PATRYCJA NOWAKOWSKA

Legal Mechanisms Influencing the Scalability (Measurability) of Nuclear Liability Risk for Operators within the Polish Legal Framework

Abstract

The liability risk for nuclear damage in the economic activity of nuclear power plant operation is a significant and costly risk that must be considered, even though the probability of its occurrence is very low. However, it is undoubtedly a significant factor influencing the decision to carry out this type of activity, significantly affecting its costs and, ultimately, the cost of the electricity produced. Liability for nuclear damage is one of the most far-reaching liability regimes in Polish law. The entire set of mandatory regulations at both the domestic and international levels influences the delineation of risk boundaries. In addition, there are optional legal tools that allow operators to further mitigate risks. The aim of this paper is to analyze selected legal institutions that positively impact the measurability of risk from the operator's point of view. Based on the arguments presented, this article demonstrates how selected mechanisms specific to the nuclear damage liability regime, along with other optional instruments, positively impact the operator's ability to define risk boundaries. This paper argues that the Polish legal order contains mechanisms that allow for the scaling of this risk—even though this liability is generally considered absolute, it is not unlimited. The paper also formulates *de lege ferenda* postulates to improve and clarify the legal situation of the operator, particularly regarding nuclear damage claims regulations.

KEY WORDS: nuclear law, Atomic Law, nuclear damage, liability for nuclear damage, Vienna Convention

PATRYCJA NOWAKOWSKA – MA in law, ORCID – 0009-0009-6082-9025, e-mail: patrycja.nowakowska@kkg.pl

HTTPS://DOI.ORG/10.36128/PRIW.VI53.1008

1 Introduction

In recent years, we have observed a significant acceleration in the pace of events related to the implementation of planned Polish investments in nuclear energy. Domestic investment regulations are undergoing their first practical test. Not only is the project for the first nuclear power plant in Pomerania reaching successive milestones but other ventures, including those involving private capital like, for example, SMRs, are also obtaining key decisions. As history shows, one of the many significant challenges faced by nuclear energy law has been the issue of civil liability for nuclear damage and the inadequacy of general civil law rules in this regard[1]. In light of actual Polish investment activities that have now moved beyond the planning stage, investors are facing questions about the scale of risk associated with liability for nuclear damage, as well as how to assess and factor this risk into their business activities.

The realization of a nuclear power plant investment, followed by its operation, is a unique undertaking. On the one hand, it is a highly capital-intensive and fraught with significant investment risk[2]. On the other hand, at every stage of its lifecycle – from the drawing board to decommissioning – it is subject to an extremely restrictive regulatory environment. The legal risk of liability for nuclear damage is an example of a risk unique to this type of activity. Moreover, it is one of the most expensive and serious risks that must be considered in this economic venture. However, the probability of its occurrence is very low, partly due to the reactors' inherent safety features, continuous technological advancements in this area, and strict regulatory oversight. Initially, it must be stated that the Polish legal system provides legal mechanisms to scale this risk of the operator – although it is generally accepted that this liability is absolute, it is not unlimited. The entire complex of mandatory regulations at the statutory and conventional levels influence the delineation of risk boundaries. Furthermore, there are optional legal instruments that allow for additional risk management. Nevertheless, there is also room for legislative changes to provide greater legal certainty for the operator without compromising the interests of the

1 International Atomic Energy Agency, The 1997 Vienna Convention on Civil Liability for Nuclear Damage and the 1997 Convention on Supplementary Compensation for Nuclear Damage – Explanatory Texts, IAEA International Law Series No. 3 (Revised), (Vienna 2020).

2 See Tomasz R. Nowacki, „Nuclear Power on the Vistula River: Law and Policy in Shaping Energy Future of Poland" *Prawo i Więź*, No. 3 (2020): 197.

victims. After all, laws are the primary tool for shaping a safe environment for this economic activity, both during the investment phase itself[3] and during its operation.

The aim of this article is to analyse selected legal institutions that have a particularly positive impact on the measurability of the discussed risk from the perspective of the operator. Based on the presented arguments, the author demonstrates how mechanisms specific to the nuclear damage liability regime, such as the channelling of liability, the principle of a quantitative limitation of liability, and the principle of compulsory financial security, positively influence the ability to define risk boundaries for the operator. An additional safeguard for the operator is the state's guarantee liability to the extent that the insurer has not compensated for the damage. The principles of pursuing claims will also be analysed as a significant aspect of liability that potentially generates additional costs. In terms of facultative mechanisms, the right to contractually modify the scope of liability during the transport of nuclear materials and the right to reserve a right of recourse in contracts concluded with third parties (e.g., suppliers and contractors) will be discussed as institutions that the operator can use to further shape its legal situation to its advantage. The issue of structuring a corporate governance in the context of using the principle of channelling by shareholders – real investors – will also be addressed. Finally, in the aspect of nuclear damage claims regulations, the possibility of out-of-court dispute resolution will be considered in light of the applicable regulations as a mechanism that can positively influence the reduction of the costs of the claims settlement process.

2 The regulatory, economic, and technological context

At the international law level, two fundamental normative systems are named after the conventions that formed their basis. The Paris-Brussels system operates on the basis of the Paris Convention on Third Party Liability in the Field of Nuclear Energy of July 29, 1960, as amended by three Additional

3 See ibidem, 197.

Protocols, and the Brussels Convention of January 31, 1963, supplementary to the Paris Convention on Third Party Liability in the Field of Nuclear Energy, as amended by three Additional Protocols (hereinafter referred to as the Paris Convention). The Paris-Brussels system was established under the auspices of the Organization for Economic Co-operation and Development (OECD) and is open only to its member states[4].

In turn, the Vienna system is based on the Vienna Convention on Civil Liability for Nuclear Damage of May 21, 1963[5] and its amending Protocol of September 12, 1997. The Vienna system was established under the auspices of the International Atomic Energy Agency (IAEA) and is open to all states. The Vienna Convention and the Paris Convention are linked by a unique act: the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention on Third Party Liability in the Field of Nuclear Energy of September 21, 1988[6]. As an independent instrument of international law intended to form the foundation for a global system, also within the IAEA system, the Convention on Supplementary Compensation for Nuclear Damage, signed on September 12, 1997 (the CSC or Umbrella Convention), was concluded[7].

In the Polish legal system, civil liability for nuclear damage is governed by the provisions of the ratified international treaty – the Vienna Convention, its 1997 Amendment Protocol and the 1988 Joint Protocol and by statutory provisions. The planned Polish nuclear power plants will utilize foreign technologies and rely, to some extent, on foreign contractors and suppliers. Contracts may thus be governed by various legal systems. This could also potentially impact the legal position of the operator in the event of a nuclear incident. All of these circumstances must be taken into account when assessing the risk of the operation.

Both international regimes are, in simplified terms, based on the same principles but differ in specific regulations:

a. Principle of channelling the liability: The operator of a nuclear installation bears sole liability for nuclear damage. Two aspects of directed liability are distinguished: legal (exclusive possibility of directing

4 See Radosław Majda, *Cywilna odpowiedzialność za szkodę jądrową w polskim prawie atomowym* (Łódź: Wydawnictwo Uniwersytetu Łódzkiego, 2006), 29.

5 Official Journal of Laws „Dziennik Ustaw" 1990, No. 63, item 370.

6 Official Journal of Laws „Dziennik Ustaw" 1994, No. 129, item 633.

7 INFCIRC IAEA – 567.

claims against the operator) and economic (formal possibility of directing claims against other entities, but the economic burden of liability is borne solely by the operator). The Conventions provide for the principle of legal channelling, and the pursuit of recourse claims against other entities (such as a supplier or contractor) is, as a rule, excluded and can only take place in strictly defined cases, e.g., when such a possibility is expressly provided for in a written contract or when the nuclear incident was caused intentionally. Economic channelling applies on the basis of domestic regulations in the US. Upon acceding to the CSC Convention, the United States availed itself of the "grandfather clause" rule, which allows for the retention of the principle of economic channelling within domestic regulations;

b. Limitation of the catalogue of circumstances exempting from civil liability to a minimum, also by excluding objective civil liability on general rules;
c. Liability for damages is based on the principle of risk; it takes the form of qualified liability – absolute liability: the injured party is not obliged to prove fault, which significantly simplifies the claims process;
d. Quantitative limitation of the operator's liability;
e. Time limitation of the operator's liability (mechanism of limitation and extinction of claims);
f. Obligation of financial security: the amount of security results from the provisions of the Conventions and national standards;
g. Exclusive jurisdiction of the courts of the state where the nuclear incident occurred and their applicable law: nuclear incidents may extend beyond the borders of the state of the installation. The advantage of this principle is that both the liable entity and the victims are subject to the legal order of one state;
h. A special (autonomous) civil liability regime applies only to personal injury and property damage caused by the release of ionising radiation as a result of a nuclear incident: this regime does not apply to the operator's own damage (occurring at the nuclear power plant or in the operator's infrastructure) or damage caused in its business

activities – general principles of tort and contract liability apply here[8].

