused by the Chernobyl disaster. Nuclear energy as a subject of socio-ecological dialogue between supporters of the ideas of environmentalism and technocratism is studied in the dissertation of Kharkiv sociologist M.M. Sappa. The problem of interaction between society and government on energy and nuclear safety in Ukraine, as a rule, was considered by scientists in the context of general environmental issues and was not a separate subject of research. In the proposed article, the authors set out to determine the forms, specifics and results of the influence of public organizations on the functioning of atomic energy in Ukraine, for example, the 1980s - 2010s. As a result of the accident at the Chernobyl nuclear power plant in the Soviet Union, there is public opposition to the activities of the nuclear energy industry in the form of environmental non-governmental societies. The first was the Green World association, appeared in December 1987 and was a reaction of society to the catastrophic state of ecology in the RSFSR. After two years of existence, the organization united almost half a million people. The Green World Association on the anniversary of the Chernobyl disaster, April 25-26, 1989 held an inter-republican environmental conference with the participation of delegates from 17 regions of Ukraine, representatives of Belarus, the RSFSR, Georgia and Moldova. The forum decided to support the requirements to stop the construction of nuclear power plants in Ukraine, declassify information on the operation of nuclear power

plants, radiation pollution, the health status of all residents of the affected areas and participants in the liquidation of the Chernobyl accident [14].

The issue of energy-atomic safety has become especially acute in the regions in whose territory nuclear power plants were located or in those in close proximity to them. The issues of environmental safety in the Nikolaev region were actively dealt with by the local branch of the Green World Association. The organization's goal was to stop the expansion of capacities of the South Ukrainian NPP through the construction of new power units and related facilities: the Dnieper-Bug hydroelectric complex, Aleksandrovskaya and Konstantinovskiy reservoirs. In addition to Nikolaev, the organization had its branches in other cities of the region: Pervomaisk, Voznesensk and Yuzhnoukrainsk. Wide circles of the public were involved in the work of the society: scientists from the shipbuilding and pedagogical institutes, the museum of local lore, engineers and employees of the production association "Equator", design bureau of electrohydraulics, agricultural workers, teachers, lawyers, doctors, journalists, economists. A public environmental review of the hydropower project of the South Ukrainian NPP was carried out. Specialists made disappointing conclusions and identified a number of serious shortcomings and errors of the construction project. In particular, the NPP site was located on the fault of the Ukrainian tectonic shield, which led to high seismic activity (6.2-7.1 points) and a tectonic surface rise (2.8 mm per year) [4].

METHODS

A geographical location error was identified. Thus, the high annual temperatures of the southern region required additional resources for cooling the reactors. The consequences of the expansion of the South Ukrainian NPP could be catastrophic: the destruction of the fishing industry, the loss of fertile arable land, the flooding of archaeological sites as a result of the creation of artificial reservoirs, etc. In support of the protest under the slogan "No to the construction of the 4th and 5th power units of the South Ukrainian NPP "The Nikolaev association" Green World "collected 200 thousand signatures of citizens. To solve the energy problem of southern Ukraine, the idea of using the "clean" wind, solar, biological energy resources of cooperatives is proposed [5]. Lack of information about the operation of nuclear power plants, a lack of understanding of the structural differences between nuclear power plants of various types, their impact on the population and the environment caused massive public protests. In Neteshyn, a satellite city of the Khmelnytsky NPP, on August 27, 1989, during an unauthorized environmental rally in which 5,000 people took part, questions were raised about the negative consequences of a possible expansion of the nuclear power plant, the actions of the union department were criticized, "they ignore public opinion, pursue a policy of departmental dictatorship ". It was proposed to carry out an environmental assessment at the station, and in Ukraine to hold a referendum on the use of nuclear energy [8]. For Crimea, the environmental safety problem has become particularly acute due to the start of the construction of the Crimean NPP. The response of the population was the creation in 1988 of the Crimean Association "Ecology and Peace". V. Pivovarov - Professor of the Department of General Physics of Simferopol State University was elected President of the organization [13].

