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Synchronization Analysis of Licensing Legislation for the Environment with Nuclear Power in the Construction of Nuclear Power Plant in Indonesia

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Abstract

To build and operate a Nuclear Power Plant (NPP), it is necessary to fulfill the licensing requirements contained in the legislation. For the licensing provisions to follow the legislation, synchronization of laws and regulations is required. Synchronization of nuclear energy legislation with the environment is needed to fulfill licensing requirements for the safety of the construction and operation of nuclear power plants in Indonesia. This study analyzes the synchronization by identifying the suitability and harmony of licensing requirements in environmental and nuclear energy legislation constructing nuclear power plants based on positive legal systematics. The research method used is a literature study, identifying primary and secondary legal materials, then analyzing with a normative legal approach (statute approach), and synchronization vertically and horizontally. The results showed that licensing requirements in environmental laws and regulations related to constructing and operating nuclear power plants do not conflict with the nuclear energy legislation.

Keywords: *Licensing, Licensing Requirements, Nuclear Energy, Environment, Synchronization.*

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Introduction

Hierarchy theory in legislation is organized in tiers and levels [1]. There are two groups of standards in law: lower and higher. The validity of the lower standard can be tested hierarchically against the higher standard (Kelsen, 1999). This concept ensures that a country's legal rules are consistent and follow higher laws. The theory of legal hierarchy is a concept that describes the legal structure of a country. This concept states that the rule of law is organized in a hierarchy with different parts or sections.

In a conflict between lower and higher laws and regulations, the lower hierarchy laws and regulations must be adjusted, called the lex superiori derogat legi inferiori principle. Unwritten norms, customs, or practices can influence the legal system. To ensure the synchronization of regulations in Indonesia, it is necessary to identify regulations.

Synchronization to see the suitability or harmony of laws and regulations is carried out vertically and horizontally based on the systematization of positive law, namely between lower and higher laws and regulations. Synchronization aims to ensure that the substance regulated in legislative products does not overlap and is complementary and related.

According to Hans Nawiasky's multilevel legal theory, there are two forms of implementing regulations: a transfer of authority, namely the Implementing Regulations (verodnung) and Autonomous Regulations (autonome Satzung). This regulation functions to organize the provisions of the law. The implementing regulation (verodnung) is the authority to form laws and regulations delegated by law to lower laws and regulations [2]. The legal norm of the hierarchical form of laws and regulations in Indonesia is regulated in Article 7, paragraph (1) of Law Number 12/2011 on the Formation of Laws and Regulations.

The study aims to determine the suitability and harmony of laws and regulations regarding licensing in constructing and operating nuclear power plants in Indonesia. With this synchronization, it will be known that the substance in the licensing laws and regulations for the construction and operation of nuclear power plants does not conflict, does not overlap, complements each other, is closely correlated, and follows the principles of legislation. This study is included in the category of normative legal research to examine the synchronization of laws and regulations regarding licensing in Indonesia and provide input on provisions or policies in licensing the development of nuclear reactor / nuclear power plant operations.

The approach of this synchronization study is statutory (statute approach). The study of the synchronization of laws and regulations on licensing the construction and operation of nuclear power plants is carried out in 2 (two) ways [3]. First, horizontally, namely by examining laws and policies that are equal, in this case, the nuclear law against environmental laws. Second, vertically, namely by reviewing the Government Regulation on the Environment and Ministerial Regulations and Regulations of the Head of the Agency with the Nuclear Law.

METHODOLOGY

The research method is a literature review of statutory regulations relating to licensing in the construction and operation of nuclear power plants, then the analysis is carried out with a descriptive normative yuridical statutory approach which aims to explain the norms of synchronization of environmental and nuclear sector legislation.

Hierarchy of Legislation

The hierarchy of legislation is a guideline for making legal rules below it. The types and hierarchy of legislation based on the provisions of Article 7 paragraph (1) of Law No. 12 of 2011 concerning the formation of legislation are as follows: 1) Constitution of the

Republic of Indonesia Year 1945; 2) MPR Decree; 3) Law / Government Regulation in Lieu of Law; 4) Government Regulations; 5) Presidential Regulations; 6) Provincial Regional Regulations; 7) Regency/City Regional Regulations.