As a rule, national provisions are introduced that do not conflict with the norms of the Convention. Most importantly, these provisions cannot reduce the rights of victims of nuclear damage to seek compensation below the minimum established by the Convention.

The above rules, also resulting from the Vienna Convention, are generally reflected in the Polish Act of November 29, 2000 – the Atomic Law[9].

3 Selected mechanisms derived from mandatory legal provisions

Some of the aforementioned specific principles of the nuclear damage liability regime have a significant bearing on defining the limits of the operator's risk. By deviating from general tort law, it becomes possible to establish quite clear boundaries for the operator's liability. This section will examine specific mechanisms that, according to the author, significantly influence these boundaries.

3.1. The channelling of the liability

To understand the norms that allow for scaling the risk of civil liability for nuclear damage, one must begin with the principle of channelling liability. This principle underpins all relationships within this regime. The Atomic Law implements this in Article 101(1). As a result of adopting this rule, the only entity liable for compensation is the operator, and any

8 See Julia A. Schwartz, „Liability and Compensation for third party damage resulting from a nuclear incident", [in:] *Principles and Practice of International Nuclear Law*, ed. Kimberly Sexton Nick, Stephen Burns (Paris: Nuclear Energy Agency OECD, 2022), 409–418.

9 Consolidated text as published in the Official Journal of Laws „Dziennik Ustaw" 2023, item 1173, 1890.

claim against any other entity (even if solely at fault) must be dismissed[10]. On the one hand, the principle of directed liability can be seen as a deterrent to conducting such business activities, since, in principle, all liability is concentrated on the operator with virtually no possibility of exemption by deriving the liability of other actually responsible entities according to general rules (e.g., technology suppliers, contractors). Indeed, the principle of channelling liability has its origins in the need to protect nuclear technology exporters at the dawn of the development of civil nuclear power in the 1950s and 1960s[11]. However, considering the other legal mechanisms discussed in this article, particularly the possibility of conducting such activities through a special purpose entity (i.e., a limited liability company), the actual investor[12] in a nuclear power plant can benefit from directed liability and, in a way, remove the risk of liability from their other business activities. This issue is inextricably linked to the mechanism of separate legal personality of capital companies, the corporate veil. The key is to properly structure the organization. This is particularly important for entities such as large corporate groups operating in multiple segments of the energy and fuel market. Such entities have been investing primarily in nuclear energy, and this trend is also visible in Poland. The author will return to the issue of the corporate veil later.

In a specific case, the primary issue is to determine the liable entity, which involves interpreting the term „operator" as used in Article 101(1) and (2) of the Atomic Law and decoding its logical scope, also from the perspective of identifying the entity obligated to hold compulsory insurance (Article 103(1) of the Atomic Law). This is not entirely intuitive, as it requires reference to several statutory definitions and a multi-step interpretation of the norms. Article 100 of the Atomic Law introduces a glossary of terms for the purposes of Chapter 12 of the Act, without excluding the application of other provisions of this Act that are not inconsistent with

10 See Majda, *Cywilna odpowiedzialność,* 127.

11 Evelyne Ameye, „Channelling of Nuclear Third Party Liability towards the Operator: Is it Sustainable in a Developing Nuclear World or is there a Need for Liability of Nuclear Architects and Engineers?" *European Energy and Environmental Law Review*, 1 (2010): 35.

12 It is difficult to legally define such an entity – we are talking about the real decision-maker, the initiator, but also the beneficiary of such an activity; in one situation it will be the parent company in a corporate group, in another several legal entities, if the investment is carried out, for example, by private entities and with the participation of state capital or, for example, with the capital participation of a technology supplier.

Chapter 12. According to Article 100(9) of the Atomic Law, the „operator" means the entity operating a nuclear installation. A nuclear installation is defined in Article 100(1) as: „(a) a nuclear reactor, except for a reactor used in marine or air transport as a power source or propulsion system, or for any other purpose; (b) an installation using nuclear fuel for the production of nuclear material or an installation for the processing of nuclear material, including an installation for the reprocessing of spent nuclear fuel; (c) an installation in which nuclear material is stored or disposed of, except for storage associated with the transport of such material".

Article 100 further defines nuclear reactor, nuclear fuel, and nuclear material.[13] Analysing these definitions leads to the conclusion that the most crucial element is determining the essence of operating a nuclear installation. This requires reference to Article 4(1)(2) in conjunction with Article 5(1) and (3) of the Atomic Law, which stipulates that the operation of a nuclear facility requires a permit issued by the nuclear regulatory body – the PAA President (pol. Prezes Państwowej Agencji Atomistyki). Moreover, Article 107(1) of the Atomic Law states that, in matters not regulated in this chapter, the provisions concerning nuclear facilities shall apply *mutatis mutandis* to nuclear installations. A systematic interpretation leads to the conclusion that, under Chapter 12, the operator is the holder of a permit for such activities. This interpretation is supported by the Vienna Convention. According to Article I.1.(c), an „operator" is "the person designated or recognized by the State of the Installation as the operator of that installation".

It is certainly possible to advocate for a more precise definition of „operator" in the Atomic Law for the purposes of applying the standards of Chapter 12. Such a legislative solution is employed in other European legal systems – for example, in the Slovak Act, „operator" is defined as an entity that has been granted a „license" by the competent authority on the

13 Article 100(2): „Nuclear reactor means a device containing nuclear fuel in a state in which a self-sustaining nuclear fission chain reaction can occur without an additional source of neutrons"; Article 100(3): „Nuclear fuel means a material that can produce energy through a self-sustaining nuclear fission chain reaction"; Article 100(4): „Nuclear material means: (a) nuclear fuel, except natural uranium or depleted uranium, which can produce energy through a self-sustaining nuclear fission chain reaction outside a nuclear reactor, either alone or in combination with other materials; (b) radioactive products or waste – radioactive material produced in the process of production or use of nuclear fuel or material that has become radioactive through irradiation in connection with this process, excluding radioactive isotopes that have reached the final stage of their production, so that they can be used for scientific, medical, agricultural, commercial or industrial purposes".

basis of relevant legal provisions[14]. However, this is a matter of legislative technique rather than a problem of a genuine gap in the law, as in practice, there should be no difficulty in identifying the responsible entity, including the one obligated to maintain compulsory insurance.

3.2. Quantitative limitation of liability

In a dogmatic manner, the principle of a quantitative limitation of liability complements the principle of channelling. It is the primary mechanism influencing the scalability of risk in conducting the economic activity of operating a nuclear power plant. The maximum amount of liability is predetermined by generally applicable law. It directly sets the quantitative upper limit of the operator's liability, thus serving as a mechanism balancing channelling and strict liability principles. In practice, a guarantee of its implementation as intended is its appropriate regulation in law.

The Atomic Law, following the provisions of the Vienna Convention, adopts a liability cap of SDR 300 million[15] (approximately EUR 366 million). To illustrate the scale of potential damages, it is worth noting that the amount paid to victims of the Fukushima incident currently exceeds EUR 65 billion[16]. Similarly, the cost of the Chernobyl incident is estimated (although with much less precision) at USD 100 billion[17].

Without going into details, the Vienna Convention, the Paris Convention (in conjunction with the Brussels Convention), and the CSC Convention differ in terms of their minimum liability limits, which are on the order of several hundred million euros, as opposed to billions. Even the liability limits provided for in the amended Paris Convention, in combination with

14 See Section 3 point 4(a) Act On Civil Liability for Nuclear Damage and on its Financial Coverage and on changes and amendments to certain laws dated on 19 march 2015: „Operator is a person to whom license was issued for commissioning, for operation, for the decommissioning phase of a nuclear installation, or for transport of radioactive materials according to special regulation except from license for operation of a repository".

15 Special Drawing Right of the International Monetary Fund, cf. Article 100(10) of the Atomic Law.

16 https://www.tepco.co.jp/en/hd/responsibility/revitalization/pdf/comp_result-e.pdf [accessed: 19.05.2024].

