

WP2

# Belarus

## Short Country Report

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**HONEST** History of Nuclear  
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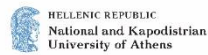
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## Executive summary

This report belongs to a collection of 20 short country reports on the History of Nuclear Energy and Society (HoNESt, project Ref.662268). The reports tackle the complex sociotechnical system around nuclear energy. Nuclear developments, notably nuclear energy, are closely intertwined with social, economic, environmental, political and cultural spheres. Nuclear energy is also a globalized system involving transnational transfers of knowledge, materials, technologies, people and products including electrical power, medical elements, toxic wastes and other environmental hazards, materials, capacities and knowledge that must be carefully safeguarded. Nuclear energy is a complex social and technological phenomenon that influences societies but is also shaped by societies.

The short country reports are designed to assemble information and research results on the history of the relations between nuclear energy and society in an accessible manner, and to document the findings with references.

The purpose of the country reports is threefold, addressing three different audiences:

1. to provide basic elements of narrative and analysis for further historical research by HoNESt researchers
2. to provide information, context and background for further analysis for HoNESt's social science researchers
3. to provide accessible information on nuclear-societal relations in the various countries for the purposes of outreach and communication with stakeholders (civil society, industry, associations, policy makers, journalists).

This report focuses on the history of the relations between nuclear energy and society in the Belorussian Soviet Republic and in Belarus. In spite of a series of regimes which limited the extent to which civil society could independently protest or promote nuclear power, the construction of nuclear power plants (NPPs) prompted public concern, and political response. In particular, the construction of NPPs that had been developed before the Chernobyl disaster caused public and political concern. After independence in 1990 the national nuclear program became part of discussions and debates followed by a 10-year moratorium on any NPP construction. Nevertheless

nuclear programs in Belarus remained in place due to the way in which nuclear risks and post-Chernobyl uncertainties were articulated, translated for and perceived by the population. This at times confused discourse of nuclear risk, has meant that nuclear protest has been limited since 2001. | In 2008, the Belarusian government decided to build an NPP in Belarus, and construction began in 2012.

## 1. Historical Context (narrative)

### 1.1. Introduction to the historical context

The history of the nuclear program in Belarus can be presented retrospectively as a part of the general Soviet planning of nuclear power development and implementation in the Soviet Republics; from the perspective of long-term post-Chernobyl strategy; and of the ambitious energy outlook of the political regime established in Belarus after the collapse of the USSR. The first part concerns the history of the Belorussian nuclear program, the second – the Belarusian nuclear program after independence. Both nuclear programs reflect different political, technological and social contexts, before and after the collapse of the USSR, and before and after Chernobyl which reveal different forms of civic engagement and participation by differing political actors and social agents.

### 1.2. Contextual narrative

#### **The Belorussian nuclear program**

The first projects for nuclear power in the Belorussian Soviet Socialist Republic (BSSR) were discussed from 1960 to the mid-1980s, starting from the creation of the first governmental commission on nuclear development in 1967 and ending with the construction of the first Nuclear Thermal Power Plant (NTPP) which began in 1983.

During this planning stage the core issues of nuclear development in the BSSR were linked to the research projects of the Joint Institute for Power and Nuclear Research, established near Minsk in 1965 as successor of the Nuclear Power Engineering Institute of the BSSR Academy of Sciences. The core group of nuclear scientists, led by Academician Krasin, one of the founders of the first Russian NPP in Obninsk, developed reactors based on a new technological cycle named *BRIG 300*, a breeder reactor. The administration of the Institute representing the scientific elite of the BSSR was a key promoter of nuclear power in the BSSR and supported the construction of this experimental type of the reactor.

The Joint Institute for Power and Nuclear Research was one of the leading institutions in nuclear research in the Soviet Union and attracted the best nuclear physicists and engineers from around the USSR. In 1962 the Institute acquired a standard IRT research reactor that permitted expansion

of experimental nuclear research activities. In addition, the Belorussian State University opened a new study program on the “Physics of the nuclear installations” to prepare qualified personnel for research and work at NPP. This was followed by similar programmes of study and training at two other universities, the Belorussian Polytechnic Institute and the Institute of Radiophysics. By the mid-1970s a group of scientists with the capability of developing a new nuclear project had been formed from graduates of the Joint Institute for Power and Nuclear Research. Research was initially focused on two innovative nuclear projects, a portable nuclear reactor – PAMIR, and the BRIG 300.

Qualities	PAMIR	BRIG 300
<b>Technical Qualities</b>	<p>Thermal capacity achieved during tests – 4950 kW, electrical – 630 kW. The height and diameter of the reactor core – 0.5 meters; mass of the core zone – 5.7 tones. Operational time – 10 years. Connected to grid – 24 November 1985. Reactor commissioning from 6 July to 5 August 1985.</p>	<p>Thermal capacity – 1,110 MW, electrical – 353.3 MW. The height of the reactor core – 0.74 meters; the volume of the core zone – 1.41 m<sup>3</sup>. The fuel core – uranium dioxide and plutonium. Fuel blanket - natural or depleted uranium.</p>
<b>Techno-political qualities</b>	<ul style="list-style-type: none"> <li>- The reactor was small and light enough to be transported by truck;</li> <li>- Unlike fossil fuels, the reactor could operate in a wide range of climatic conditions;</li> <li>- Autonomous air cooling without water;</li> <li>- Maximum automation, meant a minimum number of operating personnel were required;</li> <li>- Deploying the portable reactor took less than 6 hours;</li> <li>- Project ceased after Chernobyl</li> </ul>	<ul style="list-style-type: none"> <li>- single-loop circuit which significantly reduced build-cost;</li> <li>- Fuel doubling time (9-10 years);</li> <li>- Concept of the nuclear cycle developed by Academician Aleksandrov: meaning that fuel for proposed plants would first be ‘bred’ in the fast breeder reactors;</li> <li>- To reduce the refuelling time and to use of space above the core for refuelling without removing the cover;</li> <li>- Relatively high condensing temperature of the heater allowed either evaporative or dry cooling towers depending on the availability of cooling water;</li> </ul>

In a 1980 report, on the “Actual state and perspectives of the development of nuclear energy in the USSR”<sup>1</sup> the director of the Joint Institute for Power and Nuclear Research, Vasili Nesterenko, argued that the Belorussian energy system needed nuclear power because of a lack of alternative local energy resources. Without the development of nuclear power, Belarus would have to rely on

<sup>1</sup> Belarusian National Archives (БНА), f.7, o.5, d.8577, pp.14-29, 31.3.1980

costly imports of fossil fuels. In the same document he announced that the first unit of the Nuclear Thermal Power Plant (NTPP - cogeneration power plant) would be launched in 1988 and the second one in 1990. He noted that the Soviet authorities supported the suggestion of the Joint Institute for Power and Nuclear Research to construct a Belorussian NPP in three possible areas - Minsk, Vitebsk or Mogilev. In 1980 two main trends for nuclear developments in the BSSR were framed: the first concerned the construction of the NTPP and the second one concerned the Belorussian NPP in the northern part of the country. If construction on the first project commenced, then the second was constrained by geological site selection and further discussions with central authorities in Moscow. According to the decision of the Central Committee of the CPSU and the USSR Council of Ministers the building of the Minsk NTPP started in 1982 with two VVER-1000 PWRs at 1 million kilowatts of nuclear capacity each and 1,990 Giga calories of thermal capacity per hour. Development of both nuclear projects was affected by the Chernobyl disaster and especially by its impact on nuclear decision-making in the USSR at the end of the 1980s (Schmid S. 2015). However, whilst the Minsk NTPP project was less affected by the Chernobyl disaster and more affected by the economic and industrial decline of the 1980s; the Belorussian NPP was linked more explicitly to the disastrous aftermath Chernobyl and demonstrated how the local authorities, as well as concerned social groups, reacted to plans for NPP construction in the BSSR after Chernobyl.



Periods	Nuclear Thermal Power Station	Nuclear Power Plant
<b>1970-1983</b>	Discussions of the project, participation of the Belorussian Academy of Sciences, planning, energy and economic forecast. <b>Actors involved:</b> Minenergo, Minsredmash, BSSR Council of Ministers, Soviet Council of Ministers	Planning and elaboration of suggestions. Promotion of local nuclear technology, BRIG 300. <b>Actors involved:</b> Minsredmash, BSSR commission on national nuclear program, Joint Institute for Nuclear Research
<b>1983-1985</b>	Two level institutional tensions between central institutions (in Belarus and Russia) and between central and local institutions (in Belarus). <b>Actors involved:</b> Minenergo, Minsredmash, BSSR Council of Ministers, Soviet Council of Ministers	Promotion of local nuclear technology, BRIG 300. Nuclear energy is framed as an inevitable part of the energy mix. <b>Actors involved:</b> Minsredmash, BSSR commission on national nuclear program, Joint Institute for Nuclear Research
<b>1986-1987</b>	The construction is suspended, manpower and construction machinery moved to the Chernobyl NPP liquidation works. <b>Actors involved:</b> Minatom, Minenergo, BSSR Council of Ministers, Soviet Council of Ministers.	The debates about the location of the NPP are renewed. Central institutions pressure local institutions to implement the nuclear program. <b>Actors involved:</b> Belorussian Academy of Sciences, BSSR Council of Ministers, Soviet Council of Ministers.
<b>1987-1989</b>	The official decision to stop construction. <b>Actors involved:</b> Soviet Council of Ministers	Social mobilization. Opposition to the NPP project from local institutions <b>Actors involved:</b> Local Administration and Communist Party organs in Vitebsk region, Belorussian Academy of Sciences, BSSR Council of Ministers, Soviet Council of Ministers, Minenergo.

From the start of construction in 1982, the Minsk NTPP was declared as a construction site of national importance. This led to the mobilization of many subordinate organizations to ensure the intensive construction; it attracted special brigades of the youth organisation Komsomol to assist in some aspects of construction. The nuclear site had special status not only because it was a nuclear technology, but also due to its importance for national economic, industrial and social developments. “Nuclear” appears here not only as a source of energy, but also as a source of

exceptional national status. Both projects were abandoned after the Chernobyl disaster, and generated discussions about the future necessity of nuclear power in Belarus, following the declaration of the independence in 1990.

### **The Belarusian nuclear program**

Belarusian politics has been deeply affected by Chernobyl (see Ukraine SCR) from perestroika under Gorbachev to the consolidation of the authoritarian regime under Aleksandr Lukashenko and construction of the country's first new NPP beginning in 2012. Most scholarship on Chernobyl and its after-effects argues that the country that suffered the most was Ukraine (Marples 1996), and its impact on Belarus is not widely known. While Belarus was kind of a "missing page" in Chernobyl history, the ecological, medical and social impacts continue to play a significant role in political, national and social processes and discourses in the country. The Chernobyl disaster is closely related to significant political transformation in the country beginning with independence, political and social mobilization in the early 1990s, the further development of the political system, and the emergence of new political parties and electoral processes.

Today Chernobyl policy is a significant part of the governments' activities including the liquidation of the disastrous aftermath. This has not only been a matter for the governments as various NGOs, scientific institutions and scientists working on the consequences of the disaster, public organizations dealing with the affected territories and groups, independent and state media covering Chernobyl related issues and political parties involved in the Chernobyl March have participated in defining problems and developing the concept of safe inhabitation of the Chernobyl affected territories.

The first period of Chernobyl policy reflected the post-emergency situation (1986-1989). Its major feature was the almost total lack of official information which shaped Chernobyl's disastrous aftermath in controversial discourse as a system of contradictions, false senses and meanings, and misinformation spread by the state bodies. This lack of information concerning both the process of liquidation and the disaster's after-effects led to the "double mobilization" of society, antinuclear and anticommunist as well.