There are advantages and disadvantages related to the implementation of hierarchy in legislation (Kopa, 2019), (Bień-Kacała, 2017), as shown in Table 1.

Table 1. Advantages and Disadvantages of Hierarchical Theory in Legislation

Advantages	Disadvantages
There is legal certainty as it provides a clear and structured framework within the legal system	The hierarchical structure of legislation can be less flexible in addressing social, political, and economic changes.
Provides constitutional control, i.e. the constitution at the top of the legal hierarchy ensures constitutional control over lower laws and implementing regulations	If the higher levels of the legislation hierarchy do not reflect just values or conflict with social needs, the legislation hierarchy can become an obstacle to necessary change.
The higher constitution provides strong protections against human rights violations so regulations that contravene human rights can be declared invalid.	Legislative hierarchy theory is generally limited to written laws such as constitutions, statutes, and regulations.

Legislation can be effective, if it must substantially pay attention to 5 (five) principles, namely: Firstly, laws may not apply retroactively; which means that laws may only be applied to events mentioned in the law and occur after the law is declared effective. Second, laws made by higher authorities also have a higher position (Lex Superior Derogat Lex Inferiori). Third, special laws override general laws (Lex Specialis Derogat Lex Generalis); fourth, new laws trump old laws (Lex Posteriori Derogat Lex Priori). Fifth, laws are inviolable; meaning that laws can only be revoked and/or amended by the institution that made them.

The Legislation Regarding Licensing of Nuclear Power Plant Construction

Several pieces of legislation related to the licensing for the construction of nuclear power plants include Law No. 11 the Year 2020 on Job Creation, Law No. 10 the Year 1997 on Nuclear Energy, Regulations and Laws related to the Environment, and Government Regulation No. 2 the Year 2014 on The Licensing of Nuclear Installations and Utilisation of Nuclear Materials, as well as Government Regulation No. 5 the Year 2021 on the Implementation of Risk-Based Business Licensing. Regulations and laws related to the Environment include Government Regulation No. 22 Year 2021 on the Implementation of Environmental Protection and Management, Appendix I of Ministerial Regulation No. P.38/MENLHK/SETJEN/KUM.1/7/2019 on Types of Business Plans and/or Activities Required to Have an Environmental Impact Analysis.

The Law Number 11 Year 2020 on Job Creation

There are 42 (forty-two) thousand regulations, according to President Joko Widodo stated on Kompas.com on 18 March 2021[4], which resulted in Indonesia's slow catch-up. In 2018, each ministry was asked to cut regulations in each related sector, at least 100 monthly regulations [5].

There is regulatory complexity and obesity, with 4,451 Central Government Regulations and 15,965 Local Government Regulations. A legal breakthrough in resolving the disharmony of laws and regulations in Indonesia was made by simplifying the various laws into one law called the Omnibus Law.

The President stated that the Omnibus law is the key to a developed Indonesia. The intensity of the discussion of the Omnibus Law Bill is carried out in various fields, including the Omnibus Law in Job Creation. In the general explanation of Law Number 11 of the Year 2020 on Job Creation (UUCK), it is stated that Indonesia still faces various obstacles, especially in regulations and institutions, in addition to obstacles to fiscal, infrastructure, and human resources.

Based on the omnibus technique, a comprehensive assessment is conducted horizontally by examining all pertinent statutory legal documents interrelated. This encompasses those governing the same subject matter across various laws. Additionally, it involves a vertical evaluation, comparing regulations with varying hierarchical levels, commencing from the highest to the lowest, that regulate similar or associated concerns.[6]

The UUCK was drafted to simplify and streamline regulations related to the job creation process. Approximately 1,200 Articles poured into approximately 80 laws are simplified into one law regulating the replaced law's provisions [7].

Act Number 11 Year 2020 on Job Creation is necessary to overcome the problems that arise in the process of job creation in Indonesia, including overlapping policies, excessive number of regulations, policy inefficiencies, as well as high sectoral ego and policy unsynchronisation that impact legal certainty in the process of job creation [7] and licensing. The job creation law related to nuclear power is in Paragraph 6, consisting of 11 Articles, some of which are amended, inserted, and deleted, and in the environment sector, in Paragraph 3, consisting of 39 Articles, some of which are amended, inserted, and deleted.