The Association "Ecology and Peace" gained wide popularity among the population of many cities of Crimea: Simferopol, Kerch, Feodosia and others. It held mass protests. In September 1989, a wave of environmental rallies swept across Crimea both in large cities

and in urban settlements type. In particular, in the Central Park of Culture and Leisure of the city of Simferopol, a rally entitled "Crimea and nuclear power plants are incompatible!" Activists of the environmental movement, prepared a resolution in which they promised to start a general strike if the construction of the Crimean NPP is not stopped [3]. A similar meeting was held in the city of Lenino, which is located near the satellite town of Shchelkino NPP. Despite the fact that the readiness of the first stage of the nuclear power plant was almost 90%, public pressure on the authorities and the danger of a Chernobyl disaster prompted the Council of Ministers of the USSR in October 1989 to decide on stopping the construction of a nuclear power plant on the Crimean Peninsula. The terrible consequences of the Chernobyl accident and the existence of a large number of people affected by radiation caused the creation of the All-Ukrainian public organization "Union of Chernobyl of Ukraine" (SCU). The organization set itself the goal of protecting the rights of citizens who took part in the aftermath of the accident and those affected by it, as well as those who fell under the influence of any type of radiation exposure [10].

DISCUSSION

With the declaration of independence of Ukraine in August 1991. A new stage in social and political life begins, which is characterized by a lack of state control over political parties and social movements. The legal status of public organizations since 1992. It began to be determined by the Law of Ukraine "On the Association of Citizens". In these conditions, the influence of public associations on public mood is rapidly spreading. On October 21, 1993, the Verkhovna Rada lifted the moratorium on the construction of nuclear power plants and power units. Work at previously frozen nuclear facilities was restored. As a result, in October 1995, the 6th unit of the Zaporizhzhya NPP was launched. Partially overcoming the year of the deep economic crisis in Ukraine in 2004, the second Khmelnytsky power unit and the fourth - the Rivne NPP were commissioned. Given the critical situation at the Chernobyl nuclear power plant, the Ukrainian government was gradually decommissioning the power unit. At the end of 2000, the latter was stopped by the third Chernobyl unit. Thus, at the beginning of the XXI century. Ukraine has four nuclear power plants with 15 reactors. Under the leadership of Andreev Yu. B., the All-Ukrainian Public Organization of Disabled Persons Chernobyl Union of Ukraine continued its activities. Combining in its ranks about 240,000 people, the SCU totaled 548 regional, city and district cells throughout Ukraine. Over the entire period of the organization's existence, 119 All-Ukrainian mass protest rallies, demonstrations, and pickets were held. 18 years of the organization's statutory activities, 50,000 people received material, medical and humanitarian assistance. The organization is part of the International Organization Chernobyl Union, registered at the UN and unites 22 national organizations in different countries of the world. Together with the Scientific Radiological Center of the Academy of Medical Sciences of Ukraine, the SCU holds scientific and practical seminars on the biomedical consequences of the Chernobyl disaster. Representatives of the organization are part of government, interdepartmental and departmental commissions for the integrated solution of the Chernobyl disaster [11].

In the early 1990s in the social movement a "new wave" of societies arose. Difficult economic conditions in Ukraine in the 1990s. They gave rise to a "new wave" of societies, the functioning of which was made possible thanks to the receipt of international material assistance (grants) for the implementation of environmental projects. Greenpeace's

activities in Ukraine began with the Chernobyl Children medical project, which included the assistance of foreign specialists in diagnosing and treating children affected by the Chernobyl accident. Since 1993, Greenpeace-Ukraine has existed as a national branch of the international organization Greenpeace-International. The organization conducted campaigns for a nuclear-free future, opposed nuclear energy in Ukraine. Greenpeace-Ukraine fought a policy of isolating society from issues related to the development of nuclear technology, as the most environmentally risky. In 1993, Greenpeace conducted a training bus tour entitled "No to New Reactors!" The route passed from Lviv through Rivne, Zhytomyr, Kiev, Odessa, Nikolaev to Zaporozhye. Over the 9 days of the event, more than 15,000 signatures of people were collected, they said "No!" the construction of new reactors. In the study "Environmental Principles of Energy Sector Restructuring in Ukraine" (April 1994), Greenpeace-Ukraine concludes that Ukraine can do without the Chernobyl nuclear power plant and further expansion of its nuclear capacities if a policy of energy conservation and energy efficiency is pursued. Greenpeace-Ukraine International Initiative allowed collecting 260,000 postcards with signatures of people from 21 countries of the world demanding to immediately close the Chernobyl nuclear power plant and hand them over to President L. Kravchuk. In 1994, Greenpeace-Ukraine supported the population of cities located in the zone of influence of the Zaporizhzhya NPP against launching the 6th power unit and building a storage facility for spent nuclear fuel [2].

