

Role of international *soft law* instruments in nuclear energy law on the case of implementation CoC on safety of RR in Poland.

1. The multiverse of international legal law system sources

The international law system is a unique area that is constantly changing. This system is an area of various types of legal-binding and soft law norms and provisions. The basics of international law are contained to hard law sphere legal-binding agreements between States. These agreements are called treaties or conventions. These documents have a codified procedure of assessment and it's a long period to firstly prepare the draft of the document that would be satisfying to all parties and secondly, the process of implementation of these documents in different States has extending character. The main division in legal-binding hard law documents is separated for bilateral and multilateral agreements between States. For example, bilateral agreements in the nuclear law system are some kind of deal between the two States. It could be a solution for problems like transport or managing radioactive wastes into final disposal between State with operational research reactor, but hasn't disposal site and State that is a nuclear fuel supplier. Some concerns make some scholars called hard law as a law of the stronger. For example: "The Nuclear Non-Proliferation Treaty reflected an explicit bargain: weaker states accepted the existing nuclear oligopoly; powerful states agreed to pursue weapons restraints and technology transfer. Obligation was high, though limited by escape clauses and the twenty-five-year renegotiation clause. Precision was high in limiting the transfer of military technology, but lower with regards to commercial technology transfers. Delegation to the IAEA has been largely controlled by the major powers (who monopolize the necessary expertise)"¹ One-of-a-kind in the international law system is a United Nations Security Council resolution. These documents have a legal-binding character and are unique hard law sources in the international law system.

Hard law can have a serious impact on national legislation and cause multiple struggles in the process of implementing this into national law. "A major advantage of softer forms of legalization is their lower contracting costs. Hard legalization reduces the post-agreement costs of managing and enforcing commitments, but adoption of a highly legalized agreement entails significant contracting costs. The costs of hard legalization are magnified by the circumstances of international politics. States, jealous of their sovereign autonomy, are reluctant to limit it through legalized commitments. Security concerns intensify the distributional issues that accompany any agreement, especially ones of greater magnitude or involving greater uncertainty. Negotiations are often multilateral. The scope of bargaining is often not clearly delimited, since the issues themselves are ill defined (for example, is free trade in magazines an economic issue or a cultural one?). Finally, the thinness of the international institutional context (including the low prevailing level of legalization) does little to lower the costs of agreement."²

The next part of international law is an area of recommendations from international organizations. "Resolutions, recommendations, or decisions made by international organizations have, as a general rule, a non-binding character, unless their binding force is provided for in the constitutive treaty, or when such resolutions reflect principles or rules enshrined in recognized sources of international law. Yet despite their generally non-binding character, resolutions of

¹ Kenneth W. Abbott and Duncan Snidal, *Hard and Soft Law In International Governance*, IO and MIT 2000, p. 450

² *ibidem*, p. 435

international organizations may be of legal relevance.”³ In the international law system, there is an uncountable number of these documents. In general, this type of soft law norms are non-binding, however many countries see the benefits to the domestic nuclear law system and voluntarily implement them into the legal framework.

The last part of the international nuclear international law regime is the regional sources of law. Poland from 2004 is a Member State of the European Union and Euratom. In this case, this country is entitled and obliged to implement Community law norms. Also, several non-binding acts are common to all Member States that have advisory characters and aren't obligatory to implement to States, like European Commission opinions or recommendations.

2. Role of non-binding instruments

Soft law in the international nuclear energy regime has a very specific position.” First and foremost, soft law is of particular relevance in the field of good faith. This does not mean that somehow good faith transforms soft law into binding law.,⁴ On one hand, by the nature of this kind of law, it is voluntary to implement it into national law. On the other hand, provisions contained in these documents have been written with quasi-legal character, so there are no difficulties in comprehensively including these documents in the national nuclear law regime. Katia Boustany in one of her papers had included a quote that can be an explanation of the nature of soft law: "One of the attractions in using an instrument of soft law rather than a conventional tool is precisely the fact that the responsibility for implementing the standards which it sets out may not be limited to States alone; it may transcend their inherent normative function – the exercise of which may prove uncertain – in order to target directly also other addressees of the normative corpus – its ultimate addresses. However, this catalysis, if it is to take place, depends on a large number of imponderables, such as the importance of the problem concerning the government's political agenda, the ratification of the conventional instrument by the parliament as well as the adoption by it of subsequent legal modifications, and the promulgation of implementing rules, to mention but a few. Even so, this disregards the complexity of the formal negotiations of a convention and its inevitable shortcomings because of the concessions that would have been made on all sides to produce a text that can be regarded as "consensual".⁵

The most important thing in soft law, which is attractive to the Member States is the flexibility of this type of law. In comparison to legal-binding treaties, which have the same provisions to every State that are entitled to sign up these documents, soft law instruments offer an easy way to increase the level of complexity of national legislation in a way that is the closest to every Member State.