The Act Number 10 Year 1997 on Nuclear Energy

The Nuclear Energy Act Number 10 of 1997 is the only regulation in Indonesia that regulates the nuclear sector in the main matters of nuclear power utilization activities and supervision to ensure the safety, security, and health of workers, society, and environmental protection. The Nuclear Safety Act contains nuclear principles, including nuclear security and loss liability, radiation control, radioactive waste management, and the utilization of nuclear power for peaceful purposes. The nuclear law also regulates the use of nuclear in the energy sector, namely the construction and operation of nuclear power plants (NPP) in Indonesia. In addition, it also regulates the use and production of radioactive isotopes for various purposes, such as in the fields of health, industry, research, and other applications. For implementing nuclear power utilization activities, it is necessary to have a supervisory element in the form of drafting nuclear regulations, issuing permits, and conducting nuclear safety inspections. The nuclear supervision mandated in the Nuclear Law authorizes the Nuclear Energy Supervisory Agency (BAPETEN). The Nuclear Energy Act also mandates the establishment of sanctions and law enforcement provisions against violations related to nuclear power utilization activities.

Regulations and Laws Related to the Environment

The government has issued various regulations in the environmental sector, which, among others, regulate the obligation to conduct a study or analysis of environmental impacts before building a business or activity, which is contained in an EIA, as mandated in Government Regulation No. 22 the Year 2021 on the Implementation of Environmental Protection and Management. Environmental Impact Assessment is a study of the essential impacts on the environment of a planned business and/or activity to be used as a prerequisite for decision-making on the implementation of the business and/or activity contained in the Business Licence or approval of the Central Government or Local Government.

Law No.32 Year 2009 on Environmental Protection and Management is an amendment to Law No. 23 Year 1997. The fundamental differences from the previous law include the

integration of environmental protection aspects, the duties and responsibilities of stakeholders are explained in more detail, the emergence of new obligations such as environmental permits, Environmental Risk Analysis (ARLH), and LH Audits, decentralization of hazardous waste management licensing, and aspects of supervision and sanctions (administrative and criminal) are made more detailed and binding.

In Law No. 32/2009 Article 22, Article 34, and Article 35, businesses and/or activities are classified into two categories, namely businesses/activities that have an essential impact on the environment and businesses/activities that do not significantly impact the environment. Article 22, paragraph (1) explains that businesses that have an essential impact on the environment are required to have an EIA. Critical impact criteria are mentioned in Article 22, paragraph (2).

Meanwhile, business plans and/or activities that do not meet the criteria in Article 22 paragraph (2) are required to have UKL-UPL (Environmental Management Efforts and Environmental Monitoring Efforts), as explained in Article 34 paragraph (1). Article 36, paragraph (1) further explains that business/activity plans that fall into the two mandatory categories of Amdal or UKL-UPL must have an Environmental permit. For business and/or activity plans that do not fulfill the two categories, making a Statement of Environmental Management and Monitoring (SPPL) is mandatory, as mentioned in Article 35, paragraph (1). An environmental permit is required to obtain a business/activity permit stipulated or issued by the Minister, Governor, or Regent/Mayor (Article 36, paragraph 4).

Law No. 11 Year 2020 on Job Creation was drafted to simplify business licensing regulations. Regarding environmental protection and management, in principle, there is no change in the concept of regulation from Law No. 32 Year 2009. The changes are more directed at perfecting the policies in the implementing regulations to make it easier for everyone to obtain Environmental Approval.

Some changes to the regulation of EIA in Law No. 11 the Year 2020 on Job Creation include the change of "Environmental Permit" to "Environmental Approval." Environmental Permits are integrated into Business Licensing, which means that the requirements and obligations of environmental aspects are reintegrated into Business Licensing and, at the same time, confirms that EIA documents and Environmental Approval are mandatory prerequisites in making decisions regarding whether or not a business plan and/or activity can be carried out. The Amdal Assessment Commission transforms into a Feasibility Test Team. Certified experts carry out the feasibility test of EIA documents. Community involvement arrangements are more proportional. PPLH (environmental protection and management) and Andallalin (Traffic Impact Analysis) permits are integrated into environmental documents.

To implement the provisions of Article 22 and Article 185 letter b of Law Number 11 Year 2020 on Job Creation, the Government issued Government Regulation No. 22 Year 2021 on the Implementation of Environmental Protection and Management. Government Regulation No. 22 of 2021 consists of 534 Articles organized into 13 Chapters and supplemented with 15 Annexes.