The National Ecological Center of Ukraine (NECU) became one of the first ecological public non-profit organizations registered in independent Ukraine (August 30, 1991). The organization works to protect natural areas, biodiversity, to prevent global climate change and the negative effects of the energy sector. NECU encourages officials and politicians to make decisions based on the need to preserve the environment and the safety of the population, prepares its assessments and research and offers alternative solutions. As of 2000, NETSU had 22 territorial branches and operated throughout Ukraine. NECU deals with a wide range of issues related to nuclear safety. Thus, the organization expressed concern about the state of Ukraine's water resources. In terms of local water resources (1,000 cubic meters per capita), Ukraine is considered one of the least prosperous countries in Europe. The largest consumers of water resources are nuclear power plants, which are mainly located in low-water areas of the country: Rivne, Khmelnytsky, Nikolaev [7].

The organization "Ecoclub" approaches rationally the problems of energy development in Ukraine. The merger does not require immediate closure of all existing nuclear power plants - this is impossible. However, he proposes not to invest in risky hazardous projects of new nuclear power plants, but to direct them to the development of green, renewable energy. Representatives of public organizations have repeatedly drawn attention to the danger of continuing the design life of nuclear reactors. The first signs of aging of the reactors are difficult to detect, because they arise at the microscopic level of the structure of materials, and therefore, as a rule, become apparent only after the accident has already occurred. So in 2010, the issue of extending the life of two nuclear reactors of the Rivne NPP gained relevance. The chairman of the board of the non-profit organization Ecoclub (Rivne), Andrei Martyniuk, notes that "the old VVER-440 type reactors in Ukraine, which are planned to be extended in Ukraine, the Association of West European Nuclear Regulatory Authorities has recognized the safety of which cannot be raised to an acceptable level."

The coordinator of the energy program of NECU Artur Denisenko notes that as of 2010 “In our country and its neighbors there is no such demand for electricity to use all Ukrainian atomic units - this means that the funds invested in the units will never be returned. The nuclear electricity tariff does not cover the costs of solving the problem of radioactive waste of nuclear power plants and its closure, so the work of old power units will not only not bring profit, but on the contrary - will bring losses” [6].

On the territory of Ukraine, there are unfinished nuclear facilities since Soviet times, in particular power units № 3 and 4 of the Khmelnytsky NPP. The main part of the building structures was built before 1990. Nevertheless, the Ukrainian government is trying to implement projects to complete these facilities.

The All-Ukrainian Ecological League, a non-governmental organization founded in December 1997, noted the unjustified risks of completing the Khmelnytsky NPP. According to the conclusion of the inspection and assessment of the technical condition of building structures in 2006-2007, provided by the Kiev Research and Design Institute "Energoproekt", there are mechanical damage, corrosion of reinforcement and metal elements of reinforced concrete structures, rust and cracks in concrete. The external and internal monolithic walls of the underground part of the block pumping station of Unit № 3 of KhNPP are recognized as unusable”, some metal elements (stairs, pipes) are in an emergency condition.

As of 2019, there is no reliable information on the safety of the use of existing foundation structures for nuclear reactors. Also, the completion project does not provide for the construction of new, additional safety systems in accordance with the requirements of safety standards, which have changed significantly since the opening of KhNPP. In addition, the completion of KhNPP Units 3 and 4 will have a significant impact on the environment, namely on the Goryn River, which is one of the largest waterways in the area where the station is located [1].

RESULTS

During the years of independence, the Ukrainian Ecological Association Green World continued its fruitful activities. Chairman of the Association Samoilenko Yu.I. led the Ukrainian delegation at a meeting of the UN General Assembly, which considered the issue of providing humanitarian assistance to Ukraine, and also participated as a member of the delegation in the most important meetings of the Donors Council of the Shelter Construction Fund in London. The Green World prepared and distributed an appeal to the Ukrainian people in which it expressed deep concern about the deterioration of emergency work at the Shelter facility of the Chernobyl nuclear plant through the fault of Ukrainian ministries and departments. The latest accident at the Fukushima-1 nuclear power plant (Japan) proved the futility of nuclear energy based on the decay of uranium. An alternative is controlled nuclear fusion of hydrogen, the experimental confirmation of which will make it possible to build a new generation of reactors, an almost inexhaustible source of energy and reduce environmental pollution [10].