From 1989 to 1991 a shift within Chernobyl policy became possible. This was promoted by political transformation: the election of the People's Deputies of the USSR in the spring of 1989 under a new election law expanding possibilities of promotion and election of candidates, and the election to the Supreme Soviet of the BSSR in 1990. This reform and elaboration of the Chernobyl policy became possible due to political and institutional transformations and was finalized during the assemblies of the Supreme Soviet of the 11th and 12th convocations. It was in these meetings in 1990 that deputies formalised their opposition to the scientific concept of “35 rem” and their acceptance of the Concept of Residing in the Territories Contaminated by Radionuclides as a Consequence of the Disaster at the Chernobyl Nuclear Power Plant. This led to the creation of new zones of radioactive pollution, and further evacuation of the populations within them.

From 1991 to 1997 various legislation was developed, establishing the first government programs, a series of public scientific discussions and promoting the involvement of public organizations. During that time several important laws were adopted, among them a law on the Social Protection of the Citizens Who Suffered from the Disaster at Chernobyl Nuclear Plant and the Legal Regime of the Territories with Radioactive Pollution as Consequence of the Disaster at Chernobyl Nuclear Power Plant. These laws have introduced the categories of “suffered people” affected by the Chernobyl Disaster as well as a regulatory regime for the contaminated areas. The public debates that took place in scientific structures and in the media touched upon both the adoption of the Concept of Protective Measures during the Regenerative Period for the Population Living in the Territory of Belarus Exposed to the Radioactive Pollution due to Chernobyl Disaster in 1995 (see Event 3, section 3.4), the work of the Special Commission on Atomic Engineering Development in Belarus in 1998, and the acceptance of the moratorium on nuclear power plant building in Belarus (see Event 4, section 3.5). These two examples of scientific discussions illustrate how Chernobyl policy has become an issue for nuclear policy developments in Belarus. Currently Chernobyl policy in Belarus is mainly carried out under the Government Program on Overcoming and Minimization of Consequences of the Disaster at Chernobyl Plant whose goals are development and revival of the affected territories, reduction of scientific research, and reduction of benefits for “Chernobyl” social groups. These reductions testify the decreasing role of Chernobyl in decision-making.

**Periods****Events**

<b>1992</b>	The government of Belarus adopted and approved a Program of Energy Development and Energy Supply by 2010. For the first time since Chernobyl, new NPPs were considered.
<b>1993-1998</b>	In 1993 the concept of a draft Program of Nuclear Power Development in Belarus was developed. Between 1993 and 1998, a search for the possible sites for a NPP as well as for radioactive waste storage began.
<b>1998-1999</b>	Problems with the gas supply and the growth of the energy debt prompted increasing nuclear debates in mass media. Parliamentary hearings discussed the prospects for the development of nuclear energy. The Commission on the Use of Nuclear Energy was set up, which consisted of 34 scientists and activists from various research institutions. In 1998 Belarus abandoned the development of nuclear program for 10 years.
<b>2002</b>	Possibility of the construction of a NPP is discussed between Russia and Belarus, the special intergovernmental group has been established. Alexander Lukashenko announced that Belarus was ready to invest in the construction of new nuclear units in Russia.
<b>2005</b>	The Concept of energy security of the country, and the Program of modernization of the Belarusian energy system for the period 2006-2010 are adopted. One of the articles of the energy security Concept outlines the necessity to construct a NPP.

During the early 1990s the Belarusian Academy of Sciences became one of the central institutions for discussions on the development of nuclear power in the country. It joined the Belarusian Ministry of Energy and Russian Institute of Energy Research in a “Conception of the nuclear energy development within the structure of the energy complex of the Republic of Belarus”<sup>2</sup>. This concept illustrated the raise of the interests to renew the national nuclear program in the 1990’s.

<sup>2</sup> National Academy of Sciences Archives, f.1,d.3315, pp.105-129

Framework	Outputs
<b>Rationale</b>	<ul style="list-style-type: none"> <li>- The necessity of nuclear programs is questioned: negative social perceptions of nuclear energy; lack of confidence in the reliability and safety of nuclear power plants.</li> <li>- Take into account energy consumption, cost, supply dynamics, upgrading energy equipment and economic and ecological impact of the power plant.</li> <li>- The NPP has multiple risks and demands, but represents a reasonable solution insuring energy security in Belarus.</li> </ul>
<b>Legal framework</b>	<ul style="list-style-type: none"> <li>- The elaboration and adoption of a law on "The Use of Nuclear Energy and Radioactive Protection" before the start of the construction of any NPP.</li> <li>- The creation of a regulatory regime according to the IAEA including the elaboration of norms regulating the choice of NPP, its siting, safety regime and quality of construction.</li> </ul>
<b>Public opinion</b>	<ul style="list-style-type: none"> <li>-The elaboration of educational and propaganda activities to ameliorate public attitudes towards NPP construction: creation of a National Information Centre; the formation of public opinion in favour of nuclear energy; engagement work with population and with political structures in the regions of the possible nuclear sites; distribution of information about the choice of the site, the choice of reactor, and information about the construction; ensure public control over construction; distribution of information about the NPPs, accidents and ecological impact.</li> </ul>
<b>Technological Choice</b>	<p>The choice of the reactor type would be made through an open call and then evaluated according to the following criteria: - safety outputs; - commissioning dates; - commercial offers of the main nuclear companies. After the preliminary surveys in 1992-1993 14 possible sites were indicated. Due to the lack of the national legislation regulating the choice of the placement of the NPP, IAEA and Soviet-era legislation were used to determine the main criteria.</p>

In 1998-1999, Belarus abandoned development of a civil nuclear program. Nuclear discourse reappeared in Belarus at the beginning of the 2000s following the re-establishment of initiatives to construct a new NPP.

The government promoted nuclear power and put it firmly on the agenda through a series of directives. On August 25, 2005, President Alexander Lukashenko approved Decree № 399 "On energy security and strengthening the energy independence of the Republic of Belarus, 2006-2010" designed to develop nuclear energy. At a meeting on energy security on December 1, 2006, the President approved in their entirety the proposals of the National Academy of Sciences of Belarus

(hereafter NASB) and the Belarusian government on building a nuclear plant. On June 14, 2007, Lukashenko signed directive № 3 "Economy and savings as major factors in the economic security of the state ", where paragraph 1.3.1. provided for the revitalization of the construction of the plant. On November 12, 2007, Decree № 565 "On several measures for the construction of a nuclear power plant" was signed, whereby management of nuclear energy was established. On January 15, 2008, at a meeting of the Security Council of Belarus chaired by Lukashenko a final political decision on the construction of nuclear power plant was taken. In accordance with this decision the Belarusian government plans to build two nuclear reactors of 1,200 MW each, with the first reactor to be commissioned by 2016, and the second by 2018. In August 2008, the government adopted a law on the Use of Atomic Energy that defined the competencies and the process of public participation in decisions relating to policy in the sphere of nuclear energy including the establishment of the nuclear policy and the land and siting of the NPP.

Since 2006 the planning of a nuclear plant has turned from strictly being energy policy to a political project expressing not only rational calculations but political will and ambition. The construction of a nuclear plant is a long-term project involving different public actors and answering not only the economic and political demands of Belarus but also the political and geopolitical ambitions of President Lukashenko as a source of symbolic significance and political legitimation. On January 15, 2008, the decision to construct a NPP in Belarus was made at a session of Security Council of Belarus headed by Lukashenko. No public discussion on alternative projects within the civil or scientific community occurred. The legitimacy of this decision thus remains the subject of civil disagreement and social mobilization.

At first glance the political decision to construct the nuclear power plant in Belarus appears to be an economic one from an energy point of view given the lack of national energy resources, and from a technological point of view given lack of commitment of the government to develop renewable sources of energy. As Mikhail Mikhadzyuk, Belarus' Deputy Minister of Energy stated on March 23, 2011:

*We must understand correctly, even in light of the events that occurred in Japan [the tsunami and partial meltdown at Fukushima], Belarus needs a nuclear power plant. This is a new qualitative leap in the development of the country; brand new technologies are*

*coming to Belarus ... Belarus does not possess its own energy resources, so we have no other alternative. There is criticism, but no concrete suggestions[about] how to do without nuclear power.*

According to Article 10 of the Independence Declaration (June 23, 1990, № 193-XII) and Article 18 of the Constitution of the Republic of Belarus (November 24, 1996; 17.10.2004) the Republic of Belarus was declared a neutral and nuclear free territory. However, the way in which these articles is formulated makes clear that the phrase “nuclear free territory” refers to nuclear weapons, and not civil uses of nuclear power.

According to Gamson and Modigliani (1989), nuclear discourse is expressed in various semantic frameworks, for example progress and energy independence. The idea of progress (the development of society and technologies), and of independence from other energy sources (in particular oil and gas), were the basic arguments of nuclear discourse in the BSSR and in independent Belarus. In the BSSR until 1986 the idea of progress in nuclear discourse dominated with an accent both on safety and on the victory of humankind over the atom. After the accident at Chernobyl until the 2000s an anti-nuclear discourse or elements of risk discourse in the use of nuclear energy dominated to a larger degree. During that period such decisions as abolition of the construction of a nuclear plant near Minsk and Vitebsk and the adoption of the ten year' moratorium on construction of any NPP were taken. Since 2006 the building of the NPP has marked a new stage in development of the nuclear discourse in Belarus. At this stage it is necessary to note the domination of the semantic frameworks based on the idea of energy independence with the accent on economic and social necessity and also on the safety of nuclear energy.

### 1.3. Presentation of main actors

Name/Title	Institutional/Formal/Informal Role	Actor Category
<b>Aksenov, Aleksandr</b>	Chairman of Council of Ministers of the BSSR, 1978-1983	Receptor
<b>Brezhnev, Leonid</b>	Secretary of the Central Committee of the Communist Party, 1964-1982	Promoter
<b>Brovikov, Vladimir</b>	Chairman of Council of Ministers of the BSSR, 1983-1986	Receptor

<b>Burnazian, Avetik</b>	Vice Minister of Health, State Sanitary Doctor of the USSR, 1956-1981	Promoter
<b>Firisanov, Leonid</b>	Vice Chairman of Council of Ministers of the BSSR (1984)	Receptor
<b>Gorbachev, Michail</b>	Secretary of the Central Committee of the Communist Party, 1985-1991	Promoter
<b>Gvozdev, Viktor</b>	Head of the Gosplan of the BSSR, Chairman of the Commission on the nuclear developments in the BSSR (1978-1982)	Receptor
<b>Hartanovich, Georgy</b>	Head of the Belglavenergo, 1969-1991	Receptor
<b>Kamchatny, Anatoly</b>	Major engineer Kola NPP	Receptor
<b>Kebich, Viacheslav</b>	Head of the Gosplan of the BSSR, 1985-1990	Receptor
<b>Kenigsberg, Yakov</b>	Vice-Director of the Institute of the Radioactive Medicine within the Ministry of Health (1998) Head of the National Commission for Radiation Protection under the Council of Ministers of the Republic of Belarus (2001-2009)	Promoter
<b>Kosygin, Alexey</b>	Chairman of Council of Ministers of USSR, 1964-1980	Promoter
<b>Kovalev, Michail</b>	Vice Chairman of Council of Ministers of the BSSR (1978-1984) Chairman of Council of Ministers of the BSSR (1986-1990)	Receptor
<b>Lepin, Georgii</b>	Professor, HDR in technical sciences	Receptor
<b>Ling, Serguei</b>	Prime Minister of the Republic of Belarus (1996-2000)	Receptor
<b>Lukashenko, Aleksandr</b>	President of the Republic of Belarus	Promoter
<b>Lukonin, Nikolai</b>	Minister of Atomic Energy of the USSR (1986-1989)	Promoter
<b>Majorets, Anatoly</b>	Minister of Energy of the USSR (1985-1989)	Promoter
<b>Martynenko, Oleg</b>	Director of the Institute of Heat- and Mass-Exchange of the Belarusian Academy of Sciences (1988-2003)	Promoter
<b>Masherov, Piotr</b>	1 <sup>st</sup> Secretary of the Central Committee of the Communist Party of the BSSR (1965-1980)	Receptor
<b>Mihakevich, Aliaksandr</b>	Member of the NAS, Director of the Energy Institute	Promoter
<b>Neporojnj, Piotr</b>	Minister of Energy of the USSR, (1962-1985)	Promoter
<b>Nesterenko, Vasily</b>	Member of the NAS, Director of the Institute "BelRad"	Receptor
<b>Reut, Anatoly</b>	Head of the Gosplan of the BSSR, Chairman of the Commission on the nuclear developments in the	Receptor