In Appendix I of Ministerial Regulation Number P.38/MENLHK/SETJEN/KUM.1/7/2019 concerning Types of Business Plans and/or Activities that are Required to Have an Environmental Impact Assessment, it is stated that in the nuclear sector, the types of activities are divided into category A and B EIA. Category A includes the construction and operation of both power and non-power reactors, the construction and operation of non-reactor nuclear installations, and the production of radioisotopes/radiopharmaceuticals. Category B includes the construction and operation of radioactive waste management installations and the mining of nuclear minerals. Amdal Category A is a business and/or activity plan with a very complex scope of business and/or activity plans, a compassionate location plan requiring very complex

environmental data. The duration of the preparation of category A EIA documents is 180 days.

Meanwhile, Category B EIA is a business and/or activity plan with a complex scope of business and/or activity plans. These location plans are quite sensitive and require complex environmental data. The maximum time for preparing category B EIA documents is 120 days.

Head of BAPETEN Regulation No. 3 Year 2014 on the Preparation of EIA Documents in the nuclear sector contains the requirements and obligations of applicants for licenses for the construction and operation of nuclear installations to prepare and submit EIA documents to obtain Environmental Permits from the Ministry of Environment. The explanation is as stated in Article 4, paragraph (1). Furthermore, Article 4 paragraph (2) states that the Environmental Permit obtained is one of the technical requirements for obtaining a construction permit.

Government Regulation Number 2 Year 2014 on Licensing of Nuclear Installations and Utilisation of Nuclear Materials

Government Regulation No. 2/2014 regulates licensing for the operation of nuclear installations and utilization of nuclear materials in Indonesia. This Government Regulation stipulates the scope of nuclear material utilization and installations requiring licensing.

BAPETEN grants licenses after fulfilling specific requirements, such as nuclear safety, radiation protection, radioactive waste management, and physical security. Licenses related to the utilization of nuclear materials in industry, health, agriculture, research, and other applications are granted by BAPETEN by considering safety, radiation protection, and environmental protection requirements.

PP No.2/2014 also outlines the Licensing Process that explains licensing procedures, including administrative requirements, technical evaluation, field inspection, and environmental impact assessment. It also provides provisions on license extension, renewal, revocation, and suspension of nuclear installation and nuclear material utilization licenses, as well as monitoring and reporting. The permit holder is obliged to report nuclear power utilization activities to BAPETEN periodically. BAPETEN is also responsible for supervising and inspecting permitted nuclear installations and nuclear material utilization.

Government Regulation Number 5 Year 2021 on the Implementation of Risk-Based Business Licensing (PP No. 5/2021)

Government Regulation No. 5/2021 on implementing Risk-Based Business Licensing regulates a new approach to implementing business licensing in Indonesia. This regulation adopts a risk-based approach in the implementation of business licensing. This principle requires the government to conduct a business risk assessment to be licensed by considering environmental, social, health, safety, and other risks. The integrated and electronic-based business registration system aims to provide easy access for business actors to obtain licenses and reduce excessive bureaucracy. This PP requires licensing organizers to conduct a risk analysis of the business to be licensed. This risk analysis involves identifying, assessing, and managing the risks associated with the business.

PP No.5/2021 also explains Business Licences, which regulate the types of business licenses, requirements, and procedures for obtaining them. Business licenses can be in the form of principal licenses, operational licenses, or special licenses, depending on the type and scale of the business being conducted. This PP encourages the implementation of integrated licensing, which allows business actors to obtain permits from various sectors or related agencies through a single door. This aims to reduce the complexity and time required in the licensing process and regulates Evaluation and Monitoring, which

stipulates the obligation for licensing organizers to evaluate and monitor the implementation of business licenses. The aim is to ensure compliance with permit requirements, fulfillment of environmental obligations, and social and economic impacts generated by the business.

RESULTS AND DISCUSSION

This study conducts horizontal synchronization of licensing regulations between Law No.11/2020 on Job Creation, Law No.10/1997 on Nuclear, and Law No. 32/2009 on Environmental Protection and Management. The position of the three laws and regulations is the same or parallel, so synchronization is carried out horizontally.