17 See Alain Quéré, „Challenges Facing the insurance industry since the modernisation of the international Nuclear third-party liability regime" *Nuclear Law Bulletin*, No. 94 (2014): 77.

supplementary compensation under the Brussels Convention or the CSC Convention, may not fully cover the damages in the event of a large-scale nuclear incident. Therefore, the quantitative limitation of the operator's liability is debatable from the perspective of the interests of the victims. It is argued that such a solution was desirable at the beginning of the development of nuclear technology as a means to support it.[18]. On the other hand, it is difficult to imagine any entity willing to invest in a nuclear power plant, given the prospect that the greatest risk of such an activity is in no way scalable, although examples of such regulations exist (e.g., Japan, Germany, Switzerland). In reality, however, the financial capacity of the operator is not infinite – the liability limit is determined by the maximum available assets of that entity, and when these are exhausted without additional support, for example, from the state, it will very quickly mean insolvency and the threat of bankruptcy. Such a risk, which is not even approximately defined, cannot be fully insured, and no entity on the market will provide security or insurance without specifying a specific maximum amount.

The issue of the upper limit of liability also arises in discussions concerning the legal framework for developing SMR projects. A reduction of the liability level of operators of such units, even below the conventional minimum, could be a form of support and serve as an incentive to invest in these projects, which are intended to contribute to achieving a carbon-neutral economy.

The Vienna Convention, pursuant to Article V.2, allows states to establish a lower limit of liability, taking into account the nature of the nuclear installation or the nuclear substances involved and to the likely consequences of an incident originating therefrom, but not less than SDR 5 million, provided that the state ensures the availability of public funds of SDR 300 million, which in practice means that it should guarantee the payment of funds in this amount. The economic burden is thus shifted to the state. Similarly, under the Paris Convention, it is permissible to establish a lower limit of liability for low-risk installations, subject to the same requirement of ensuring an adequate amount by the state (possibility of reducing from EUR 700 million to EUR 70 million). In both cases, these amounts are significantly lower than the basic limit under the Conventions, which directly impacts operating costs (e.g., the costs of establishing and maintaining insurance). Some studies suggest that SMRs, as safe installations with state-of-the-art safety systems, could be considered low-risk

18 Ibidem, 81.

installations[19], although this information is, of course, based solely on information provided by vendors seeking to support developing projects. However, the most advanced SMR projects on the path to commercial use are based on the same operating principles as previously known reactors, differing primarily in lower installed capacity (which in many cases does not translate into a smaller size of such an installation). This means that the risk of an incident occurring is essentially very similar to that of large-scale reactors and is just as unlikely.

Regarding the reduction of the liability limit for SMRs, it seems that currently, such a legislative solution in Poland, as a party to the Vienna Convention, would only be possible if the condition of a state guarantee is met. Poland has, to some extent, implemented this right in relation to research reactors (Article 103(7) of the Atomic Law), introducing preferential insurance conditions[20]: the sum insured for a research reactor or a nuclear installation in which nuclear material from such a reactor is stored or deposited, as well as for transport to and from such nuclear installations, cannot be less than SDR 400,000 or more than SDR 5 million. However, this is not a direct reduction of the liability limit.

The position of the operator would improve regardless of the technology for which a lower liability limit could be applied. The funds to cover claims would be guaranteed at the same level, except that this cost would be shifted to the state, and ultimately to the citizen. Such proposals should be assessed as attempts to find ways to support the development of SMRs within the existing regulatory framework in a given specific case of an individual project and its conditions rather than as real legislative demands to be applied to a whole group of very diverse projects at very different stages of development. The reduction of the liability limit should not be considered only because of the lower installed capacity, but primarily because of other specific characteristics of the installation in question. Moreover, this argument will lose its significance if several modules are installed in a given location, which will increase the total installed capacity of the installation. The emerging visible trend that a lower installed capacity entitles the application of lower regulatory requirements is not

19 Nuclear Energy Agency, *Small Modular Reactors: Challanges and Opportunities* (2021), 36.

20 Tomasz R. Nowacki, „Nuclear Power Programme for Poland – Establishing the Legal Framework", [in:] *Nuclear Law in the EU and Beyond – Atomrecht in Deutschland, der EU und weltweit. Proceedings of the AIDN/INLA Regional Conference 2013 in* Leipzig, ed. Christian Raetzke (Baden-Baden: Nomos Verlag, 2014), 139.

a desirable direction. Currently, under Polish law, an operator of a nuclear power plant based on an SMR reactor is subject to the same rules regarding the quantitative limitation of liability. At this these investments risk level equates with large-scale nuclear power plants. This does not mean that the development of SMR projects should not be supported, but it should not be done at the expense of lowering standards and requirements for such reactors, especially at the development stage, when they are not yet fully proven and commercially available.

3.3. Compulsory financial security

Conventions have uniformly adopted the obligation for an operator to have financial security for liability. This is a mechanism that, on the one hand, guarantees the payment of compensation at a specified level and, on the other hand, relieves the operator from the need to satisfy claims from its own assets. The risk is externalised and transferred to a specialised entity. The Vienna Convention (Article VII.1.a) obliges the operator to have insurance or other financial security covering his liability for nuclear damage. Similarly, the Paris Convention uses the terms insurance or other financial security. The minimum amount of security is derived from the minimum liability limit of the operator provided for by national law.

Even after estimating the potential amount of civil liability for nuclear damage based on the established quantitative limit, the risk remains too high for a single insurer or financial institution to cover on its own within the framework of classic products available on the market. Therefore, in practice, various forms of security have emerged to cover this risk specific to the nuclear sector, such as insurance pools or pools of nuclear operators, primarily based on the accumulation of the potential of many entities[21].

The increase in liability limits adopted in international instruments during their development at the turn of the 1990s and 2000s has forced operators to diversify their security methods in order to meet the requirements of Conventions and national legislation[22]. Sometimes, even this was not enough, and temporary state intervention was necessary, e.g., in the

21 See Quéré, „Challenges Facing the insurance industry", 84.

22 See Mark Tetley, „Revised Paris and Vienna Nuclear Liability Conventions – Challanges for Nuclear Insurers" *Nuclear Law Bulletin*, No. 77 (2006): 27.

form of establishing guarantees[23]. The insurance market is developing over time and has an increasing ability to provide products that meet the requirements of Conventions.

Turning to Polish regulations, Article 103(1) of the Atomic Law imposes the obligation to enter into a civil liability insurance contract on the operator. Compliance with the obligation to enter into an insurance contract is subject to the supervision of nuclear regulatory authorities, and failure to comply results in a penalty in the form of a payment to the state budget of 20% of the minimum guaranteed amount of this insurance. Interestingly, in the original version of the Atomic Law, it was the obligation of „financial security", thus a broader spectrum of legal relations than just insurance. Professor Zbigniew Brodecki, in his assessment of the draft Act, pointed to the correctness of such a broad concept as a flexible solution for the operator, allowing for the choice of an appropriate form of security[24]. Although the Atomic Law mentions only the obligation to enter into an insurance contract in the singular, it seems that ensuring that Polish operators have diversified sources of liability coverage is both desirable from the point of view of maximising risk externalisation and necessary due to the current market conditions in terms of insurance products offered. However, it is difficult to say today how the insurance market will develop in the coming years. So far, a domestic pool has not been created, but there are declarations in the public debate about the ambition to create a Polish insurance pool[25]. Therefore, it is worth considering amending the Atomic Law to explicitly allow for the simultaneous conclusion of contracts within the framework of many functioning mechanisms up to the amount specified in the regulations.

When assessing the significance of compulsory insurance for risk scaling, it is, alongside the liability limit, another key element in constructing a double safety valve for the operator. On the one hand, this entity is liable only up to the amount specified in the law, and on the other hand, it has insurance for this liability for the same amount. In practice, this means that despite the channelling of liability to the operator, in exchange for a premium, the insurer assumes the financial burden of this liability and

23 See Quéré, „Challenges Facing the insurance industry", 87.

24 See Zbigniew Brodecki, „Ocena projektu ustawy Prawo atomowe" *Ekspertyzy BSE*, No. 3 (2000): 29.

25 https://www.tuwpzuw.pl/aktualnosci/szczegoly/prezes-tuwpzuw-o-przyszlosci-ubezpieczen-energetyki-jadrowej-w-polsce. [accessed: 23.05.2024].

undertakes to provide a specified benefit in the event of an occurrence described in the insurance contract (Article 805 para. 1 of the Civil Code[26]). Of course, insurance by a third party involves costs for the operator in the form of non-refundable premiums, and with a high degree of probability, a nuclear incident actualising liability on a large scale will not occur during the entire life cycle of the nuclear power plant. However, if this were to happen, the benefit would be disproportionately high. After all, premium payments are spread over time. In the absence of insurance and a large-scale incident, the huge cost would have to be borne by the operator in a lump sum, which could very likely lead to its insolvency. The market has developed a solution to mitigate the problem of non-refundable premiums, a captive mechanism, through insurance within a special purpose entity from the same corporate group, which allows for the freezing of shareholders' equity[27]. The quantitative limitation of liability along with compulsory insurance, are undoubtedly the pillars of the measurability of the risk of civil liability for nuclear damage.