	BSSR (1983-1985)	
<b>Ryzhkov, Nikolai</b>	Chairman of Council of Ministers (1985-1991)	Promoter
<b>Sadovsky, Stanislav</b>	Vice Minister of Energy of the USSR (1984-1990)	Promoter
<b>Semionov, Nikolaj</b>	Vice Minister of SredMash (1971-1982)	Regulator, promoter
<b>Serov, Valery</b>	Vice director of the Gosplan of the USSR (1988-1991)	Regulator
<b>Shamanovsky V.</b>	Chief of the Construction site of the Minsk NTPP	Regulator
<b>Shcherbina, Boris</b>	Vice Chairman of the Council of Ministers of the USSR (1984-1989)	Promoter
<b>Slavskii, Efim</b>	The Ministry of Medium Machine-Building Industry of the USSR (1957-1986)	Regulator, promoter
<b>Slivyak, Vladimir</b>	Co-chair for Russian NGO "Ecodefense"	Activist
<b>Smolar, Ivan</b>	Member of the International Academy of Ecology, Member of the Commission on nuclear developments (1998)	Activist
<b>Solomentsev, Mikhail</b>	Chairman of the Communist Party Control Committee, (1983-1988)	Regulator
<b>Sukhij, Iryna</b>	Leader of the NGO "Ecohome"	Activist
<b>Tikhonov, Nikolai</b>	Chairman of Council of Ministers of USSR (1980-1985)	Promoter
<b>Vitiyaz, Piotr</b>	Academic of the NAS, Chief of the Commission on nuclear developments (1998)	Promoter

## 2. Showcase: Nuclear attitudes and governance in post-Chernobyl contexts

People who argue for the construction of nuclear power stations in Belarus stress strategic objectives: first the country's energy security and second the potential to export electricity. The long-term process of building the plant can mark both the end of one policy period, post-Chernobyl, and the beginning of a new one – the period of the civilian nuclear program. The most important goal for an authoritarian regime may be the capacity to translate a resource, whatever its origins, in this case nuclear power, into support for a strong and capable state that is able to realize such a modern project and enter the ranks of countries with nuclear technology.

According to opponents of nuclear power in Belarus, President Lukashenko needs his own nuclear power plant to fulfil his political ambitions. For example, Georgii Lepin says that after the withdrawal of nuclear weapons and announcement of Belarus a nuclear-free territory, “President Lukashenko wants to return nuclear power to the country to have it not much as additional source of energy but as a source of [political] power.”<sup>3</sup> This nostalgia for nuclear power, of course, can be examined within decision-making in an authoritarian regime where nuclear power as an energy source can be considered both a resource of political authority and of political power. However, the personal political ambitions of the authoritarian leader are not sufficient to explain this decision. The decision is also based on a long-term strategy from a country disastrously affected by Chernobyl to a country developing a nuclear program.

### Public opinion discourses

As, the project for nuclear power successfully moves ahead and public actors are mobilized to participate in the implementation of the most ambitious state project in Belarus today involving the construction of not only a new NPP, but also a new semantic and symbolic space. Such extensive promotion of nuclear power by this variety of public actors has led to an increase in public support for nuclear power over the past 20 years.

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<sup>3</sup> The interview with Lepin Georgii, professor, expert in nuclear programs, 04.07.2016, Minsk.

Surveys	Pro-nuclear	Anti-nuclear
1995, Institute of Sociology, Institute of the Problems in Energetics of the NAS <i>“What do you think about the idea of the construction of the NPP in Belarus?”</i>	40.9%	39.0%
<i>“What do you think about the construction of an NPP near your house?”</i>	Minsk 24.7% Gomel reg. 25.2% Mogulev reg. 24.2% Brest reg. 13.8% Vitebsk reg. 22.8%	39.8% 53.3% 45.8% 55.9% 50%
2005, Institute of Sociology <i>Is it necessary to develop nuclear energy in Belarus?</i>	28.3%	47.7%
2008, Institute of Sociology <i>Is it necessary to develop nuclear energy in Belarus?</i>	54.8%	23%
2010, Institute of Sociology <i>Is it necessary to develop nuclear energy in Belarus?</i>	57.8%	19.6%

Sources: Mikhalevich, 2010

Various surveys highlight diverging opinions among Belarusians regarding the necessity of nuclear power. According to a multi-centre study of public opinion held in Belarus by the Institute of Sociology, the attitude to the development of nuclear power has changed: “There have been qualitative changes in the public attitude to the development of the national nuclear program: the number of supporters of the development has doubled from 28.3% in 2005 to 54.8% in 2008; two thirds of respondents expressed confidence that NPP construction will improve the state of the fuel and energy complex of the country, and increase the competitive power of Belarusian commodities and services; 75.5% express readiness to support NPP construction given the safety conditions, competitive selection and international examination of the project are provided and observed” (Institute of Sociology, 2008: 120).

However, this survey doesn't provide data regarding the public attitude toward the proposed NPP, while data from the national survey of the Independent Institute of Social-Economic and Political Studies (IISEPS) demonstrates essentially an equal share of respondents who disapprove of the government's decision to start construction - 42.1% in March 2008 and 40.2% in June 2008 - and

those who support the decision - 37.4% in March 2008 and 37.8% in June 2008<sup>4</sup>. These reflections of public opinion illustrate the challenges of determining attitudes toward nuclear power in Belarus, and of the sociological framing and representation of problems related to the construction of new NPPs.

For example, in the study of the Institute of Sociology of the NASB, the favourability of the public to nuclear power is a general question, while IISEPS treats the issue as a purely political decision. It should also be pointed out that the Institute of Sociology study avoided certain words and phrases, concerned that they would be affect the survey's response. In instructions the survey designers recommend not to use any concepts related to Chernobyl: "By the way, the expression '30km Zone' came into common use after the accident on the Chernobyl NPP and evokes negative psychological associations. Although it is being mentioned in some IAEA records, it would be rational for us not to use it during an awareness-raising work with the population" (The Institute of Sociology, 2008: 110).

The Institute of Sociology survey held in August and September 1995 and in February 1996 reflected a balanced public attitude to the nuclear power use (Babosov 1996). In particular, 40.9% respondents replied in positive to the question if the project of the NPP construction should be accepted in Belarus, 39% replied negatively, and 19% were undecided (Babosov 1996:105). It should be pointed out that this result coincided with the period of the 10th anniversary of the disaster and resumption of debate over NPP construction. Public attitudes to the NPP construction in Belarus in 1996 were coupled with public attitudes concerning the disastrous impact of Chernobyl on public health and the environment. In particular, in this survey the state of the environment came third in a list of problems that caused concern amongst the majority of the respondents. Over fifty-five per cent of the respondents residing in the regions affected by Chernobyl noted problems associated with a deterioration in health first, decline in family earnings second, and lack of clean and safe products last (Babosov 1996: 102). They often worried about the safety of NPPs. For instance, more than 75.8% of respondents believed it necessary to pay much more attention to the safety of operation not only at the Chernobyl NPP, but also at other NPPs

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<sup>4</sup> According to the data of national opinion surveys held by IISEPS in March 2008, page 6, and in June 2008, page 9, <http://www.iiseps.org/poll08.html> (20.04.2016). The question was posed as follows: The government of the country took a final decision to construct a nuclear power plant in Belarus. What is your attitude to such a decision?

located around Belarus. The reasons for this concern included risks to health inflicted by NPPs as compared to other processing facilities (28%), the risk of illnesses and environmental crises (21.6%), and third, the potential of harm to the environment as compared to other industrial facilities (17.1%) (Babosov 1996:104).

In 2005, when asked if a nuclear power program should be developed in Belarus (Zaborovski 2009: 131), 28.3% responded positively, and in 2006 the number remained almost unchanged (28.8%). However, in 2008 the number rose sharply to 54.8%, with a sharp decline in the negative from 46.7% in 2005 to 23% in 2008. In 2010 57% responded positively and 19.6% negatively. The share of those undecided remained approximately the same at all times – only dropping from 25% in 2005 to 22.5% in 2010. This suggests that there is a certain correlation between the group of supporters and opponents of the nuclear power in Belarus, and the percentage ratio is generally divided among them, while the group of 'the undecided' remains stable.

An important variable in the comparison of the structure of public opinion toward nuclear power in 1996 and 2010 is the general sociological context of public opinion framing. This refers to the articulation and classification of questions asked during the survey. In 1996-2005 public attitudes to nuclear power engineering were studied in conjunction with public attitudes to the impact of Chernobyl - 46% of the surveyed in 2005 still associated nuclear power engineering largely with dangers and risks. At the same time, the dangers and risks were related to the disastrous impact of the accident, not the technical characteristics of the actual reactors (Zaborovski 2009: 87).

In the late 2000s any connotations of Chernobyl disappeared from the structure of the national opinion surveys conducted by state institutions, while questions related to potential sources of financing for the NPP, the availability of material and technological expertise in Belarus, and the rise of the competitive power of Belarusian commodities resulting from NPP construction replaced them. This methodological discrepancy is not accidental. It actually highlights the specific ways in which surveys were carried out in Belarus, but also the strategies behind them that manifest themselves in decoupling of new reactor construction from Chernobyl, and in the attempt to legitimize the already-taken decision on the construction of new NPPs. While in 1995-1996 this entailed only the possibility of new NPPs, in the late 2000s it related to the possibility of producing nuclear power with all its benefits (and risks).

### **Nuclear governance discourse**

The basic argument of official discourse legitimating nuclear energy in Belarus is safety discourse, including energy safety. This discourse actively uses arguments about the political independence of the country and also arguments of probable risk based on the notion that nuclear power is safe and will help promote energy and political independence. During the session of the Security Council on 15 January, 2008 when the decision about the NPP construction was taken, the President Lukashenko announced: "Today we put the basis of the functioning of the Belarusian state in the conditions when the global problem of depletion of stocks of fossil fuels becomes critical...I think that future generations will assess our decision. (...) Our problem is to find a unique and true variant where Belarus will manage to reduce the risks to the minimum in a way to profit from all the advantages of its own nuclear power plant. (...) This energy enterprise has the great value for us, all questions connected with it are important, because they concern the safety of the population, and not only in our country. There are about five hundred of such stations already constructed on the planet, therefore there is nothing extreme in building a nuclear power plant in Belarus - the experience of construction of such objects already exists in the world" (Lukashenko, 15.01.2008).

During a memorial meeting at Komarin on April 26, 2009, Lukashenko announced Chernobyl policy with the decision to construct a nuclear power plant. He declared that Belarus had entered a new stage of Chernobyl policy - the development of the affected territories. The idea of revival and restoration of the former way of life in these regions was (and is) actively used in Lukashenko's discourse. Nevertheless in the context of the new policy paradigm of revival of the territories the health of the population remains the priority, illustrating that life in the affected territories after Chernobyl is possible. At the same time, state officials abandoned past categorizations of affected populations to show there was no place for post-Chernobyl social distinctions and that such groupings as "the resettled" and "liquidators" would disappear. These changes in Chernobyl policy became a major line in political discourse intended to permit the advance of nuclear power in Belarus (see the table below).

Institutional changes in Chernobyl policy and in Lukashenko's discourse are revealed in two patterns. First, the government changed how it distributed post-Chernobyl financial resources and altered the nature of the program to ensure the "restoration of those regions" in keeping with the

idea of revival of the territories that were hit by the disaster. Secondly, the government liquidated Goskomchernobyl, the bureaucracy responsible for dealing with the consequences of Chernobyl within the Ministry of Emergencies. The disappearance of this unique political structure testifies to the clear strategy of eliminating many of the official signs of the Chernobyl disaster.