Synchronization between Law 11 of 2020 on Job Creation, Law No. 10 of 1997 on Nuclear, and Law No. 32 of 2009 on Environment and Environmental Protection can be done by combining the relevant provisions of the three laws. Concerning the utilization of nuclear power in the energy sector, the following aspects should be harmonized between the three laws.

The Nuclear Sector in the Job Creation Law is found in paragraph 6. As many as 11 Articles are amended from several provisions in the Nuclear Law to provide convenience for the public, especially Business Actors, in obtaining Business Licences from the Nuclear sector. Concerning environmental protection and management, in principle and concept, the concept of regulation remains the same from Law No. 32 Year 2009. The changes are more directed at perfecting the policies in the implementing rules to provide convenience for everyone in obtaining Environmental Approval.

There are several regulatory changes in the Job Creation Law, namely changes in licensing nomenclature from "Environmental Permit" to "Environmental Approval," Integration of Environmental Permits into Business Licensing, namely the requirements and obligations of environmental aspects are reintegrated in Business Licensing and at the same time confirming that EIA and Environmental Approval documents are mandatory prerequisites in making decisions regarding whether or not a business plan and/or activity can be carried out, Integration of PPLH (environmental protection and management) and Andallalin (Traffic Impact Analysis) permits into environmental documents.

Harmonization between the Nuclear Energy Law and the Environmental Protection and Management Law (Law No. 32 the Year 2009) is necessary to ensure environmental protection and good environmental protection are appropriately considered in nuclear energy use. This includes radioactive waste treatment, radiation reduction, and environmental monitoring when using nuclear facilities. This harmonization can be done by ensuring that the environmental rules and requirements stipulated in the Environmental Protection and Environmental Law related to the use of nuclear power in the energy sector are applied consistently and appropriately.

Vertical synchronization is when the legislation aligns with the strata or hierarchy of existing laws and regulations. Vertical synchronization can be resolved by the legal principle of Lex Superiori derogat legi Inferiori (higher regulations/legislation overrides lower regulations/legislation). Vertical synchronization aims to see whether laws and regulations apply to a particular field do not contradict each other.

The synchronization of nuclear and environmental legislation and the Job Creation law related to licensing the construction and operation of nuclear power plants can be seen in Table 1.

Table 1: Synchronisation of the Legislation for the Licensing of the Construction and Operation of NPPs

No	Act on Job creation No. 11/2020 (Article)	Act On Nuclear Environmental Energy No. 10/1997 (Article)	Act On Protection And Management No. 32/2009 (Article)	Synchronisation
	Nuclear Energy			
1.	Article 2A The Central Government has the authority to grant Business Licences related to nuclear safety.	Article 17 Paragraph (1) Every utilization. of nuclear energy must have a permit, except in certain matters which are further regulated by Government Regulation.		1. The Law on Job Creation and the Law on Nuclear Energy both mandate that the construction and operation of nuclear reactors and other nuclear installations and decommissioning must have a license. 2. The legal subject that issues the license is the Central government.
2.	Article 17 Paragraph (2) The construction and operation of nuclear reactors and other nuclear installations and decommissioning of nuclear reactors must fulfill a Business Licence from the Central Government.	Article 17 Paragraph (2) The construction and operation of nuclear reactors and other nuclear installations as well as the decommissioning of nuclear reactors must have a licence.		
	ENVIRONMENTAL			
	Article 13 Simplification of basic requirements for Business Licences as referred to in Article 6 letter b include: a. Conformity of space utilization activities; b. Environmental approval; and c. Building approval and certificate of function.		Article 36 (1) Every business and/or activity that is required to have an Environmental Impact Assessment (EIA) or UKL-UPL must have an environmental permit. (2) Environmental permit as referred to in paragraph (1) shall be issued based on the environmental feasibility decision as referred to in Article 31 or UKL-UPL recommendation. (3) The environmental	1. There are differences in nomenclature in terms of authority, namely environmental permits, and environmental approvals as mandated in the Law on Job Creation in Article 13 letter b. 2. Every business is obliged to carry out environmental management and obtain a Business Licence, or approval from the Central Government or Regional