The first public scientific and technical organization uniting nuclear specialists and scientists from other fields of knowledge was the Ukrainian Nuclear Society (UkrNS), which was formed in September 1992 in Odessa. The first president of the organization was V. G. Saponov, then the general director of the Khmelnytsky NPP. From that moment on, the society contributed to the solution of many scientific, industrial and social

problems of Ukraine's nuclear energy. Every year, dozens of specialists and students become members of the community. Throughout the years of the existence of the UkrNS, a large number of events are held under the auspices of the organization. Active cooperation is being conducted with enterprises of the nuclear industry. The Company systematically holds scientific conferences, including international ones, seminars, meetings at which domestic and foreign experts share their own ideas, best practices, and proposals aimed at solving the problems of nuclear energy. Much attention is paid to working with the public and the media. During the work, relations were established with international organizations, namely the European Nuclear Society (ENS) and nuclear societies of other countries, well-known foreign corporations and firms such as Westinghouse (USA), Siemens KWU (Germany), EDF (France), Skoda (Czech Republic) and others [10].

Non-governmental organizations that have accumulated considerable experience both in the environmental protection sphere and in the nuclear energy field directly participated in shaping the state's energy policy. Thus, the document "Energy Strategy of Ukraine until 2030" was criticized. The main calculation in the program proposed by the government is made on the development of nuclear energy - extending the life of 13 existing units and building 22 units, 2 of which are additional units at the Khmelnytsky NPP, 9 - instead of the old ones that can no longer be operated, 11 - absolutely new ones. After analyzing the document, the coalition of public organizations came to the conclusion that the "Energy Strategy of Ukraine until 2030" should be reviewed. Ukraine will not have enough financial resources for large-scale investments, especially in nuclear energy, which needs them, first of all, at the initial stage. This strategy only creates deceptive comfort and postpones the need for drastic steps to reform the energy sector, jeopardizing the country's energy independence [12].

CONCLUSION

Thus, the emergence of the anti-nuclear movement in Ukraine was caused by the accident at the Chernobyl nuclear power plant, the reluctance of the Soviet leadership to review the program of nuclear energy development and is closely linked to the development of social activity and democracy in the USSR. The Green World Association, the Crimean Ecology and Peace Association, and the All-Ukrainian Public Organization Chernobyl Union of Ukraine have been actively involved in energy and nuclear safety issues. The societies gained widespread popular support and came into conflict with the party leadership.

During the years of Soviet perestroika, rallies, mass protests, the collection of signatures on the closure of existing nuclear power plants and a ban on the construction of new units and stations became common forms of activity of public organizations. Non-governmental organizations launched an anti-nuclear movement and made a significant contribution to the introduction of a moratorium on the construction of new nuclear power plants and an increase in the capacity of existing nuclear power plants in Ukraine in August 1990. Adopted by the Verkhovna Rada of the USSR.

With the proclamation of independence of Ukraine begins a new stage of socio-political life, which was characterized by a lack of state control over social movements. The main ecological societies that dealt with nuclear energy were the National Ecological Center of

Ukraine, the Ukrainian Nuclear Society, Greenpeace-Ukraine, UEA Green World, the All-Ukrainian Ecological League, and the Ecoclub.

The current stage of the anti-nuclear movement in Ukraine is characterized by the rationalization and professionalization of public organizations. There was a transition from the stage of protests to pragmatic alternatives.

In nuclear energy, there are a number of problems that are of particular concern to society: radiation safety, storage of spent nuclear fuel, economic efficiency of nuclear energy, objective informing of the population about the current state of affairs at nuclear power plants and the like. Specialists, of course, solve these issues, but do so "closed" from citizens. Atomists do not have the skills to work with the population to explain the essence of technical issues in a simple and clear way. In turn, society lacks special knowledge. Public organizations uniting specialists in various fields is a link between the state branch energy and nuclear institutions and society.

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