Yet elements of risk discourse remained in the new Chernobyl policy in concerns about the safety of the population during the revival of the territories: “Question number one will be the safety of our citizens. If you see where it is possible to plough, plough. But it is necessary to strengthen the control over the food produced” (Lukashenko, 26.04.2009).

Patterns	Samples	Sources
<b>Life after Chernobyl</b>	“In Braghin (one of the “suffered” regions) more people are born than die already, which testifies that the life in the given region is improving”	Memorial meeting at Komarin on April 26, 2009
<b>Chernobyl policy</b>	“The main goal is transition from rehabilitation to development of the territories affected with obligatory preservation of all the necessary measures of radiation protection of the population”	Memorial meeting at Komarin on April 26, 2009
<b>Social groups</b>	“Without forgetting the tragedy of Chernobyl, we have ceased to divide people into Chernobyl people and not. From this year we start to revive the contaminated territories promptly”	Memorial meeting at Komarin on April 26, 2009
<b>Institutional changes</b>	“Nothing will go on until we liquidate the department within the Ministry of Emergencies and we submit those questions (of Chernobyl disaster recovering) to governors at the local level”	Memorial meeting at Komarin on April 26, 2009
<b>Revival of the Chernobyl territories</b>	“Now it is important not simply to minimize the consequences of Chernobyl but also to create normal industrial conditions and conditions of life so that people can be sure of tomorrow”	Memorial meeting at Komarin on April 26, 2009

The decisions about NPP construction and Chernobyl policy changes began the official campaign to promote nuclear energy in Belarus. If in the ‘90s and the early 2000s public attitude to nuclear power was divided between the opponents and supporters of nuclear energy, the late 2000s witnessed an increasing number of pro-nuclear attitudes. The strategy of managing public relations and propaganda was affirmed on November 1, 2008 by Vladimir Semashko, first deputy prime-minister of Belarus and required the framing of public opinion, with specific attention paid to

readjusting opinions from negative to positive. As part of this strategy a number of special promotional documents were elaborated and published.

The Joint Institute for Power and Nuclear Research prepared materials such as, “The Current State of the World Nuclear Power Engineering: Facts and Figures” that were disseminated among all regional government councils (executive committees). For example, the instructions to the Vitebsk regional executive committee indicated that this information was meant 'for use while organizing common days of awareness-building, meetings of awareness-raising and propaganda groups with personnel and the public on the issues of nuclear power<sup>5</sup>.

This document, “The Current State of the World Nuclear Power Engineering: Facts and Figures,” presented a general picture of the development of nuclear power engineering in Europe, the USA and Japan. In it specialists discussed the reaction of different countries and governments to the Fukushima accident in order to demonstrate that Fukushima did not lead to nuclear phase-out in most countries. It does not contain a single word on Chernobyl or its incredible impact. Regarding Fukushima, the document doesn't mention either the causes or the impact on health and environment. Such practices of public outreach and shaping of public opinion can be observed in other materials of this kind. The nuclear industry has prepared a series of publications that are related either to the issues of the development of nuclear power engineering generally or directly to plant construction in Belarus.

In *FAQ on Belarusian NPP* (Minsk, 2009) or Vasily Gigevich's *The Stipulation of the Construction of the NPP in Belarus* (Minsk, 2009) there is no direct mention of the word Chernobyl or any other nuclear accident, except for the cryptic mention that “after 1986 requirements for NPPs became much more stringent.” In *Construction of the NPP in Belarus: Economic Viability, Safety, Environmental Impact* by Nikolai Gapanovich-Kaydalov (Gomel, 2012) presents a special rhetoric tool - 'a myth' - namely, the debunking of conventional myths about atoms for peace: 'nuclear myths'. Here the term 'myth' is used to highlight the distinction between the 'real facts' of the nuclear energy industry and the fears that nuclear energy produces. In this way the debate about NPP construction in Belarus is rechanneled into the sphere of symbolic cooperation, the fight for the right to nominate or determine what is true and false, rather than political struggle.

<sup>5</sup> <http://www.novopolotsk.by/attach/informat/IPG-47-29.pdf>



In *Nuclear Power Engineering. Perspectives for Belarus* Academician Alexandr Mikhalevich provides a detailed assessment of the development of nuclear power, dedicating only a small part to the Fukushima accident and ignoring Chernobyl and its consequences. In fact, Fukushima is considered to be a result of passive safety systems alone. 'Safety systems' are a significant part of nuclear discourse in Belarus, directed primarily at maintaining the image not so much of the safety of the NPP operation, as of 'credible hazards' which can be easily prevented.

It is possible to claim that Fukushima is a substitute for "Chernobyl" in the discourse of the supporters of the NPP construction in Belarus: 'lessons from Chernobyl' became 'lessons from Fukushima'<sup>6</sup> and there are several reasons for this. First is the tendency to switch attention of the public opinion to issues of safety of NPP operation generally and away from the issues of NPP engineering and construction. That helps to promote the idea of construction of the NPP among populations as a safe process. Also, the proximity of the nuclear facilities plays an important role in this rhetorical substitution. While the Chernobyl NPP was situated 20 km from the Ukraine-Belarus border, the Fukushima NPP is much farther away in distance, danger and time. Also, in spite of Fukushima Japan, did not phase out of nuclear power entirely. It is fair to assume that this discursive shift allows the disaster at the Chernobyl NPP to become a bygone event, replaced by another experience that is neither explicitly related to Belarus nor to its population and territory.

To prepare the population for the NPP construction as well as to define its place within decision-making and political structures, state officials established legal frameworks, namely the decree 'On certain measures related to the construction of a nuclear power plant'<sup>7</sup>, and the law 'On the uses of nuclear power.'<sup>8</sup> The institutional setting for nuclear governance was changed: the Department for Nuclear and Radiation Safety was founded in 200(?) to become the main supervision agency in the sphere of nuclear power engineering; whilst in 200(?), the Directorate of the Construction of the NPP was formed.

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<sup>6</sup> Mikhalevich, A.A. (2011) *Nuclear Power Engineering. Perspectives for Belarus*. [Atomnaya energetika. Perspektivy dlya Belarusi], Minsk. One of the chapters is called "Lessons From Fukushima".

<sup>7</sup> Decree of the President of the Republic of Belarus №565 "On certain measures related to the construction of the nuclear power plant" dd. November 12, 2007.

<sup>8</sup> The Law of the Republic of Belarus №426-3 "On the uses of the nuclear power" dd. July 30, 2008.

The Law 'On the uses of nuclear power' determines the system of relations among public institutions in the sphere of nuclear governance. This Law sets both functional framework, the range of public institutions that participate in nuclear policy, and a symbolic framework, namely the introduction and definition of notions related to nuclear power. It defines the terms and concepts that frame nuclear policy in Belarus. 'Nuclear material,' 'nuclear facility,' 'nuclear reactor', and 'nuclear plant' are for the first time defined in Belarusian legal documents. As well as the conditions which influence decision-making regarding the construction of the nuclear facility, (art. 14). These include economic, social need, civic safety and environmental safety - which are the conditions that are meant to be the base for the political decision on the construction, operation and decommissioning of nuclear facilities. It is to be recalled that the decision on the construction of the nuclear power plant was taken half a year before the law defining given conditions was passed. Before having passed this law, neither the conditions, nor the main terms were in any way legally defined.

Thus, with this Law the use of nuclear power attains not only the new regulatory domain, but also a separate, independent field of legal, political and social relationships that is shaping a new regulatory and institutional regime which is intentionally un-related to Chernobyl.

The nuclear governance narrative actively uses the 'Chernobyl syndrome' narrative to reject citizens' complaints and anti-nuclear claims (Novikau 2017). This discursive element appeared with the first post-Chernobyl studies of public attitude to NPP construction. Evgeny Babosov, one of the sociologists who conducted a survey in the '90s, writes: "The persistent distrust of the majority of the population of Belarus (39%) to nuclear power is conditioned primarily by the 'Chernobyl syndrome'- the fear of a recurring tragedy similar to one that happened 10 years ago at the Chernobyl NPP" (Babosov 1996: 109). The same argument is used in 2008 by Jakov Kenigsberg, head of the National Commission on Radiation Protection, after the government decision to construct the new NPP: "The construction of the NPP is a sensitive issue in every country, and in Belarus the matters are made worse by the Chernobyl syndrome<sup>9</sup>." He also uses separation between the 'construction' and 'utilization' of the nuclear facility: "There is no risk in construction

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<sup>9</sup> "Ministry of Information: Belarus Needs Awareness Promotion on Nuclear Power", available at <http://news.tut.by/113553.html>, 24.07.2016.

until the fuel is delivered, until the preparation to launching and the operation of the plant begins. (...) Provided regular operation of the plant, there shouldn't be any overexposures."<sup>10</sup> At the level of a symbolic meaning, there is hardly any difference between taking a political decision to construct a NPP and its launch. Their semantic frames are identical since the political decision on the construction implies both launching the NPP and its operation and utilization. This separation between the 'construction' and 'utilization' of the nuclear facility represents a rhetorical tool directed primarily at the creation and reinforcement of an image of safety– the hazard comes not from the nuclear facilities or materials themselves, but from their uses and operation – and in Belarus the authorities are confident of safe operation.

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<sup>10</sup> Ibid.

### 3. Events

#### **Critical view to the selection process of the five events:**

#### **Event 1: The Resolution of the Central Committee of the CPSS and of the Council of Ministers of the USSR, 26 June 1980, on the construction of the Nuclear Thermal Power Plant (NTPP) near Minsk**

The resolution of the Central Committee to construct a NTPP near Minsk marked the official start of the nuclear program in the Belorussian Soviet Republic. According to the general Soviet plan, this nuclear unit and another NPP on Belorussian territory would complete the network of the Soviet reactors in the western USSR along with the Chernobyl NPP, Smolensk NPP, Ignalina NPP and Leningrad NPP. The preparation and construction of the Minsk NTPP illustrated all the tensions and controversies within nuclear decision-making and governance during the last decade of the USSR's existence.

#### **Event 2: The adoption of the Requirements for the placement of the Nuclear Power Plants (22 October 1987)**

Before the accident at the Chernobyl NPP there was no legal framework for nuclear programs in the USSR, especially regarding requirements for the selection of sites for reactors. Such a document appeared only in October 1987 – after Chernobyl; the law clearly defined the role of local institutions in nuclear decision-making and enabled the opportunity for scientific mobilization against the pressure of the central scientific and administrative institutions.

#### **Event 3: “Framework for residing on the territories contaminated with radionuclides as a result of the disaster at the Chernobyl NPP” approved by the Presidium of the Belorussian Academy of Sciences in 1990**

The adoption of this Framework regulating the radiation limits for residing on contaminated areas after Chernobyl was part of a debate about intervention measures between scientists and politicians who supported a 35-rem limit and those opposed to it. Those who supported it believed that life in a contaminated area with a 35-rem limit is safe and those who opposed it believed that the limit should be considerably lower. This debate reveals that controversies existed among scientists

about life after Chernobyl and underlines the cleavages among pro- and anti-nuclear politicians and scientists in a discourse over “radiophobia” and “Chernobyl syndrome”.

**Event 4: The Commission on the Assessment of the Advisability of Nuclear Power Development in the Republic of Belarus (July 1st – December 30 1998)**

The work of this Commission in the 1990s, after the collapse of the USSR, and during debates about revival of the nuclear program in Belarus after Chernobyl, reproduces the more or less strict cleavages between promoters and opponents to nuclear energy among citizens, scientists and politicians, and activists. The establishment of the Commission is the last example of the relatively collaborative form of nuclear decision-making which existed shortly after independence. Ten years later, following the recommendation of the Commission, the nuclear program in Belarus restarted in 2008, this time without any open participatory forms of engagement.