3.4. Limitation of liability fund and nuclear damage claims regulations

The procedural rules for claiming compensation for nuclear damage are not without significance for the legal situation of the operator and estimating the costs associated with a potential incident. In principle, rules for claiming compensation should meet the criteria of speed, efficiency, and economy of proceedings. This would allow the liable entity and the victims to complete the compensation processes quickly and efficiently without incurring excessive additional costs. For risk scaling, it is important to know how much the operator pays to the victims, how quickly it pays them, and at what cost it does so. If, in the event of a significant incident, there are hundreds or thousands of claims to be handled, it is obvious

26 Consolidated text as published in the Official Journal of Laws „Dziennik Ustaw" 2024, item 1061.

27 European Commission, Study on the insurance, private and financial markets in the field of nuclear third party liability, ENCO FR (19) 04 Rev.3, 2020, 17-18; https://op.europa.eu/en/publication-detail/-/publication/e8da7153-4016-11eb-b27b-01aa75ed71a1/language-en/format-PDF/source-187706934. [accessed: 19.05.2024].

that as the duration of the procedure for satisfying these claims increases (whether through court or other ways), the costs of such handling borne by the operator will increase proportionally to the amount of compensation due (especially in court proceedings as a result of the "costs follow the event" rule). In the face of existing law and the current judicial reality in Poland, the demand for speed may be practically impossible to meet without detailed regulations. An additional specific challenge in the claims process is the multitude of entities bringing lawsuits in comparison with the limited amount of funds allocated to satisfy creditors. This leads to the need to adopt rules for satisfying claims (distribution of funds, order of satisfaction).

The rules of procedural law are only partially regulated autonomously in the Atomic Law, and the general principles of civil procedure are of a subsidiary nature. Pursuant to Article 100a(1) of the Atomic Law, the reparation of nuclear damage shall be governed by the provisions of the Civil Code, subject to the exceptions provided for in the Atomic Law. In turn, pursuant to Article 107(2) of the Atomic Law, in matters of compensation, to the extent not regulated in Chapter 12, the provisions of the Civil Code shall also apply. The provisions of the Code of Civil Procedure[28] shall apply to court proceedings in matters of compensation (Article 106(2) of the Atomic Law). As regards subject-matter jurisdiction, pursuant to Article 106(1) of the Atomic Law, where nuclear damage has occurred as a result of a nuclear incident on the territory of the Republic of Poland, cases relating to claims for nuclear damage shall fall within the subject-matter jurisdiction of district courts. However, the Atomic Law does not specify exclusive local jurisdiction, hence the general principle in this respect should be adopted, which in practice means that the court competent to hear the claims will, as a rule, be the district court having local jurisdiction over the defendant's registered office, i.e. primarily the operator (Article 30 of the Code of Civil Procedure). Nevertheless, the provisions of the Atomic Law provide for the possibility of claiming compensation for nuclear damage directly from the insurer, and in the event of the insurer's failure to fully compensate for the damage, the subsidiary liability of the state for nuclear damage, but is limited to the amount of SDR 300 million. Since there may be at least two independently sued entities, it means that different courts may be locally competent to hear the cases.

28 Consolidated text as published in the Official Journal of Laws „Dziennik Ustaw" 2023, item 1550, 1429,1606, 1615, 1667, 1860, 2760, and 2024, item 858, 859, 863.

A particularly unique solution in the matter of claiming compensation for nuclear damage under the Atomic Law is the liability limitation fund (Article 102(2) et seq. of the Atomic Law), which, as one might assume, was intended to serve the function of consolidating submitted claims within a single court proceeding and probably establishing rules for the distribution of the amount among the victims. The institution of the liability limitation fund was already included in the original text of the Act of 2000 – a detailed explanation and motivation for introducing these regulations cannot be found in the justification for the draft[29].

In the event that the amount specified in Article 102(1) of the Atomic Law is insufficient to satisfy all claims, the person liable for the damage shall establish a limited liability fund by submitting a relevant application to the District Court in Warsaw. In practice, this means that a fund would be established for each large-scale incident. The provisions of the Maritime Code of 18 September 2001[30] on the limitation of liability for maritime claims shall apply *mutatis mutandis* to the proceedings for the establishment of the fund and its distribution. This reference pertains to the distribution of the fund and the procedure for its establishment, although these provisions do not specify the substantive legal basis for the distribution. Admittedly, Article 100 of the Maritime Code stipulates that claims for damage to port installations and basins, waterways, and navigation aids shall be satisfied with priority over other claims, with the exception of claims for death, personal injury, or impairment of health. This suggests that the legislator intended to satisfy claims for personal injury first. However, there is no explicit indication of priority in this regard in the Polish legal order. Indirectly, one may also refer to the provisions of the Convention on the Limitation of Liability for Maritime Claims, concluded in London on 19 November 1976[31], to which the Maritime Code refers and which provides that the fund shall be divided among the claimants in proportion to their claims against the fund[32]. The District Court in Warsaw has jurisdiction over matters concerning the establishment of the fund and its distribution.

A certain general norm regarding the principles of distribution of the available amount among the injured parties can be found in the Vienna

29 Official Sejm document „druk sejmowy" No. 1724, issued on 15 February 2000.

30 Consolidated text as published in the Official Journal of Laws „Dziennik Ustaw" of 2023, item 1309.

31 Official Journal of Laws „Dziennik Ustaw" of 1986, No. 35, item 175, as amended.

32 See Majda, *Cywilna odpowiedzialność*, 262.

Convention. Article VIII.2 establishes priority for the reparation of loss of life or personal injury in the event that the total amount of claims exceeds the amount allocated for their satisfaction. The Atomic Law gives expression to this in Article 103c(1): if a nuclear incident, in addition to damage to property or the environment, has also caused personal injury, 10% of the insurance guarantee sum is allocated to securing claims for nuclear damage to persons. The issue of the distribution of amounts allocated to cover damages between already disclosed damages and those which may only be disclosed in the future has been regulated to some extent in Article 103c(2) of the Atomic Law, according to which if, within 5 years of the nuclear incident, claims for personal injury made against the operator do not exceed in total the guarantee sum allocated exclusively to the satisfaction of such claims, the remaining part of the guarantee sum shall be allocated to the satisfaction of claims for damage to property or the environment, as well as claims for personal injury made within 10 years from the date of the nuclear incident. However, there is still a lack of more detailed, transparent, and complete criteria for the distribution of available funds.

The above-described rules for pursuing claims under Polish law should be assessed as fragmentary and piecemeal, inadequate for contemporary procedural realities, especially when compared to practical experiences, such as the aftermath of the Fukushima incident or in relation to other European legislations. The provisions for establishing a limited liability fund remain unclear and, in practice, can give rise to significant interpretative doubts and, therefore, should be assessed as unfavourable to the operator. The reference to the Maritime Code, which concerns a completely different type of event, leaves many interpretative gaps. In turn, the more uncertainty and room for interpretation, the worse the situation is for the liable entity and the victims due to the delay of court proceedings. In the current state of regulation, it cannot be stated that the rules for pursuing claims are described in the provisions in a clear and transparent manner, allowing, for example, for the prediction of the scale of costs borne by the operator. It is not clear how the exceeding of the amount of SDR 300 million is to be assessed – whether these are claims that have already been brought to court or whether it is sufficient to notify the operator or insurer of a claim for payment? Who decides that a claim is to be satisfied? A legislative solution worth considering is to describe the procedural and substantive rules of the autonomous distribution of the amount in the Atomic Law without referring to the Maritime Code. It would also be reasonable to advocate for the mandatory pursuit of claims in a single

formalised separate proceeding conducted by one court, regardless of whether the amount of claims exceeds the statutory limit of liability, within which it would be possible to divide the claimants into groups depending on the characteristics of the claims they are pursuing. This would promote transparency and proportionality in the award of damages in every situation and would also have a positive impact, in particular, on the economics of the proceedings, instead of multiple proceedings conducted by different panels of judges under the principle of free evaluation of evidence. This would also fulfil the obligation imposed by Article VB of the Vienna Convention, according to which: „Each Contracting Party shall ensure that persons suffering damage may enforce their rights to compensation without having to bring separate proceedings according to the origin of the funds provided for such compensation".