			permit as referred to in paragraph (1) must include the requirements contained in the environmental feasibility decision or UKL-UPL recommendation. (4) Environmental permits are issued by the Minister, governor, or regent/mayor in accordance with their authority.	Government.
	Article 21 To provide convenience for everyone in obtaining environmental approval, this Law amends, deletes, or establishes new arrangements several provisions related to Business Licensing that are regulated in Law Number 32 Year 2009 on Environmental Protection and Management (State Gazette of the Republic of Indonesia State Gazette of the Republic of Indonesia Year 2009 Number 140, Supplement State Gazette of the Republic of Indonesia Number 5059).		Article 37 (1) The Minister, governor, or regent/mayor in accordance with their authority must reject an application for an environmental license if the application for a license is not accompanied by an EIA or UKL-UPL. (2) Environmental permit as referred to in Article 36 paragraph (4) may be canceled if: a. the requirements submitted in the application for a permit contains legal defects, errors, legal defects, errors, misuse, and untruth and/or falsification of data, documents, and/or information; b. the license is issued without fulfilling the requirements as stated in the commission's decision on the feasibility environment or UKLUPL	Every person or entity that will carry out nuclear energy utilization activities such as the construction and operation of nuclear reactors must have an environmental permit/environmental approval.

			recommendation; or c. the obligations stipulated in the EIA or UKL-UPL documents are not implemented by the person in charge of the business and/or activity.	
	Article 59 (4) Waste Management of hazardous and toxic must obtain a Business Licence, or approval from the Central Government or Regional Government. (5) The Central Government or Regional Government must include environmental requirements that must be fulfilled and obligations that must be obeyed by the hazardous and toxic waste manager in the Business Licence, or approval of the Central Government or Regional Government.		Article 40 (1) An environmental permit is a requirement to obtain a business and/or activity permit. (2) In the event that the environmental permit is revoked, the business and/or activity permit is cancelled. (3) In the event that the business and/or activity undergoes changes, the person in charge of the business and/or activity is obliged to renew the environmental permit.	Waste Management of hazardous and toxic must have an environmental licence.

CONCLUSION

1. The analysis results show that the licensing requirements in legislation for environmental related to the construction and operation of nuclear power plants do not conflict with nuclear energy legislation.

2. There is a change in nomenclature in implementing the authority in environmental implementation. Namely, the environmental permit is changed to environmental approval as mandated in Article 13 Letter B of the Law on Job Creation.

3. Synchronisation for harmonization of national legislation will be formed if there is harmony, balance, consistency, and no normative conflict between one legal regulation and another, vertically and horizontally. The ideal step in synchronizing national laws and regulations is realized by harmonizing, balancing, and maintaining the consistency of the legal system. The Synchronisation of legislation is realized to uphold legal certainty, legal order, law enforcement, and legal protection.

4. Synchronization of licensing requirements not only at the level between laws but also between government regulations. Licensing requirements in constructing and operating

nuclear power plants should be synchronous between environmental and nuclear energy regulations.

5. There needs to be synchronization at the level of implementing regulations for the nuclear energy and environmental sectors.

References

[1].Asshiddiqie, J., & Ali Safa'at, M. (2006). Theory Hans Kelsen Tentang Hukum, Cetakan 1. Jakarta: Sekretariat Jenderal dan Kepaniteraan Mahkamah Konstitusi RI, 2006, h. 110.

[2].Maria Farida Indari, Ilmu Perundang-Undangan: Jenis, Fungsi dan Materi Muatan,(Yogyakarta, Kanisius, 2007), h. 56.

[3].Buku Teori dan Hukum Perancangan Perda yang ditulis Dr. Jazim Hamidi SH, MH, Ria Casmi Arrsa, Nurul Laili Fadhilah (2012: 40),

[4].Lihat Kompas.com, "Presiden Jokowi: Ada Lebih dari 42.000 Regulasi, Coba, Pusing Tidak?", diakses melalui https://regional.kompas.com/read/2017/10/09/07291101/presiden-jokowi-ada-lebih-dari-42000-regulasi-coba pusing-tidak, pada 18 Maret 2021.

[5].Lihat Kompas.com, "Jokowi Targetkan Setiap Menteri Pangkas 100 Aturan Penghambat Investasi Per Bulan", diakses melalui https://nasional.kompas.com/read/2018/03/28/15365951/jokowi-targetkan-setiap-menteripangkas-100-aturan-penghambat-investasi-per, pada 18 Maret 2021.