**Event 5: Public hearings of the "Review of Study of Environmental Impacts of the Belarusian nuclear power station" (October 9, 2009)**

This event shows how difficult and controversial it has been for society to participate in dialogue with the state about nuclear energy in a non-democratic regime. The launching of the nuclear program in 2008 was exclusively a political decision. The necessary technology assessment, discussions and debates, public consultations and deliberations came later after the political decision had been taken. The public hearings were used to legitimate the NPP construction and did not contribute to better nuclear governance and had no ability to influence decisions which had already been taken. This event led to the emergence of local, grassroots anti-nuclear mobilization as well as national and transnational actors in an anti-nuclear campaign.

**3.1. Event 1: The Resolution of the Central Committee of the CPSS and of the Council of Ministers of the USSR, 26 June 1980, on the construction of the Nuclear Thermal Power Plant (NTPP) near Minsk**

The preparation and planning for the NTPP at the beginning of the 1980s was slowed by institutional disagreement and tensions in the Soviet decision-making process. Soviet nuclear policy was implemented through a vertical and centralized system of decision-making (see Russia SCR, Lithuania SCR). The central state body responsible for nuclear innovations, investigation, construction and control was the Ministry of Medium Machine Building (Sredmash). The Ministry of Energy was responsible for the construction of reactors after they had been approved and standardized by Minsredmash. Rivalry developed between these two ministries over the control of nuclear production. On top of this rivalry, the republican governments were kept out of nuclear decision-making; republican voices seldom were taken into account. This kind of exclusion created tension between the republics and Moscow.

Construction of the Minsk NTPP started in 1982, according to the decision of the Central Committee of the CPSU and the USSR Council of Ministers, with two VVER-1000 PWRs at 1 million kilowatts of nuclear capacity each and 1,990 Giga calories of thermal capacity per hour. If we look at the communication of the central and local governmental bodies during this period<sup>11</sup> we will see that the tensions between decision makers occurred on two levels: between the Ministry of Energy and the Ministry of Medium Machine building; and between the organizations subordinated to the Ministry of Energy and republican organizations subordinated to governmental body of the BSSR.

This two-level institutional rivalry over supervision of the nuclear projects created several problems for the ongoing construction work. According to a resolution "On measures to accelerate the construction of the nuclear thermal power station (NTPS)"<sup>12</sup> construction had deviated significantly from the initial terms. In 1984, after consultation with the Council of Ministers of the Belorussian SSR, the Ministry of Energy decided that qualified personnel from the Kola nuclear power plant should be relocated to the Minsk construction site. Yet this decision, once taken, did not speed up construction or mitigate problems. According to the minutes of the meeting with the Deputy Chairman of the Council of Ministers of the BSSR<sup>13</sup> the organization of construction had serious flaws, leading to omissions and significant delays. The site did not have complete design and technical documentation, nor requisite supplies and construction materials. In addition, there were

<sup>11</sup> Belarusian National Archives (BHA), f.7, o.5, d.8577, pp.48-52

<sup>12</sup> Belarusian National Archives (BHA), f.7, o.5, d.8577, p.80, 15.04.83 №134

<sup>13</sup> Belarusian National Archives (BHA), f.7, o.5, d.9171, pp... 25.05.1984

continuing funding problems,<sup>14</sup> a result of the institutional tensions between the Ministry of Energy and the republican organizations. An appeal by the Vice Director of the construction site to the Council of Ministers shows that the Ministry of Energy prioritised the construction carried out by its own subordinate organizations ahead of those by the republican organizations<sup>15</sup>.

In spite of these problems, central Soviet institutions planned another NPP in the BSSR. The first attempt took place in 1983 when the Central planning committee, GOSPLAN, asked the BSSR authorities to consider the expansion of the capacity of the NTPS under construction from 2,000 MW to 6,000 MW. The BSSR Commission for nuclear developments of the BSSR Council of Ministers instead proposed building a second NPP in an alternative location. In this case the Belarusian government proposed the construction of an experimental nuclear power station with a fast breeder reactor, the BRIG 300, which was developed in the Joint Institute of Nuclear Research.<sup>16</sup>

In 1984 the tensions between the central and republican bodies were symptomatic of existing energy and economic uncertainties. The BSSR government was concerned by decreasing energy supply and increasing energy demands from industrial sites. In this context the Minsk NTPP became imperative for the industrial development of the country. As construction problems mounted, deviations from plans and timeframes intensified this uncertainty and tensions with the Ministry of Energy. For example, GOSPLAN, under pressure from the Ministry of Energy decided to change the turbines to a newer more efficient design., which led to a three year delay in the expected completion of the first reactor from 1989 to 1992. Perceiving that the NTPP was vital for industrial development, the BSSR Council of Ministers made all efforts to reverse this decision<sup>17</sup>. The same logic was behind the initiative of the BSSR Council of Ministers<sup>18</sup> to renew debates about the expansion of the capacity of the Minsk NTPP in July 1985 because of the need to improve the productivity of the agriculture and to ensure the successful implementation of the Food Program.

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<sup>14</sup> The correspondence between Belenergo and Stroybank during June and July 1984, Belarusian National Archives (BHA), f.7, o.5, d.9171, pp. 69-79

<sup>15</sup> Belarusian National Archives (BHA), f.7, o.5, d.9171, pp.113, 10.08.1984

<sup>16</sup> Belarusian National Archives (BHA), f.7, o.5, d.8577, pp.107, 186

<sup>17</sup> Belarusian National Archives (BHA), f.7, o.5, d.9171, pp. 171-172

<sup>18</sup> Belarusian National Archives (BHA), f.7, o.5, d.9711, pp.46,51

By the end of 1985 construction lags were still endemic. On the 25th of November 1985 the Ministry of Energy and GOSPLAN decided to take additional measures to speed up the construction of the Minsk NTPP by allocating additional funds.<sup>19</sup> At the same time the Belorussian authorities raised serious concerns about delays in construction due to the issues with design and funding, pointing out that existing deadlines were strictly linked to the energy indicators of Minsk and its industrial sites.

The Belorussian authorities continued to exert pressure on the central government, particularly on the Ministry of Energy, to accelerate the decision-making process and the construction process, referring to the implementation of the tasks arising from the decisions of the CPSU Central Committee from June 28, 1984, and of the CPSU and the USSR Council of Ministers dated 21 September 1984, to ensure the accelerated development of nuclear energy. However, according to the Ministry of Energy of the USSR the choice of the construction site would be considered only after the approval of the feasibility study of the Belorussian nuclear power plant<sup>20</sup>.

In sum, before disaster of the Chernobyl, the Belorussian government saw nuclear power as a solution to the republic's forecast energy problems. Even after the accident, the government did not hesitate to continue the development of nuclear power. On the contrary, several decisions indicated the further promotion of nuclear power in Belarus. In particular, the decision of the Central Committee of the BSSR Communist Party, the Council of Ministers of the BSSR and the USSR Ministry of Energy signed on May, 26 1986, emphasized the special importance of the Minsk NTPP for the BSSR and for the successful implementation of the Soviet nuclear program<sup>21</sup>. In this context not only a series of measures to accelerate the construction of the NTPP were taken, including the introduction of personal responsibility for delays in construction, but the NTPP gained all the important ideological attributes of the Soviet industrial project: the Committee of the Communist Party pushed "socialist competitions" between teams working on the NTPP site, accelerated political education and instruction, and listed the site as a republican Komsomol construction site to attract more young people, while state media regularly reported about the progress of construction on the radio, TV and newspapers.

<sup>19</sup> Belorussian National Archives (БНА), f.7, o.5, d.9711, pp. 87-88

<sup>20</sup> Belorussian National Archives (БНА), f.7, o.10, d.352, pp. 2,6

<sup>21</sup> Belorussian National Archives (БНА), f.7, o.10, d.352, pp.130-134



Officially, the decision to suspend the construction of the Minsk NTPP was adopted by the Order of the Ministry of Atomic Energy of the USSR only at the end of 1986, and in 1987 the Soviet government authorized funds for the mothballing of the station<sup>22</sup>. During the first half of the 1986 the working brigades from the Minsk NTPP were sent to work on mitigation of the aftermath of Chernobyl, that is, to build the decontamination points in the affected Gomel areas, housing facilities for relocated people and new facilities in Slavutych.

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<sup>22</sup> Belarusian National Archives (БНА), f.7, o.10, d.352, pp.236

<b>Event 1</b>	
<b>The Resolution of the Central Committee of the CPSU and of the Council of Ministers on the construction of the Nuclear power thermal station near Minsk</b>	
<b>Who was involved?</b>	Political leaders, central and local political and administrative institutions
<b>When and where did it take place?</b>	22 June 1980
<b>What type of process was it? How did this change over time?</b>	Consultation. The construction of the Minsk NPP was a part of general Soviet planning and the expansion of the Soviet nuclear program. As in other Soviet republics, the participation of the local institutions in nuclear decision-making was limited by fragmented consultation. During the 1980's and before Chernobyl the preparation and construction illustrated the state of the economic and industrial system in decline as well as some institutional discrepancies between local and central political and scientific authorities.
<b>What rationale was given by the party that implemented the engagement?</b>	A nuclear rationale to improve the energy mix and its stability and secure future industrial development

### **3.2. Event 2: The adoption of the *Requirements for the placement of the Nuclear Power Plants (22 October 1987)***

The decision to suspend construction of the Minsk NTPP renewed the process of preparation for the location and construction of the Belorussian NPP. Documents for the design and construction of the station had been agreed to with GOSPLAN<sup>23</sup> and approved by the Soviet Ministry of Energy<sup>24</sup>. The launch of the first unit with a 1,000 MW capacity was planned for 1994. However, geological surveys planned for 1987 on site selection were never carried out. Republican authorities did not contribute to the organization of the surveys which made it difficult to move ahead (letter from Minatomenergo from 17.04.1987)<sup>25</sup>.

<sup>23</sup> Letter № 22-2057 from 23 December, 1985. Belarusian National Archives (БНА), f.7, o.10, d.859, p.99

<sup>24</sup> On 17 January, 1986. Belarusian National Archives (БНА), f.7, o.10, d.859, p.99

<sup>25</sup> Letter from Minatomenergo on 17 April, 1987. Belarusian National Archives (БНА), f.7, o.10, d.859, p.99

Debates regarding the location of the new NPP became possible in this post-Chernobyl period due to wide discussions over a draft law on nuclear energy in the USSR and due to the adoption of the *Requirements for the placement of Nuclear Power Plants* (22 October 1987)<sup>26</sup>. In June of 1987 the USSR State Committee on Science and Technology launched discussion of the draft law. The Belorussian authorities, in particular the Ministry of Justice, the State Planning Commission, Ministry of Health, the Academy of Sciences, Ministry of Internal Affairs and others examined the draft and commented on the document. The main focus of these comments was the competence of republican governmental bodies. They believed that siting the nuclear power plant, as well as the selection of territory and water resources, should fall under the jurisdiction of the USSR (Article 7, 21, part 2), not a national body acting with impunity. Based on the approved requirements for the placement of the NPP Belorussian authorities began to reconsider their initial choice of site.

On November 16, 1987, Boris Shcherbina, the Vice Chairman of the USSR Council of Ministers, decided to alter the program for nuclear power development in the USSR through to the year 2000. Following this decision and in order to promote NPP construction the central authorities began to pressure Soviet republics to implement nuclear programs. From September 1987 until the end of May 1988 we can observe tense relations between central governmental bodies and Belorussian experts. The core issue of the controversy was a question about the choice of location of the future NPP. The Belorussian authorities used a range of instruments available at the time to resist various sites. The Ministry of Atomic Energy insisted on a location near Seliava Lake, halfway between Minsk and Vitebsk, while the Belorussian government mobilized the academic and scientific community to elaborate a strong argument against the proposal. Over several months the Belorussian Republican Administration on Hydrometeorology and Environmental Control, the BSSR Geology Department, the Scientific Council on Biosphere Problems, Institute of Geochemistry and Geophysics sent recommendations to Moscow. According to these studies the NPP could not be sited near the lake for ecological, geological, medical and infrastructural reasons, including: high natural groundwater level; insufficient water resources in the area of the site to fulfil the cooling needs (transfer from other basins would cause additional economic and environmental costs); the risk of contaminating the Seliava; the lake's location on the watershed of the Baltic and the Black

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<sup>26</sup> Belarusian National Archives (БНА), f.7, o.10, d.859, pp.23-71//pp.109-123

Seas with an open communication along the rivers, which could contaminate both basins; being located only about 100 km away from Minsk, a city with population of more than 1 million people and only 40 km away from the Berezinsky nature Reserve<sup>27</sup>.