A noteworthy solution to the problem of distribution of available funds has been adopted in Slovakian law[33]. Slovakia is a party to Vienna Convention. Firstly, the time of claim submission is crucial. Claims submitted within 6 months of the incident are to be allocated 50% of the available funds; subsequently, claims submitted within 7-24 months of the incident are to be allocated 30% of the funds; and finally, unused funds from the previous steps, as well as 20% of the available funds, are to be allocated to claims submitted between the 25th month and the 10th year after the incident. Claims should be satisfied proportionally within the available funds in each time period. If, on the other hand, the available funds have not been used and, within the respective time periods, the claims have been satisfied proportionally but not in full, then after the expiry of 10 years, a settlement should take place, and any additional payments should be made in full or proportionally to all submitted claims. At first glance, it is evident that the regulation regarding the division of amounts is much clearer than the Polish one and consequently provides more certainty for the operator. It is also worth mentioning the German and French solutions. In general, these legislations assume that if the funds allocated to satisfy claims are insufficient, normative legal acts should be issued, which will

33 See Act dated 19 March 2015 On Civil Liability for Nuclear Damage and on its Financial Coverage and on changes and amendments to certain laws, Section 7 subparagraph 5 and 6 – English version: https://www.ujd.gov.sk/wp-content/uploads/2021/10/E54_2015.pdf. [accessed: 30.07.2024].

specify on the basis of which principles the funds are to be distributed among the victims[34].

In the context of pursuing claims for nuclear damage, it is worth noting that, according to Article 105(1) of the Atomic Law, claims for damages to the person do not time-bar. This regulation exceeds the minimum requirements of the 1997 Vienna Convention under which a claim for the reparation of personal injury shall expire 30 years from the date of the nuclear incident. The lack of a time limit on the commencement of proceedings also does not contribute to the legal certainty of the operator.

3.5. Jurisdiction and applicable law

From the perspective of claims pursuing, jurisdictional principles and the applicable law are also significant. This is particularly relevant for the operator in situations where the consequences of a nuclear incident are of a cross-border nature. Detailed jurisdictional norms have been regulated in the Vienna Convention (Article XI). The primary principle is the jurisdiction of the court of the state on whose territory the nuclear incident occurred (paragraph 1). Moreover, the Vienna Convention establishes additional jurisdictional norms in subsequent paragraphs, in situations where the incident occurs outside the territory of a Contracting Party, or where the place cannot be established beyond any reasonable doubt. Collision norms have also been provided for, should jurisdiction established on the basis of the Convention belong to the courts of more than one state.

Pursuant to Article XI.4 of the Vienna Convention, the Contracting Party whose courts have jurisdiction shall ensure that only one of its courts shall have jurisdiction in relation to any one nuclear incident. In light of the above remarks concerning the rules for claiming compensation arising from the Atomic Law and general provisions, one may doubt whether Poland complies with this convention norm. The Atomic Law merely indicates the competence of district courts rather than one specific court that is competent in both subject matter and location. It is specified that the District Court of Warsaw shall be competent only in relation to the establishment and distribution of funds from the limited liability fund. However, the limited liability fund is not established in every case; it is under

34 See Norbert Pelzer, „Facing the challange of nuclear mass tort processing" *Nuclear Law Bulletin*, no. 1 (2017): 52.

a specific condition – if claims exceed the available amount. This is another argument in favour of the proposition that the provisions on claims procedures require a systemic overhaul. As indicated above, since it is possible to sue several entities (the operator, the insurer, and the state as subsidiarily liable), it is potentially possible for cases concerning the same incident to be heard by different courts. It seems desirable, from the perspective of the principle of procedural economy, to consolidate the hearing of cases in one court and optimally even by the same panel within a kind of group proceeding. It is primarily necessary to amend the provisions so that cases concerning one incident are heard by the same court competent as to the subject matter and location. In order to achieve such a goal, several legislative solutions are possible. Firstly, similarly to the provisions concerning the limited liability fund (Article 102(3) of the Atomic Law), a specifically named court can be indicated – for example, the District Court of Warsaw. The second solution is to directly indicate the subject-matter competence of the court (it is rather necessary to opt for the subject-matter competence of the District Courts), specifying that the territorial competence should be determined independently of the defendant, always in the same way – for example, always according to the territorial competence of the operator's registered office. Finally, the third potential solution to remove doubts is to introduce a certain variation of the general principle of *perpetuatio fori*, in such a way that the court to which the first lawsuit in the matter was filed becomes competent to hear all cases arising from the liability for nuclear damage from a given incident. Any subsequent case initiated before another court should be transferred to the court competent according to the thus established competence. However, the issue of competence alone does not yet solve the need to introduce comprehensive norms of a dedicated collective proceeding. This previously expressed proposal *de lege ferenda* should be maintained.

The Vienna Convention also provides for norms regarding the recognition of judgments. Article XII.1 states that a judgment that is no longer subject to ordinary forms of review entered by a court of a Contracting Party with jurisdiction, shall be recognized. It appears that the recognition of judgments occurs *ex lege* without any special recognition procedure[35]. As for the applicable law, according to Article VIII.1: the nature, form, and

35 See Jakub Tekielak, „Jurysdykcja, właściwość sądu, uznawanie i wykonywanie orzeczeń przy dochodzeniu roszczeń z tytułu szkody jądrowej" *Ars Iuridica*, No. 21 (2018): 120.

extent of the compensation, as well as its equitable distribution thereof, shall be governed by the law of the competent court.

The principle of jurisdiction of the court of the state where the incident occurred, coupled with the principle of recognition of judgments, eliminates the problem of the operator having to conduct potentially numerous proceedings in foreign courts, thus contributing to reducing the costs of the claims settlement process.

3.6. State guarantee

The state's participation in the indemnification of nuclear damage can take various forms. Radosław Majda points out that the more economically (capital-wise) involved the state is in entities owning and operating nuclear power plants, the more its financial responsibility finds an axiological justification. This correlation weakens in the absence of state involvement in the production of electricity in nuclear power plants or when such involvement is not dominant. In the case of state capital participation in entities operating nuclear power plants (directly or indirectly through subsidiary companies), the economic burden is, to some extent, borne by the state, alongside the formal concentration of liability in a separate legal entity[36]. Undoubtedly, any state involvement constitutes a form of support for the nuclear industry.

According to Article VII.1(a) of the Vienna Convention, a state is obligated to ensure the payment of claims for damages established against the operator by providing the necessary funds to the extent that the yield of insurance or other financial security is inadequate to satisfy such claims, but in excess of the limit established pursuant to Article V. Following the Vienna Convention, the Atomic Law provides for state liability in a very narrow scope. Pursuant to Article 103c(3), the State Treasury guarantees the payment of compensation for nuclear damage up to the amount of SDR 300 million and to the extent that the damage has not been covered by the insurer under the insurance contract or in cases provided for by law. The literature indicates the subsidiary nature of this liability[37]. A hitherto uncommented issue is the potential possibility of a right to recourse claim by the state against either the operator or the insurer. This raises the

36 See Majda, *Cywilna odpowiedzialność*, 209–210.
37 Ibidem.

question of whether, for example, the provisions of Article 441 in conjunction with Article 376 of the Civil Code could be applied in any way. These provisions regulate the conditions for a right to recourse in detail. Given the legal nature of state liability as subsidiary or guarantee liability (the legislator explicitly uses the verb „guarantees" in Article 103c(3) of the Atomic Law), it seems that the application of Article 441para. 1 and 2 of the Civil Code would be excluded – we are dealing neither with joint and several liability nor with a case of liability *in solidum*. On the other hand, para.3 concerns a situation where a right to recourse is due to an entity liable on a basis other than fault against an entity liable on the basis of fault[38]. This case also seems not to apply, as neither the operator nor the insurer is liable on the basis of fault.

In conclusion, although state liability in the Polish legal system is quantitatively limited to the same level as the operator's liability, it serves as a kind of additional safeguard for the operator in situations where the insurer is unable to fulfil its contractual obligations.