[6].Jimly Asshiddiqie, Omnibus Law dan Penerapannya di Indonesia, Jakarta : Konstitusi Press, 2020, hlm. 1.

[7].Kementerian Koordinator Bidang Perekonomian Republik Indonesia, Omnibus Law Cipta Lapangan Kerja, http://dikti.kemdikbud.go.id/wp-content/uploads/2020/10/Booklet-UU-Cipta-Kerja.pdf, hlm. 2 dan 3.

[8].Undang-Undang Nomor 11 Tahun 2020 tentang Cipta Kerja

[9].Undang-Undang Nomor 10 Tahun 1997 tentang Ketenaganukliran. Jakarta. 1997

[10]. Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup; Jakarta 2009.

[11]. Indari, M. F. (2007). Ilmu Perundang-Undangan: Jenis, Fungsi dan Materi Muatan,. Yogyakarta: Kanisius, 2007, h. 56.

[12]. Bień-Kacała, A. (2017). Hierarchical Legal System in Constitutional Law - The Advantages and Disadvantages. Review of Constitutional Law/Przegląd Prawa Konstytucyjnego.

[13]. Kelsen, H. (1999). General theory of law and state. The Lawbook Exchange, Ltd.

[14]. Kopa, M. (2019). Hierarchy in Law: Advantages and Disadvantages. Journal of Legal Studies.

[15]. Stoiber, Carlton, dkk, (2003), Handbook of Nuclear Law, Vienna: IAEA

[16]. Stoiber, Carlton, dkk, (2010), Handbook of Nuclear Law: Implementing Legislation, Vienna: IAEA

[17]. IAEA, (2006) GSR Part 1 (Rev.1) Part 1 (Rev.1) Governmental, Legal Governmental, Legal and Regulatory Framework for Safety, Vienna: IAEA.

[18]. IAEA, (2007), NG-G-3.1 Milestones in the Development of a National Infrastructure for Nuclear Power, Vienna: IAEA

[19]. IAEA, (2011), SSG-16 Establishing the Safety Infrastructure for Nuclear Power Programme, Vienna: IAEA.

[20]. Dr. Danrivanto Budhijanto, SH., LL.M in IT Law, FCBArb, Buku Cyberlaw & Revolusi Industri 4.0, Logoz Publishing, 2019.

[21]. Dong Ju Jang a, Hyung Jin Shim, Development of a Regulatory Framework for Risk-Informed Decision Making, Journal of Nuclear Engineering and Technology, Elsevier, 2020.

[22]. Nuclear Energy Agency (NEA), Nuclear Safety Technology and Regulation 2022, Handbook: Harmonising the Nuclear Licensing Process for Emerging Technologies: A Global Path Forward

[23]. Licensing Process for New Nuclear Power Plants in Canada, Published by the Canadian Nuclear Safety Commission, CNSC Catalogue number INFO-0756 Rev. 1.

[24]. SS Bajaj (2013), Regulatory practices for nuclear power plants in India, Journal of SadhanaVol.38, Part5, October 2013, pp.1027–1050. Indian Academy of Sciences.

[25]. Andi Hanif (April 2019), Developing of Floating Nuclear Power Plant in Indonesia: Prospect and Challenge, Thesis Master of Engineering, Nuclear Energy and Nuclear Technology Engineering Departement, Tsinghua University, China.

[26]. Aigul Nukusheva & Guldana Karzhassova & Dinara Rustembekova & Tatyana Au & Kulbagila Baikenzhina (2021). "International nuclear energy legal regulation: comparing the experience of the EU and the CIS countries," International Environmental Agreements: Politics, Law and Economics, Springer, vol. 21(4), pages 647-667, December.

[27]. Raetzke, Christian. (2014), "Nuclear law and environmental law in the licensing of nuclear installations", Nuclear Law Bulletin, OECD Publishing, vol. 2013(2), pages 55-88.

[28]. Harsanto Mursyid, Muhammad Haidar Daulay, Andita Aulia Pratama, Dwi Laraswati, Nisa Novita, Anjelita Malik, Ahmad Maryudi (2021), “Governance issues related to the management and conservation of mangrove ecosystems to support climate change mitigation actions in Indonesia”, Forest Policy and Economics Journal 133 (2021) 102622, journal homepage: www.elsevier.com/locate/forpol