On May 26, 1988 under pressure from experts and political institutions the Ministry of Atomic Energy decided to relocate the NPP to *Yezeritche* in Vitebsk region, on the northern border with the Russian Federation; with construction scheduled to begin in 1990.

Nevertheless from October 1988, mainly in Vitebsk region, public mobilization against the construction of the nuclear power plant began and the first anti-nuclear publications appeared in the local press. Local enterprise workers used Communist Party organs to voice their anti-nuclear concerns. For example, at a Party meeting at the Vitebsk TV Manufacturing Plant on October 14 and 15, 1988: "The entire staff of the enterprise expresses its protest against the construction of the nuclear power plant in the Vitebsk region."<sup>28</sup> At a meeting of the Vitebsk Technological Institute of Light Industry the concerns addressed by the Vitebsk TV plant were widely supported.<sup>29</sup>

In part due increasing perestroika these particular acts escalated a mobilization campaign across the USSR. In Belarus press publications increased, as did a direct appeal of Vitebsk residents to Gorbachev signed by 252 people.<sup>30</sup> This anti-nuclear appeal was supported by local government bodies and transmitted to Moscow to stop geological works in the Vitebsk region for the following reasons: the consequences of the Chernobyl accident; the large number of existing nuclear power plants around the BSSR (Ignalina NPP, Smolensk NPP, Chernobyl NPP); the fear of further radioactive contamination of the territory; and difficult environmental conditions caused by large-scale chemical enterprises.<sup>31</sup>

Taking into account public opinion, the Communist Party of the Belorussian SSR and the Council of Ministers of the BSSR determined that the Vitebsk site was also geologically unsound. In October

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<sup>27</sup> Belarusian National Archives (БНА), f.7, o.10, d.1317, pp.10-88

<sup>28</sup> Belarusian National Archives (БНА), f.7, o.10, d.1317, p.97

<sup>29</sup> Belarusian National Archives (БНА), f.7, o.10, d.1317, p.98

<sup>30</sup> Belarusian National Archives (БНА), f.7, o.10, d.1317, p.103-108

<sup>31</sup> Belarusian National Archives (БНА), f.7, o.10, d.1317, p.113

1989 the Belorussian Council of Ministers took the final decision to reject nuclear power for the republic because of the Chernobyl accident and its consequences for the territory of Belarus.<sup>32</sup>

<b>Event 2</b>		<b>The adoption of the Requirements for the placement of the Nuclear Power Plants</b>	
<b>Who was involved?</b>		Political leaders, central and local political, administrative and scientific institutions	
<b>When and where did it take place?</b>		22 October 1987	
<b>What type of process was it? How did this change over time?</b>		Communication. The adoption of the “Requirements” falls into the period just after the accident occurred at the Chernobyl NPP when official information about its consequences was not fully revealed by Soviet authorities. To the adoption of this Act preceded the wide communication of the central administrative institutions with the local actors, including scientific institutions. The introduction of this Act allowed to the Belorussian scientists to mobilize and to address their expert conclusions against the NPP to central nuclear authorities.	
<b>What rationale was given by the party that implemented the engagement?</b>		Evidence-based scientific rationale	

### **3.3. Event 3: “Framework for residing on the territories contaminated with radionuclides as a result of the disaster at the Chernobyl NPP” approved by the Presidium of the Belorussian Academy of Sciences in 1990**

At the end of the 1990s debates about Chernobyl’s impact on the environment and human health had broken out within the scientific community in discussions between the Soviet Academy of Sciences and the Belorussian Academy of Sciences (Kuchinskaya 2013). These discussions concerned the concept of the acceptable risk of radiation, political decisions about the additional measures for the resettlement of the irradiated population, and the introduction of new categories of contaminated areas – zones.

This dispute is illustrated in two scientific concepts: that of a 35-rem maximum dose<sup>33</sup> promoted by Soviet scientists and, that of the difficulty of residing on territories contaminated with radionuclides

<sup>32</sup> Belarussian National Archives (БНА), f.7, o.10, d.1317, p.146-147

supported by Belorussian scientists. These two opposite scientific discourses indicated not only the potential for contention within the academic community at the end of 1980s but also established the fundamental contradiction of views between promoters and opponents of nuclear power in Belarus.

From April 1986 scientists from the Academy of Sciences of the BSSR tried to alert the republican authorities of the need to take the accident more seriously and to adopt urgent special measures for the protection of the population. After hearing about the explosion, Vassiliy Nesterenko, director of the Institute of Nuclear Energy of the Academy of Sciences of Belarus, contacted the First Secretary of the Belarusian Communist Party, Nikolai Slioukov, with unsuccessful demands for the immediate evacuation of the population living in the vicinity of the NPP and of the distribution of iodine. Nesterenko communicated information about the accident at Chernobyl to the Belorussian writer, Ales Adamovich, who told Mikhail Gorbachev, who created a Special Commission to study the situation in the BSSR. This action cost Nesterenko his position as Director of the Joint Institute of Nuclear Research and convinced other Belarusian scientists not to express their disagreements openly but instead to share information about the nuclear accident with writers, journalists, and members of informal organizations, a number of whom became members of the Belarusian Popular Front, a growing political movement.

By 1989, more open debates about the effectiveness of post-accident management by the Soviet authorities became possible after the relaxation of censorship. Some Belarusian scientists provided expert opinions to challenge the radiation protection standards introduced by Moscow in the aftermath of the accident that they considered arbitrary and dangerous (Kasperski 2011). These researchers participated in seminars, conferences and rallies organized by the Belarusian Popular Front. The elements of the scientific argument became part of the protest rhetoric against the Soviet authorities generally and its post-accident policy particularly.

Moscow experts argued that it was safe to have a 35-rem dose limit for 70 years of life for all post-accident response measures. They concluded that below this threshold the population could live on contaminated territories without restrictions. The scientists from the Academy of Sciences of the BSSR seriously criticized this limit since residents could not live safely in areas where clean food

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<sup>33</sup> The maximum dose of 35 rem is composed from the assumption that the individual can live on the contaminated territory if the annual radiation exposure do not exceed 0.5 rem per year during 70 years.

could not be obtained, i.e., not contaminated by radionuclides, and suggested that the maximum dose should be limited to 7 rem over a 70 year life, i.e. 0.1 rem per year.

	The 35-rem Discourse (Moscow)	Alternative Discourse (Belarus)
Statement	<p>"It is important to remember that there exist elementary bases and positions according to which a measure of dangerous radiation impact is not the concentration of radionuclides. I would underline that it is the total dose of irradiation".<sup>34</sup></p>	<p>"Any, even the smallest additional radiation dose, is not safe for a life organism and it requires the using of measures aimed at its reduction (this is an internationally recognized principle of ALARA). So we cannot speak about an absolute safety. We should speak about an acceptable risk."<sup>35</sup></p>
Evidence	<p>"The base of the 35-rem concept is the analysis of a huge volume of material. (...) I declare with full responsibility that obvious changes arise only when the dose is from 35 rem per year or 75-120 rem per life. There were no deviations found at lower doses. We cannot reject this experience. It is an objective reality".<sup>36</sup></p> <p>"I have been examining the children as a paediatrician since the very first days of the disaster. Neither me, nor my colleagues managed to find any direct impact of small radiation doses on a child's organism which could lead to serious consequences. Data about a sharp increase in the number of illnesses is a manipulation of facts".<sup>37</sup></p>	<p>"...the limit of irradiation which cannot exceed 0.1 rem (1 mSv) per year. The identified limit of irradiation should be reached step-by-step: in 1991 0.5 rem (5 mSv) per year; in 1993 0.3 rem (3 mSv) per year; in 1995 0.2 rem (2 mSv) per year; in 1998 0.1 rem (1 mSv) per year."</p> <p>The conception of residing on the territories contaminated with radionuclides as a result of the disaster at the Chernobyl NPP approved by the Presidium of the Academy of Sciences of the BSSR in 1990</p>

The discourse for the concept of a "35 rem" limit is that of risk and nuclear safety expressed in the following way: the effect of radiation on a human body and the environment finds its expression not in the concentration of radionuclides but in the received irradiation dose. This principle assumes

<sup>34</sup> Interview of A.L. Ilyin "Radiatsija: chto bylo, chto budet" (Gomelskaja Pravda. 13.04.1989. S.3).

<sup>35</sup> The concept of safe living, 1990.

<sup>36</sup> Interview of A.L. Ilyin "Chernobyl i budushchee" (Chyrvonaja zmena. 12.08.1989. s.7).

<sup>37</sup> Interview of A. Guskova, a corresponding member of the Academy of Medical Sciences of the USSR (Chyrvonaja Zmena.12.07.1989).

that the main danger of residing on the contaminated territories lies in the total irradiation dose of a person rather than the concentration of radionuclides in a body, food, and territory. If one is to follow this principle then it is possible to live in contaminated areas if the total irradiation dose does not exceed the established norm. This conception was in part created to legitimate political decisions which had already been taken about the safety of living in contaminated areas without a dramatic change in the population's way of life. In addition, this conception supported the notion that the consequences of Chernobyl can be mitigated within a certain period of time and thus made Chernobyl an ordinary accident which did not lead to significant change. According to Yaroshinskaya, "They have probably run out of scientific methods in the struggle for the preservation of their conception. That is why the main argument used was the government administrative pressure" (Yaroshinskaya, 2006, p.160).

A governmental decree (no. 587) of the National Commission on Liquidation of Consequences of the Disaster at the Chernobyl NPP promoted the limit of "35 rem" as established by the Academy of Sciences of the USSR and promoted using it as the basis for the development of the State Program for the liquidation/mitigation of Chernobyl consequences. This produced another obvious benefit for the existing political system: it did not require any noticeable changes in the established normative political and ideological order. Its implication was actually the rejection of certain intervention measures, the discontinuance of re-settlement, and continuance of agricultural activities in the contaminated territories.

However, the Supreme Council of the BSSR rejected the 35-rem standard owing largely to the resistance of scientists from Belarus, Ukraine and Russia, in particular, after the First All-Union Radiobiological Congress in 1990 where this issue was widely discussed. Only during the second half of 1990 the government of the USSR formed an inter-departmental commission consisting of 60 people headed by Belyaev, the academician of the Academy of Sciences of the USSR. The main aim of the commission was to work out "principles and criteria in support of practical measures aimed at the elimination of potential negative consequences of the Chernobyl accident for the health of the population and compensation for the damage caused" (Barjahtar, 1995.). In 1991 the government of the USSR approved a new "Concept of residing of the population in the regions affected by the Disaster at the Chernobyl NPP". In accordance with this concept the minimum



intervention level equal to 1 mSv of the annual average effective equivalent irradiation dose was set for all territories that were radioactively contaminated. Protection measures were taken if the interval of doses was from 1 mSv to 5 mSv per year and dwellers had the right to a voluntary relocation from this territory (see table below).