4 Facultative legal instruments

In addition to the mandatory regulations discussed above, there are mechanisms by which operators have the freedom to shape their legal situation to their advantage. The result is the mitigation and reduction of existing risk, which directly affects its scalability. This part will present several selected mechanisms that, in the author's opinion, have a particular impact on the measurability of risk.

38 Leszek Jantowski w: *Kodeks cywilny. Komentarz zaktualizowany*, ed. Małgorzata Balwicka-Szczyrba, Anna Sylwestrzak (LEX/el. 2024), paragraph 9. https://sip.lex.pl/#/commentary/587923063/766647/balwicka-szczyrba-malgorzata-red-sylwestrzak-anna-red-kodeks-cywilny-komentarz-aktualizowany?cm=URELATIONS%20(dost%C4%99p:%202024-05-20%2007:11. [accessed: 20.05.2024].

4.1. The possibility of contractually excluding liability during the transportation of nuclear materials

Operating a nuclear power plant is a complex process involving more than just the generation of electricity. It also includes the transportation of nuclear materials to and from the nuclear installation. According to the statutory definition, nuclear material includes nuclear fuel as well as radioactive products and waste. The legislator has independently and differently regulated this matter in Article 101(2) of the Atomic Law, assuming that: During the transportation of nuclear materials, the operator of the nuclear installation from which the material was sent is liable, unless otherwise agreed in a contract with the recipient. The consequences of this regulation for the operator are as follows: if the nuclear material is transported to the power plant operated by it, then it is not liable for nuclear damage occurring during transportation; however, if the nuclear material is transported from the power plant operated by it, then it is liable (this will be the case of transporting radioactive waste from the power plant and, according to the accepted view, the risk is much higher[39]). As R. Majda points out, the Atomic Law regulation only resolves the basic problem, leaving other important issues unaddressed: at what point does the liability transfer from one operator to another, what are the rules of liability for cross-border transport, or what is the scope of liability when the transported nuclear material belongs to more than one operator[40]. This author also adopts a rather controversial interpretation, suggesting that the liability between operators cannot be contractually modified with respect to the statutory rules effectively against third parties, and the provision essentially formulates a subrogation claim between them if the contract provided for rules of liability different from the statutory ones (economic burden of compensation)[41].

Given the rather unequivocal and well-established civil law interpretation of the provision indicating its relatively mandatory nature, it is difficult to agree with this view. In situations where the legislator intends to refer to recourse claims (see Article 376 para. 2 or Article 441 of the Civil Code), it explicitly indicates such a legal nature of the relationship

39 Majda, *Cywilna odpowiedzialność*, 133.
40 Ibidem, 134.
41 Ibidem, 138.

between the parties. A more correct interpretation seems to be that the provision is semi-dispositive. Abstracting from the axiological assessment of this regulation, the opposite interpretation would be an anti-systemic interpretation – characteristic formulations known to the civil law system should be interpreted in accordance with that system, as a different interpretation undermines legal certainty. Such an interpretation is supported not only by systematic interpretation but also by comparative interpretation (with other provisions of this type: e.g., Article 49 para. 2, 488 para. 1, Article 543^1 para. 1 of the Civil Code) and by an analogous interpretation based on a similar principle (*argumentum a simile*). Consequently, it must be assumed that in the current state of the law, the rule of liability in transport can be contractually modified, and the operator sending nuclear material may, in an agreement with the recipient, shape the rules of liability to its advantage. Article 100(2) of the Atomic Law thus provides a mechanism for reducing risk.

4.2. Contractual recourse

As mentioned, the principle of focusing liability on the operator aims, among other things, to exclude the liability of entities involved in the realisation of the investment: technology suppliers, contractors, subcontractors, the basis for which could be found in the general rules of civil liability (Articles 415, 435, and 449^1 of the Civil Code).

However, the Vienna Convention (Article X(a)) provides that the operator of a nuclear installation shall have a right of recourse only if this is expressly provided for by a contract in writing. This provision of the Vienna Convention has not been reflected in the Atomic Law. The right of recourse also exists if a nuclear incident occurred as a result from an act or omission done with the intent to cause damage. This right is owed to the individual who has acted or omitted to act with such intent (Article X(b)). It should be assumed that the discussed provision of the Vienna Convention is directly effective under the Polish constitutional norms on the sources of law, which also include ratified international agreements.

Although contractual recourse clauses are not commonly used in practice, in a specific case, from the perspective of investors and, subsequently, operators, it may be desirable to secure their own interests by including provisions on recourse claims in contracts, although this may be very difficult to enforce due to the strong position of suppliers.

4.3. Corporate law mechanisms

It is commonly accepted to establish special purpose companies for the implementation of nuclear investments[42]. However, analysing the situation in the European nuclear sector, it can be concluded that special purpose operating companies are no longer as common. On the one hand, we have a model of ownership and operation of a nuclear power plant by a parent company of a large corporate group with a majority or full state shareholding, such as the French EDF[43] or the Czech CEZ[44]. A different example is the Finnish Olikiluoto power plant operating based on the Mankala model, where the operator is Teollisuuden Voima Oyj (TVO) – a limited liability company whose shareholders are several Finnish industrial companies[45]. On the other hand, the owner and operator of the Finnish Loviisa nuclear power plant is Fortum Power and Heat Oy – an almost 100% subsidiary of Fortum Corporation[46]. It is impossible not to mention the SaHo financing (ownership) model developed by Poles, which, in great simplification – because there are also several variants – differs from the Mankala model in that the initial investor is a special purpose company established by the state, and at later stages of the investment, shares in this entity are sold to potential buyers of electricity from the nuclear power plant[47]. These

42 We observe this phenomenon in Poland as well: the special purpose vehicle Polskie Elektrownie Jądrowe sp. z o.o. as the investor of the nuclear power plant in Pomerania, the joint special purpose vehicle of PGE and ZE PAK – PGE PAK Energia Jądrowa S.A. implementing the investment in Pątnów, or special purpose vehicles for each of the announced locations like Orlen Synthos Green Energy did, such as BWRX-300 STAWY MONOWSKIE sp. z o.o.

43 According to EDF Group 2022 Management Report, 3. https://www.edf.fr/backend/collectivites/backend/groupe/backend/groupe/backend/groupe/backend/collectivites/backend/groupe/backend/groupe/backend/groupe/backend/groupe/backend/groupe/backend/groupe/sites/groupe/files/2023-03/annual-results-2022-management-report-2023-03-29.pdf. [accessed: 8.08.2024].

44 According to CEZ Group Annual Financial Report for 2023, 290. https://www.cez.cz/webpublic/file/edee/ospol/fileexport/investori/vz-2023/cez-group-annual-financial-report-2023-pdf.pdf. [accessed: 31.07.2024].

45 According to TVO's Report Of The Board of Directors and Financial Statements for 2023; https://www.tvo.fi/material/sites/tvo/pdft/kjqsohi5r/TVO_Financial_Statements_2023.pdf. [accessed: 31.07.2024].

46 https://world-nuclear.org/information-library/country-profiles/countries-a-f/finland.aspx. [accessed 31.07.2024].

47 See more Łukasz Sawicki, Bożena Horbaczewska, "Role of the state in implementation of strategic investment projects: The SaHo Model for nuclear power" *International Journal of Managment and Economics*, No. 4 (2021): 343-359.

few examples alone reveal at least three possible models of the operator's capital structure:

a. the nuclear power plant is owned and operated directly by the parent company within a large energy group with state participation, and this entity trades the electricity produced at the nuclear power plant;
b. the nuclear power plant is owned and operated by a dedicated company in the cooperative model, where the nuclear power plant produces electricity for the shareholders for their own use;
c. the nuclear power plant is owned and operated by a subsidiary of a large energy group with a majority state shareholding. This entity trades electricity on the market.

However, these are just examples. There are many more business models and possible capital structures. The choice of specific ones depends on the investors within the limits set by national corporate law. This is the nature of the optional solutions, resulting from the freedom to conduct business activities and the freedom to choose the form of such activities. An important stage in making a specific business decision is a legal analysis of the effects of adopting a given model. Here, several general observations can be made.