Zones	Categorization
<b>zone of evacuation</b>	The zone of resettlement in 1986 surrounding the territory of the CNPP
<b>zone of mandatory resettlement</b>	The territory with the density of soil contamination with caesium-137, strontium-90 and plutonium of 40.3 and 0.1 Ci/sq km accordingly
<b>zone of resettlement</b>	The territory with the density of soil contamination with caesium-137, strontium-90 and plutonium from 15 to 40 and from 2 to 3 and from 0.05 to 0.1 Ci/sq km where the irradiation dose of a human can exceed 0.5 rem (5 mSv) per year
<b>zone with the right of resettlement</b>	The territory with the density of soil contamination with caesium-137, strontium-90 and plutonium from 5 to 15, from 0.5 to 2 and from 0.01 to 0.05 Ci/sq km where the permissible level of population irradiation exceeds 0.1 rem (1 mSv) per year
<b>zone of living under periodical control</b>	The territory with the density of soil contamination with caesium-137 from 1 to 5 Ci/sq km while the permissible irradiation level cannot exceed 0.1 rem (.1 mSv) per year

The Belarusian concept turned into a political challenge for the Soviet system. The Belarusian standard was based on the belief that any, even the smallest radiation dose, affects the health of a person and second that a step-by-step re-settlement of the population from the contaminated areas was required. To support the first principle the scientists introduced the term “acceptable risk” which challenged the principle of absolute safety of the exploitation of nuclear energy along with the principle a threshold below which there was no risk to health. This discussion can be also viewed in debates over the consequences of the Fukushima incident in Japan, and controversy over resettlement policies, and acceptable dose limits, revealing almost exactly the same questions about standards of living and radioactive protection in the contaminated areas.

**Event 3** “Framework of residing on the territories contaminated with radionuclides as a result of the disaster at the Chernobyl NPP” approved by the Presidium of the Belorussian Academy of Sciences in 1990

**Who was involved?** USSR Academy of Sciences, BSSR Academy of Sciences, central and local Political Authorities

**When and where did it take place?** 1990

**What type of process was it? How did this change over time?** Participation. This kind of participation in post-nuclear decision-making became possible due to the local scientific and political opposition to central political decisions about the radiation limit of the residents of contaminated areas after Chernobyl. This pressure could only be exerted due to the reduction of central political control and censorship by the USSR.

**What rationale was given by the party that implemented the engagement?** Use of scientific evidence for political rationale.

### 3.4. Event 4: The Commission on the Assessment of the Advisability of Nuclear Power Development in the Republic of Belarus (July 1<sup>st</sup> – December 30, 1998)

The Commission on the Assessment of the Advisability of Nuclear Power Development in the Republic of Belarus began work on July 1, 1998. The formation of this Commission by the order of the Prime Minister in March demonstrated that existing debates about the future of the energy programs in Belarus within civil society, academic community, politicians and nuclear industry promoters remained in flux and that post-Chernobyl uncertainties and risks continued to cloud the future of nuclear energy. The work of the Commission illustrated a case of surprising transparency over nuclear issues in an authoritarian regime where opposing opinions were presented and articulated and the recommendations and decisions were independently mediated.

The work of the Commission concerned not only an analysis of the prospects for nuclear programs in Belarus within the global context, but also analysis of alternative energy sources.<sup>38</sup> The

<sup>38</sup> Belarusian National Archives, f.7, o.16, d.1082, pp. 51

composition of the Commission illustrated this wider context of the nuclear energy issues: it was led by the academician Piotr Vitiyaz, Vice-President of the NASB with representatives of the Ministry of Economy, National Assembly, Ministry of Emergency, Ministry of Environment and representatives of the scientific community (mostly the Institutes of the NASB) and of civil society.

After detailed discussion of the primary materials during an October 1998 meeting a working group on nuclear power developments led by Professor Oleg Martynenko, Director of the Institute of Heat and Mass-Exchange of the Belarusian Academy of Sciences, was created. Most of the members of the group supported the nuclear program, but members such as Ivan Smolar, Vasily Nesterenko, and Georgii Lepin actively opposed it and convinced the others that NPP construction was premature.<sup>39</sup> As a result of the Commission's work a 10-year moratorium on the construction of any nuclear facilities in Belarus was suggested.

The moratorium was supported by nineteen members of the Commission, with only seven against the suggestion. Despite this recommendation the Commission did not recommend the abandonment of civil nuclear energy, but left the door open as a prerogative of the Government and President of the Republic of Belarus. This prerogative was used exactly 10 years after, in 2008 to begin a new programme of NPP construction in Belarus.

Nuclear Rationale used in 1998	Recommendations
<p>- In spite of specific problems connected with nuclear reactors, nuclear fuel handling, the consequences of accidents, the replacement of one NPP with another, the development of infrastructure, and the training of specialists, the actual contribution of nuclear power into energy production was significant and in 1997 was 16.4% of world energy production.</p>	<p>- To use to the maximum existing resources for the implementation of energy-saving technologies, use of alternative energy sources, modernization and construction of steam-and-gas plants.                      - To block the construction of a NPP for the next 10 years but to continue preparation for the development of nuclear power in the Republic of Belarus in the future.</p>
<p>- Some countries had either banned nuclear power or announced a moratorium for construction of new nuclear power plants (Austria, Denmark, Ireland, Spain, Italy, and Sweden). Canada, the UK, and Germany had no plans for new nuclear power plants.</p>	<p>- To continue to study the world experience in nuclear power issues (including radioactive waste disposal and decommissioning of NPPs), carry out further techno-economic analyses of structural changes in the energy system, taking into account techno-economic aspects of the</p>

<sup>39</sup> The interview with Lepin Georgii, professor, expert in nuclear programs, 04.07.2016, Minsk.

	possible development of nuclear power, and encourage the development of regulations.
<p>- In 1998, 437 nuclear reactors with total capacity of 3,517 MWt were in operation; while 90 units with total capacity of 25,140 MWt had been decommissioned, and 36 plants with total capacity of 26,813 MWt were under construction. The following countries were included in a list of states with the highest quota of nuclear power in total electricity generation: Lithuania (81%), France (78%), Belgium (60%), Ukraine (47%), Bulgaria (46%), Sweden (46%), and Slovakia (45%).</p>	<p>- Taking into account technical, environmental, social, economic prerequisites, safety indicators and preparedness of the necessary developmental works, the terms of nuclear power plant construction must be determined by the government of Belarus within the framework of fulfilment of the instructions of the President on review and revision of the main directions of energy policy.</p>
<p>- Programs for new NPPs were in progress in the US, France, Japan, China, Korea, India, Argentina, Brazil, the Czech Republic, Iran, Russia, Slovakia and Ukraine.</p>	<p>- In order to ensure the possible development of nuclear power and the protection of the population, it is recommended to the Council of Ministers of the Republic of Belarus with the aid of the National Academy of Sciences and Ministry of Emergencies develop and introduce for consideration by the chamber of representatives of the National Assembly of Belarus a draft law "On Nuclear Power Use".</p>

Source: <http://www.ecologia.org/nuclearcommunities/countryevals/belarus/commission.htm>

This decision is one of the few if not the only case where scientific debates and expert assessments had such a direct impact on Belarusian policy-making. It can be assumed that such a decision was made possible due to the fact that the authoritarian regime in Belarus had not yet consolidated its power. But when the decision to build a nuclear power plant in Belarus was made by the President in 2008, there were no discussions on alternative projects within the civil or scientific community.

<b>Event 4</b>		<b>The Commission on the Assessment of the Advisability of Nuclear Power Development in the Republic of Belarus</b>	
<b>Who was involved?</b>		Experts and political, administrative personnel involved in the established Commission	
<b>When and where did it take place?</b>		July 1, 1998 – December 30, 1998	
<b>What type of process was it? How did this change over time?</b>		Participation. The Commission dealt with the revival of the debate about the necessity of a nuclear program for independent Belarus and was composed of representatives of the scientific community and civil society. This was the last example of cooperation between official promoters of nuclear energy and their opponents. The Commission recommended the abandonment of the construction of nuclear facilities for 10 years in 1998. In 2008 the nuclear program was launched.	
<b>What rationale was given by the party that implemented the engagement?</b>		Nuclear risks and uncertainties after Chernobyl.	

### 3.5. Event 5: Public hearings of the "Review of Study of Environmental Impacts of the Belarusian nuclear power station" (October 9, 2009)

Belarus a signatory to the sections of the Aarhus and Espoo conventions which require public opinion (including that of neighbouring countries) is taken into account when policy decisions of environmental significance take place. However in an un-democratic state, decisions in the field of nuclear energy are a subject of debate and public environmental risk assessment only after they are taken by the government. This makes the opportunities for public intervention very limited.

By the end of 2009 plans for the Belarusian nuclear power plant had still not yet passed through the technology assessment process. On the one hand, this left a window of opportunity for public participation. On the other hand, the public hearings of the NPP as an accepted political decision do not contribute to better nuclear governance and do not improve the conditions for public participation.

In autumn 2008, the Department of Energy announced plans to locate an NPP in Ostrovets, Grodno region, and in December the same year the State Commission indicated this decision was a priority.

Moving quickly to co-opt the public, in spring 2009 the government adopted “Regulations on the order of discussion by the associations, organizations and citizens of the questions in the field of nuclear energy”<sup>40</sup>, that authorized public discussion of policy decisions already taken by the government. This created a parallel process of expert technology assessment and public deliberation: from one side official institutions organized a process of public debates and from the other side NGOs attempted to create a platform for an alternative discussion.

In 2006 with publications in media about the possible renewal of the nuclear program in Belarus, the NGO “Ecohome” addressed a letter to the Ministry of Energy with the suggestions to organize public discussions about the proposed program. In response to this letter the Ministry of Energy suggested that “Ecohome” participated in the campaign promoting nuclear energy in a Belarusian society where the “Chernobyl syndrome” was still active.<sup>41</sup>

The same year that “Ecohome” organized a protest against the proposed NPP they also initiated the creation of the “Belarusian anti-nuclear campaign” comprising a number of representatives of civil society and the scientific community in Belarus and abroad. Then the acts of the anti-nuclear campaign were followed by declarations in the media for consolidation, for organization of a referendum and for the collection of signatures of citizens opposed to the program. For example, “Ecohome” and the Belarusian Party of Greens made a joint declaration on November 19, 2009, against the NPP and also the lack of public discussion<sup>42</sup>. Then, as the government announced the state of progress in 2010, anti-nuclear campaigns multiplied and acquired a more grassroots character that complemented expert and NGO mobilization, especially in areas close to the planned NPP. A key strategy was the collection of citizen signatures against the construction of nuclear power. By autumn 2009 a group in the Goretzky region had collected nearly 4,000 signatures, in Ostrovetsky—350, and in Vitebsk—4000 (Novikova 2010).

The main mobilization activities concentrated on establishing the public hearings and discussions, which were a condition of the Aarhus and Espoo Conventions. The conventions stipulated that in any decision related to the development of a nuclear power plant that the public had the right to get

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<sup>40</sup> Adopted by the decision № 571 of Council of Ministers 4 May, 2009.

<sup>41</sup> The interview with Iryna Sukhij, leader of the NGO “Ecohome”, 6 July, 2016, Minsk.

<sup>42</sup> See: <http://atomby.net/file/position191109after091009enql.pdf>, accessed April 4, 2016.

comprehensive information and to participate in decision making procedures. However, Belarus was found to consistently fail to comply with the provisions of these conventions from 2010 onwards<sup>43</sup>, as well as falling behind with the requirement of cross-boundary environmental impact assessment procedures with regards to Lithuania, owing to the proximity of the NPP – only 15 kilometres – from the border<sup>44</sup>.

In 2009, a preliminary Environmental Impact Statement (EIS) was published. In August and September 2009 the international group "EcoDefense", the NGO "Ecohome", the Belarusian Green Party and a group of experts prepared their Critical Remarks on the "Statement on possible environmental impact of Belarusian NPP (preview report on EIS of Belarusian NPP)" and initiated a broad discussion on this paper. On October 9, 2009, in Ostrovets public hearings were organized to discuss these documents and other relevant materials. However, limited participation by the public and environmental activists led the the European ECO Forum, the network of Environmental Citizen's Organizations throughout Europe, to submit a statement to the Compliance Committee of the Aarhus Convention concerning their opinion that Belarusians had no opportunity to participate or to express their opinions about the political decision to develop nuclear programs and about the siting NPPs. Later in 2010 "Ecohome" with the international expert commission launched a process of public ecological assessment. The Table below

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<sup>43</sup> During the fifth meeting of the parties to the Aarhus Convention concerning a submission to the compliance committee the convention members recommended that Belarus should ensure the compatibility and consistency of the general legal framework for public participation in decision-making (general legislation on EIA) and the framework of its participation in the decision-making on nuclear projects. As a result of the fifth session Belarus developed an action plan to implement the provisions of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in matters relating to the environment for 2014-2017. Nevertheless from 2014 to 2016 several appeals were addressed to the Compliance Committee of the Aarhus Convention. For example in March 2015 the Republic of Lithuania has submitted the claim in respect of compliance with the Republic of Belarus of article 3, paragraph 9 of the Aarhus Convention concerning the access to the information and participation in the decision-making in the field of the environmental protection.

<sup>44</sup> See: [http://www.unece.org/fileadmin/DAM/env/pp/compliance/MoP4decisions/Belarus/frLithuania\\_19.03.2014.pdf](http://www.unece.org/fileadmin/DAM/env/pp/compliance/MoP4decisions/Belarus/frLithuania_19.03.2014.pdf), accessed April 5, 2016.

presents the core of the anti-nuclear rhetoric through the main documents elaborated and published by the “Belarusian anti-nuclear campaign”.

Documents	Remarks
<p>Critical remarks on “Statement on possible environmental impact of Belarusian NPP (preview report on EIA of Belarusian NPP)” 21.09.2009  <b>Actors:</b> Belarusian Party “Greens”                      Group “EcoDefense”                      Movement “Scientists for anti-nuclear Belarus” “Ecohome”</p>	<ul style="list-style-type: none"> <li>- Radioactive emissions in case of an accident, the zones of its impact, and radiation exposure are underestimated.</li> <li>- Lack of information about the impact of an accident on Lithuania and Belarus.</li> <li>- Reasons for the choice of an AES 2006 reactor are not articulated.</li> <li>- Impact of decommissioning is not evaluated.</li> <li>- Lack of information about safety issues of nuclear waste repository.</li> <li>- Public opinion is not taken into account.</li> <li>- Lack of information about impact on natural, cultural and heritage landscapes.</li> </ul>
<p>Conclusions of the Public Ecological Assessment Commission about the project of the NPP construction in Belarus                      21.05.2010  <b>Actors:</b> “Ecohome”                      Expert Commission</p>	<ul style="list-style-type: none"> <li>- NPP construction in Belarus is not totally justified: the current trends in the world of energy are overestimated; no tendency to increase in energy demand; the costs for adapting the energy system of Belarus to a new large-scale power-generating unit are not taken into account.</li> <li>- Construction of the NPP is economically unreasonable. The estimated cost of nuclear energy does not include expenses for dealing with spent nuclear fuel, including those for radioactive waste as a by-product of so-called “nuclear recycling”.</li> <li>- Legal framework for nuclear program implementation is not set up: questions of legitimacy are not solved; the regulatory regime is not established including the management of radioactive waste.</li> <li>- Lack of information about the technological choice for VVER type reactors: the reactor type – a so-called “water-pressurized” reactor - that is being proposed for implementation, is not considered to be sufficiently safe, regardless of “generation”.</li> <li>- Possible impact on environment and human health of the given project is not acceptable.</li> <li>- Selection of the site is unfortunate. The site proposed for the NPP is not acceptable, since it is situated in the in a place with unique natural, historical and cultural heritage. This region is a recreational area for residents of Belarus.</li> <li>- The NPP will not help Belarus in meeting the requirements of the Kyoto Protocol.</li> </ul>
<p>Position of the public concerning the course of public discussion on plans to build NPP in Belarus                      16.11.2009  <b>Actors:</b>                      Belarusian Party “Greens”                      Group “EcoDefense”                      NGO “EcoHome”</p>	<ul style="list-style-type: none"> <li>- Public hearings could not be qualified as public hearings but as a meeting of the supporters and promoters of the NPP construction: very limited access of participants; limited registration procedure; non-compliance with agenda; no announcements in central media.</li> <li>- The replacement of the documents about the environmental impact (Art. 21 of the Instructions about evaluation of the environmental impact).</li> <li>- The beginning of the construction of the nuclear infrastructure before the ecological assessment starts.</li> </ul>



Sources: Official site of the Belarusian Anti-nuclear Campaign <http://atomby.net/>

The double process of assessment and public deliberation was not a successful one: instead of cooperation this situation generated additional tensions between government bodies and civic institutions. Failure of public participation happens even in democratic conditions (see the France SCR). With the authoritarian regime in power, quite simply, civil nuclear decision-making in Belarus had become more and more closed with the goal of limiting and constraining public participation.

**Event 5** **Public hearings of the "Review of Study of Environmental Impacts of the Belarusian nuclear power station"**

**Who was involved?** Belarusian Party "Greens", "EcoDefense", Movement "Scientists for anti-nuclear Belarus", NGO "EcoHome"

**When and where did it take place?** Ostrovets, October 9, 2009

**What type of process was it? How did this change over time?** Consultation. Public hearings of the "Review of Study of Environmental Impacts of the Belarusian nuclear power station" held October 9, 2009 after the decision on its construction has been taken year before. This form of consultation was far from the participatory process and was limited by political qualities of the Belarusian regime. Nevertheless the public hearings and the way that it has been organized allowed to start the public awareness campaign about NPP among population and neighbouring country as well as to organize the ecological assessment procedure of the Belarusian NPP.

**What rationale was given by the party that implemented the engagement?** Impact of the civilian nuclear use on the environment and population.

## 4. Facts & Figures

The purpose of this section is to give an overview of nuclear power in Belarus. This section contains such data as number of reactors, reactors' locations, technical and chronological details of reactors' construction as well as statistics on electricity production, periodization and social connections to nuclear constructions. This data can be used as a supportive material to the following sections of the country report and in order to understand the overall country's situation. Key dates and abbreviations used in this report are presented in the beginning of this section.

### 4.1. Data summary

In November 2007 a Presidential decree defined the organizations responsible for preparing for the construction of the country's first nuclear power plant and budgeted money for engineering and site selection.

The candidate sites were Krasnopoljansk and Kukshinovsk (both in the Mogilev region) and Ostrovets in the Grodno region. Ostrovets/Astravets, 23 km from the Lithuanian border and 55 km from Vilnius, was chosen in December 2008, despite protests from Lithuania.

Three nuclear power stations are planned to be constructed in this region covering three countries and an enclosed Russian region: the Baltic NPP (near Kaliningrad), the NPP in Ostrovetsk (Belarus) and the NPP in Visaginas (Lithuania).

The distance between the Baltic NPP and two others is almost equal – about 300 km. If we look closely at the nuclear map of the region, placing Belarus in the centre, we will see that the region is circled by the range of the RBMK (high power channel-type) reactors still working or turned off: in the northern part – in Russia the old fashioned reactors at the Leningrad NPP and two new designed reactors are under construction, in Lithuania the decommissioned Ignalina NPP; in the Eastern part – in Russia the Smolensk NPP; in the southern part – in Ukraine the disastrous Chernobyl reactors.

This territory is marked by the second attempt to re-map the nuclear geographies. The first one dated back to the 1980 when the soviet government announced the ambitious plans to construct

the Western European line of the RBMK reactors. The Ignalina NPP in Lithuania was the last one before the plan was interrupted by the Chernobyl.

The current projects of NPP construction almost reproduce the Soviet plans with the NPPs in Belarus and transform nuclear landscapes by creating the new nuclear networks and trajectories in post-Soviet contexts.

The state-run Belnapienergoprom enterprise was responsible for negotiating and signing contracts, carrying out feasibility studies and preparing tender documents. In June 2009 the government announced that Russian Atomstroyexport would be the general contractor.

Despite the process of public hearings and consultations with neighbouring countries officially started in 2009, the choice of the site and the process of the construction itself is challenged by anti-nuclear campaign in Belarus and by Lithuanian authorities.

## 4.2. Key dates and abbreviations

### Key dates:

- |             |   |
|-------------|---|
| <b>1967</b> | The creation of the first Governmental commission on nuclear development  |
| <b>1980</b> | The Resolution of the Central Committee about the construction of the NTPP near Minsk   |
| <b>1982</b> | The start of the building of the Minsk NTPP   |
| <b>1986</b> | The Chernobyl accident  |
| <b>1987</b> | The adoption of the <i>Requirements for the placement of the Nuclear Power Plants</i>   |
| <b>1989</b> | The Soviet Council of Ministers decided to stop construction of the Minsk NTPP. The Byelorussian Council of Ministers took a final decision about nuclear power in the BSSR |
| <b>1990</b> | “Conception of residing on the territories contaminated with radionuclides as a result of the disaster at the Chernobyl NPP” adopted  |
| <b>1992</b> | The government of Belarus adopted and approved the Program of Energy Development and Energy Supply by 2010.   |
| <b>1993</b> | The draft Program of Nuclear Power Development in Belarus was developed   |

- 1998** The Commission on the Assessment of the Advisability of Nuclear Power Development in the Republic of Belarus advises a 10 year moratorium
- 2005** Decree № 399 "On energy security and strengthening the energy independence of the Republic of Belarus 2006-2010"
- 2006** President of Belarus approved in its entirety the proposals of the National Academy of Sciences and the Belarusian government on building a nuclear power plant
- 2007** Directive № 3 "Economy and savings as major factors in the economic security of the state "
- Decree № 565 "On some measures for the construction of nuclear power plant"
- 2008** At the meeting of the Security Council of Belarus chaired by Lukashenko a final political decision on the construction of nuclear power plant was taken.
- The Law on the Use of Atomic Energy had adopted
- 2009** "Regulations on the order of discussion by the associations, organizations and citizens of the questions in the field of nuclear energy" has adopted
- In Ostrovets public hearings were organized to discuss the statements on the possible environmental impact of the NPP and the impact assessment materials.
- 2010** The public environmental expertise for the proposed construction of the Belarusian nuclear power plant was held.
- 2011** The Nuclear Power Engineering Department of the Energy Ministry submitted an application for a construction license
- 2012** The Power Plant Construction Directorate, and a general construction contract was signed
- 2013** Construction of the first unit started
- 2014** Construction of unit 2 started, the full construction license was issued

**Abbreviations:**

- BSSR** Belorussian Soviet Socialist Republic
- EBRD** European Bank for Reconstruction and Development
- EIA** Environmental Impact Assessment
- IAEA** International Atomic Energy Agency
- IRT** Research nuclear reactor

<b>mSv</b>	Sievert, micro Sievert
<b>MWe</b>	Megawatt electrical
<b>NGO</b>	Non-Governmental Organization
<b>NPP</b>	Nuclear Power Plant
<b>NTPP</b>	Nuclear Thermal Power Plant
<b>RBMK</b>	High-power channel reactor - Chernobyl type ( <i>reaktor bolshoy moshchnosty kanalny</i> )
<b>Rem</b>	roentgen equivalent man
<b>SredMash</b>	Ministry of Medium Machine Building
<b>USSR</b>	Union of Soviet Socialist Republics
<b>VVER</b>	Water-Water Energetic Reactor
<b>WNA</b>	World Nuclear Association

### 4.3. Map of nuclear power plants

Nuclear Power Plant Under Construction in Belarus



Figure 1 – Planned Nuclear power plant in Belarus

#### 4.4. List of reactors and technical, chronological details

Table below shows the list of reactors, suppliers, operators as well as date details.

**Table 1 – projected nuclear power reactors**

	Reactor	MWe gross	Start construction	Start operation	Commercial operation
<b>Ostrovets 1</b>	VVER-1200/491	1,194 (1,109 net)	Nov 2013	mid-2019 (planned)	end 2019 (planned)
<b>Ostrovets 2</b>	VVER-1200/491	1,194 (1,109 net)	May 2014	mid-2020 (planned)	late 2020 (planned)
<b>Total</b>		<b>2,388</b>			

Operation of the first unit of the Ostrovets plant is scheduled for November 2018 and the second unit in July 2020, to give 2,340 MWe net on line.

Sources:

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