Firstly, the establishment of a dedicated special purpose company or the concentration of ownership and operation of a nuclear power plant in a subsidiary company protects the shareholders' capital. A general and overriding principle of corporate law is the lack of liability of the owner for the liabilities of a subsidiary company – the corporate veil mechanism[48]. This is based on the separate legal personality of a company from its shareholders, which is expressly stated in Article 151 para. 4 of the Commercial Companies Code[49] in relation to a limited liability company and in Article 301 para. 5 of the Commercial Companies Code in relation to a joint-stock company[50]. As Konrad Osajda points out: „Due to the legal personality granted to companies, the general rule is that they are only liable with their own assets, and the possibility of satisfaction from other assets is exceptional. The law contains provisions that expressly allow for

48 See Monika Pacocha, „Przebicie zasłony korporacyjnej a związanie zapisem na sąd polubowny" *Przegląd Prawa Handlowego*, No. 6 (2017): 51-58.

49 Consolidated text as published in the Official Journal of Laws „Dziennik Ustaw" 2024, item 18, 96.

50 See Mateusz Rodzynkiewicz, *Kodeks spółek handlowych. Komentarz* (Warszawa: Wolters Kluwer, 2018), 706.

this"[51]. The detailed mechanisms of holding company law was introduced into the Commercial Companies Code by the amending Act of 9 February 2022[52] allowing, in exceptional cases, for the liability of the parent company towards the creditors of the subsidiary company. It should only be noted that the legislator introduces the liability of the parent company in a strictly defined case: the damage was caused to the creditor of the subsidiary company, and execution proved unsuccessful (Article 21^{14} of the Commercial Companies Code). The institution of a group of companies has not gained popularity so far. It is enough to point out that the National Court Register does not mention the creation of a group of companies in accordance with the provisions of the Commercial Companies Code among the largest Polish energy capital groups. It should be added that, apart from the regulations on groups of companies, special regulations do not provide for the liability of shareholders for the liabilities of a capital company. Moreover, the same author points out another important principle of liability – the equal treatment of creditors:

> Although from an axiological point of view, one could differentiate the level of protection of contractual and tort creditors of a company, and such a differentiation is known, for example, in German law, there is no basis for doing so in Polish law – all civil law creditors, regardless of the source of the obligation (contract or tort), are treated equally[53].

This means that forced creditors on the basis of a tort regime and the regime concerning nuclear damage should be considered as such and should not be treated in any preferential way compared to others. Therefore, there are no special grounds to seek special protection for tort creditors of a subsidiary company. It should therefore be assumed that under Polish law, the parent company's liability for the subsidiary company's liabilities is generally excluded, and the only exception is that provided for in Article 21^{14} of the Commercial Companies Code upon fulfilment of strictly defined conditions in accordance with the principle of *exceptiones non sunt extendendae*.

51 Konrad Osajda, „Ochrona wierzycieli spółek kapitałowych w orzecznictwie Sądu Najwyższego", *Przegląd Prawa Handlowego*, No. 9 (2017): 11.

52 Act dated on 9 February 2022 amending the Commercial Companies Code and certain other acts, (Official Journal of Laws „Dziennik Ustaw" 2022, item 807).

53 Osajda, „Ochrona wierzycieli spółek kapitałowych", 9.

The use of corporate solutions involving the establishment of subsidiary capital companies whose business object is the operation of a nuclear power plant or the accumulation of such activities within an existing subsidiary company is an admissible and desirable solution in light of the principles of civil liability for nuclear damage. Above all, organisational reasons speak in favour of this. This is an economic activity with a special profile, existing in a unique regulatory environment, by its nature requiring the creation of an appropriate structure and the employment of a number of specialists, also at the level of management bodies. Concentrating and separating this activity in an entity separate from the shareholders, who also engage in other types of economic activity, is, therefore a natural choice. The establishment of a specialised, dedicated company is all the more justified if more than one entity is involved in the project.

Such an organisation of activities also promotes the principle of channelling liability. The legislator's intention was to concentrate this liability in one entity without dispersing it. Thus, the very structural principles of civil liability for nuclear damage dictate that this type of activity be carried out by one dedicated entity. The rules resulting from the Commercial Companies Code support the solutions adopted under the Atomic Law and create additional barriers. Conducting activities involving the operation of a nuclear power plant by a separate, dedicated legal entity – a commercial company – is an implementation of these principles and does not conflict with them.

In this specific situation of the operator, the boundary is twofold: the protection of shareholders results not only from the Commercial Companies Code, but also from the principle of channelling liability and the principle of its quantitative limitation. However, the risk of formulating claims directly against shareholders in case of liability for nuclear damage cannot be unequivocally excluded. Their possible assessment by the courts is a separate matter. The author takes the position that such an assessment should be negative, resulting in the dismissal of the claim solely due to the lack of passive standing, both due to the regulations of the Commercial Companies Code and the channelling of liability on the operator.

4.4. Alternative Dispute Resolution

Based on the observations already made regarding the principles of claiming damages, it can be assumed that if disputes in the event of a large-scale incident move to the stage of court proceedings, they will be lengthy and

time-consuming. Even taking into account the institution of a limited liability fund, which is intended to concentrate claims in one proceeding, the general rules of the Code of Civil Procedure, regarding, for example, proof, will not be excluded. This means that a single judge conducting a case from the application for the establishment of a fund will have to deal with a huge amount of material, probably requiring the acquisition of expert knowledge from experts in numerous specialities, while still being burdened with other cases assigned to his or her division. The extension of the proceedings over time does not favour the scalability of the operator's risk, as it will generate additional costs that are difficult to estimate. A remedy for this could be the extrajudicial settlement of disputes (Alternative Dispute Resolution – ADR). However, it should be assumed at the outset that in this case it would have to take on an institutional and pre-organised character based on transparent rules, also in terms of the distribution of the amount among the victims.

The primary question is whether there is any suitability for the settlement of claims for nuclear damage. The permissible subject matter of a settlement is regulated by Article 917 para. 1 of the Civil Code. As Leszek Jantowski points out, the scope of relations that can be regulated within a settlement is very broad:

> The purpose of a settlement is to eliminate this uncertainty or dispute or to ensure the performance of claims, and the sine qua non condition for achieving these goals is for the parties to make mutual concessions. A settlement always concerns persons who are already in certain relationships arising from a contract, from the fact of causing damage, or from being in certain family relationships. [...] An extrajudicial settlement is evidence of the existence of a specific obligation and its scope, which the creditor may invoke. Consequently, if the creditor proves the conclusion of a settlement in which the parties to a given legal relationship have determined the amount of the claim due to him, then the burden of proof that the amount resulting from the settlement is not due to the creditor rests with the debtor[54].

54 Jantowski, *Kodeks* cywilny, art. 917, pkt 1. https://sip.lex.pl/#/commentary/587923627/767211/balwicka-szczyrba-malgorzata-red-sylwestrzak-anna-red-kodeks-cywilny-komentarz-aktualizowany?cm=URELATIONS%20(dost%C4%99p:%202024-05-21%2008:30. [accessed: 21.05.2024].

Translating this to stance arising from liability for nuclear damage, the subject of a settlement would be the acknowledgement by the operator that the claimant's claim exists and the determination of the level of payment for the claimant. However, it seems that a constructive condition of a settlement is the making of mutual concessions by the parties. Depending on the case, the most common concession would be the payment of a smaller amount of compensation than claimed in exchange for acknowledging the existence of the claim and waiving the right to go to court. In the event of the full amount claimed being paid, it would not be considered a settlement, but rather the voluntary satisfaction of the claim by the operator, conducted outside of court proceedings.

The second question is whether the provisions of the Atomic Law do not constitute an obstacle to settling matters outside of court proceedings as part of extrajudicial settlements. In this case, there may be a barrier. As follows from the wording of Article 102(2) of the Atomic Law, the establishment of a limited liability fund is always mandatory if the sum of claims exceeds the amount of the liability limit. This may lead to the conclusion that, in this specific situation, an extrajudicial settlement of the dispute (outside the fund) is inadmissible. The operator is obliged to settle all disputes arising within the framework of the limited liability fund. Still, it seems that there would be no obstacles to finalising cases within the framework of court settlements within these court proceedings. However, such an action loses the nature of an ADR. This is, therefore, another argument in favour of changes to the nuclear damage claim regulation.

It is worth examining what solutions, in terms of ADR, are applied in other legal systems. A tendency to create dedicated entities or quasi-bodies can be observed. A flagship case in the literature that has been extensively described is the system created in Japan after the Fukushima incident[55]. In simplified terms, each victim was entitled to three, non-mutually exclusive paths:

a. direct path from the operator – voluntary payments made by the operator based on adopted criteria based on groups of the most common cases – guidelines issued by the Dispute Reconciliation Committee for Nuclear Damage Compensation;

55 The system adopted in Japan evolved over time, and it was essentially working on a living organism. See more Eric Feldman, „Fukushima: Catastrophe, compensation and justice in Japan" *DePaul Law Review*, No. 335 (2013): 335-356.

b. ADR path – a special entity called the Center for Nuclear Damage Reconciliation was established under the supervision of the Minister of Education, Culture, Sports, Science and Technology;
c. court proceedings path[56].

Many drawbacks of the adopted ADR system in Japan have been pointed out: slowness of decision-making, lack of collegiality (decisions were ultimately made by one person), lack of transparency and publicity, and therefore lack of predictability of decisions[57]. Above all, however, the main mistake was Japan's failure to prepare in advance for a similar situation and the adoption of *ad hoc* solutions after the event.

At the European level, German, French, Swiss, and Dutch legislation allows the establishment of an independent entity to resolve disputes that is not a court[58]. It seems that adopting a similar solution would be permissible under Polish law, provided that it does not violate the constitutional principles of the right to a court and the adjudication of a case in two instances (Articles 45, 78, and 176(1) of the Constitution of the Republic of Poland[59]). This would, therefore, require the voluntary submission of a dispute for resolution by a dedicated extrajudicial body. The party dissatisfied with the decision would still have the right to file a lawsuit in a common court and have the case heard by a court of two instances. An additional advantage of this solution is that cases heard by a dedicated entity would constitute a kind of pre-selection for undisputed or trivial cases. Difficult and complex cases requiring professional legal knowledge and experience would be referred for judicial resolution.

In summary, ADR may be beneficial for the operator in terms of shortening the process of paying due claims and reducing costs. However, it is difficult to imagine that such an effect would be achieved without the prior institutionalization of the extrajudicial form with clearly defined operating rules. This will also not be achieved if certain frameworks for the functioning of such an institution are not established in generally applicable regulations.

56 Ibidem, 351.
57 Ibidem, 352.
58 Zob. Pelzer, „Facing the challenge", 52.
59 Official Journals of Laws „Dziennik Ustaw": 1997, no. 78, item 483, 2001, no. 28, item 319, 2006, No. 200, item 1471, 2009, No. 114, item 946.

5 Final conclusions

The above analysis clearly indicates that the key and constructive legal factors influencing the scalability of nuclear damage liability risk are the fundamental principles of this liability derived from international law and reflected in Polish law: the principle of channelling, the principle of a quantitative liability limit, and the principle of mandatory financial security. The remaining regulations mentioned, including those of a facultative nature, complete the risk boundaries. This is only a subjective selection of legal institutions that have an impact on the measurability of risk. Each investment has its own specific characteristics, such as location, which have an obvious impact on the overall assessment.

As a rule, Polish regulations meet the standards set by the 1997 Vienna Convention. A significant problem that emerges is the rules for nuclear damage claims, both in terms of substantive and procedural law. These require legislative intervention both in terms of procedural norms: dedicated complete procedural norms for separate proceedings, implementation of the Convention's principle of a single court competent to hear cases, or finally, the formulation of unambiguous and transparent substantive legal bases for the distribution of the available amount. It is worth considering whether the provisions on the obligation to conclude an insurance contract correspond to current business practice and the products available on the market, for example in terms of the admissibility of concluding contracts simultaneously within the framework of several operating mechanisms up to the sum indicated in the regulations. Despite this, the liability risk within the economic activity of operating a nuclear power plant is a measurable risk from a legal point of view, mainly due to the fact that Poland is a party to one of the existing international systems.

At the current stage of economic and technological development, in view of the need to invest in low-emission generation sources that can operate in the so-called baseload, it is particularly important to seek a rational balance between supporting the development of nuclear energy and ensuring maximum coverage of any potential damage. Balance is the key word here. Over several decades of the development of norms concerning liability for nuclear damage, we have observed a tendency towards almost absolute protection of the victims, but also of other entities involved in investments, while at the same time imposing an absolute burden on the operator. The legal doctrine expresses similar views, sometimes forming very radical opinions. In Polish literature, there is a lack of studies that

would deal comprehensively with the legal situation of the operator from a business point of view as an entity operating for profit. This may be due to the fact that a number of myths have grown around nuclear energy, especially regarding the consequences of nuclear events known from history. A particular example that has had a significant impact on the European community is the Chernobyl incident. However, in this case, the reason for the difficulties in obtaining satisfaction by the victims was the lack of dedicated regulations and the fact that the USSR was not a party to any international convention. This means that participation in international conventions and dedicated regulations promote the protection of victims. Possibly, the highest level of scalability of nuclear damage liability should positively impact the development of this branch of the economy. High public support for nuclear energy is an obvious symptom of a change in thinking about this sector[60] but also a potential for introducing rational and necessary changes in the law, which cannot be wasted.

Bibliography

Ameye Evelyne, „Channelling of Nuclear Third Party Liability towards the Operator: Is it Sustainable in a Developing Nuclear World or is there a Need for Liability of Nuclear Architects and Engineers?" *European Energy and Environmental Law Review*, No. 19 (2010): 33–58. https://doi.org/10.54648/eelr2010003.

Brodecki Zbigniew, „Ocena projektu ustawy Prawo atomowe" *Ekspertyzy BSE*, No. 3(2000): 28–30.

Feldman Eric, „Fukushima: Catastrophe, compensation and justice in Japan" *DePaul Law Review*, No. 335 (2013): 335–356.

Horbaczewska Bożena, Łukasz Sawicki, „Role of the state in implementation of strategic investment projects: The SaHo Model for nuclear power" *International Journal of Managment and Economics*, No. 4 (2021): 343–359.

60 A survey commissioned by the Ministry of Climate and Environment in November 2023 revealed that nearly 90% of Poles support the construction of nuclear power plants in Poland. Moreover, almost 77% of respondents would agree to have such a power plant built near their place of residence. These are the best results in the history of the surveys conducted annually since 2012. https://www.gov.pl/web/klimat/kolejny-rekord-niemal-90-polakow-za-budowa-elektrowni-jadrowych-w-polsce. [accessed: 1.08.2024].

Kodeks cywilny. Komentarz zaktualizowany, ed. by Małgorzata Balwicka-Szczyrba, Anna Sylwestrzak. Lex/el. 2024.

Majda Radosław, *Cywilna odpowiedzialność za szkodę jądrową w polskim prawie atomowym*. Łódź: Wydawnictwo Uniwersytetu Łódzkiego, 2006.

Nowacki Tomasz R., „Nuclear Power on the Vistula River: Law and Policy in Shaping Energy Future of Poland" *Prawo i Więź*, nN. 3 (2020): 182–209. https://doi.org/10.36128/priw.vi32.97.

Nowacki Tomasz R., „Nuclear Power Programme for Poland – Establishing the Legal Framework", [in:] *Nuclear Law in the EU and Beyond – Atomrecht in Deutschland, der EU und weltweit. Proceedings of the AIDN/INLA Regional Conference 2013 in Leipzig*, ed. Christian Raetzke. 107–151. Baden-Baden: Nomos Verlag, 2014.

Osajda Konrad, „Ochrona wierzycieli spółek kapitałowych w orzecznictwie Sądu Najwyższego" *Przegląd Prawa Handlowego*, No. 9 (2017): 8–19.

Pacocha Monika, „Przebicie zasłony korporacyjnej a związanie zapisem na sąd polubowny" *Przegląd Prawa Handlowego*, No. 6 (2017): 51–58.

Pelzer Norbert, „Facing the challange of nuclear mass tort processing" *Nuclear Law Bulletin*, No. 99 (2017): 45–69.

Quéré Alain, „Challenges Facing the insurance industry since the modernisation of the international Nuclear third party liability regime" *Nuclear Law Bulletin*, No. 94 (2014): 77–104.

Rodzynkiewicz Mateusz, *Kodeks spółek handlowych. Komentarz*. Warszawa: Wolters Kluwer, 2018.

Schwartz Julia A., „Liability and Compensation for third party damage resulting from a nuclear incident", [in:] *Principles and Practice of International Nuclear Law*, red. Kimberly Sexton Nick, Stephen Burns. 409–444. Paris: Nuclear Energy Agency OECD, 2022.

Tekielak Jakub, „Jurysdykcja, właściwość sądu, uznawanie i wykonywanie orzeczeń przy dochodzeniu roszczeń z tytułu szkody jądrowej" *Ars Iuridica*, No. 38 (2018): 113–123.

Tetley Mark, „Revised Paris and Vienna Nuclear Liability Conventions – Challanges for Nuclear Insurers" *Nuclear Law Bulletin*, No. 7 (2006): 27–39.