The nuclear law regime has a unique character in the international law system. That character shows up in a large number of soft law documents. Soft law plays a very important role in the area of peaceful use of nuclear energy. This role appears in a specific character of mixed legal binding norms and advisory provisions in non-binding documents.⁶ This cooperation between these two legal systems is so fluent, for example, IAEA Safety Standards

³ Daniel Thurer, *Soft Law*, *Max Planck Encyclopedia of Public International Law*, Oxford 2015, p. 4

⁴ *ibidem*, p. 8

⁵ Boustany K., *A Code of Conduct on the Safety of Radiation Sources and the Security of Radioactive Materials. A new Approach to the Normative Control of a Nuclear Risk?*, NLB 2000, nr 1

⁶ ElBaradei, M., E. Nwogugu and J. Rames (1995), “*International law and nuclear energy: Overview of the legal framework*”, IAEA Bulletin, Vol. 37, No. 3, IAEA, Vienna, p. 16.

about physical protection of radioactive materials was included in legal-binding treaties signed after the Chernobyl accident in 1986.⁷⁸ Also, treaties in the international nuclear law regime are concerned as strengthened soft law norms and are strictly connected with them. It's like increasing their importance and shows that these two types of norms can interact in some areas of law.⁹

One of the main questions that national authorities ask themselves when they have the opportunity to acquire a new soft law document is simple: "How many benefits will I achieve after implementation of this paper?" Some benefits, except strengthening the national legislature and improved level of security are strictly connected with the authority of this organization that creates soft law norms. The Authority of the international organization is impossible to define, however, some clues can help Member State to recognize the fact that this or that organization has authority in the international nuclear law regime. Soft law is endorsed by an organization entitled with respected status in the international community and a big authority can have a bigger impact on national authorities than legal-binding treaties. A code will often encompass strong political commitments or moral obligations, indeed commitments and obligations that may well be stronger than many legal obligations.¹⁰ Soft law can replace hard-law treaties in areas of law where no agreement of hard law can be achieved or these treaties will be ineffective.

The role of international organizations in the law-making process of creating soft law is hard to describe. Firstly, concerns are focused on the previously discussed authority of international organizations. This authority allows that organization to promote and strengthen the meaning of special soft law documents and endorsed, for example, political commitment from the Member States to make a statement that they have the will to implement soft law documents into the national legal system. Secondly, international organizations share experts in nuclear law. In that way, these experts are some kind of guarantee that this soft law document will have proper quality and structure that allows the Member States to easily implement those provisions into national law.

That role of the international organization constantly has an impact on international law. "The international system for the peaceful and safe use of nuclear energy is characterised by a mix of legally binding rules, agreements and regulations and non-binding advisory standards and codes. This mix is constantly changing. Very important steps forward have already been made and the development of this system is a continuous process. Non-binding advisory codes and standards are gradually becoming binding commitments. Indeed, many countries are accepting, step by step, recommendatory international regulations as a basis for their national legislation. Yet in order to assist and support this development, it is imperative that the concerned parties are actively involved in the progressive development of the system."¹¹

In the nuclear law regime, several international organizations have the authority and reputation to establish soft law provisions and have strong expectations that these documents

⁷ Lamm V. *Reflections on the development of international nuclear law*, NLB 2017, p. 31-44

⁸ Pelzer, N. (2006), "Learning the Hard Way: Did the Lessons Taught by the Chernobyl Nuclear Accident Contribute to Improving Nuclear Law?" in NEA and IAEA (eds.), *International Nuclear Law in the Post-Chernobyl Period*, OECD, Paris, pp. 83-84

⁹ Boyle, A. (1999), "Some Reflections on the Relationship of Treaties and Soft Law", *International and Comparative Law Quarterly*, 1999, Vol. 48, Part 4, p. 906.

¹⁰ Wetherall A., *Normative Rule Making at the IAEA: Codes of Conduct*, NLB 2005, nr 1

¹¹ *ibidem*, p. 24

will be acquired by Member States and implemented into national law systems of these countries. The first of these organizations is the IAEA.¹² This international organization has Member States all around the globe and became the most important organization in the creation of soft law documents. IAEA is a specialized agency connected and established by the UN and however naturally gained authority from the UN. The second organization, also with worldwide character is NEA¹³, the organization that has a significant contribution in the soft law regime, by their Nuclear Law Bulletin series. In this periodic expert magazine, scholars presented their papers that are helpful to Member States to explain and easily implemented soft law provisions. The third organization that has a significant role in soft law system is Euratom¹⁴, a regional organization that is a part of the European Union. Euratom can affect the Member States by legal-binding directives, but also at advisory opinions or recommendations.

3. Types of *soft law* in nuclear energy law

In nuclear energy law, several soft law sources can be classified into different series. IAEA in their advisory activity created some soft law document series that could be briefly described and throughout the years became a worldwide authority organization that created publications on the most comprehensive level of complexity in all areas where exists a possibility of contact with radioisotopes. Creating norms activity IAEA conduct since the 1960s, on beginning in radiological protection and safety of nuclear materials transport. In 1960 was adopted document: "The Agency's Health and Safety Measures"¹⁵, updated in 1976. In 1961 was adopted "Transport Regulations"¹⁶ In 1989, after the Chernobyl accident, IAEA increased the level of nuclear security. To accomplish that policy, IAEA Secretariat introduced a hierarchical structure of safety and security standards, which was divided into Safety Fundamentals, Safety Standards, Safety Guides, and Safety Practices. IAEA Standards are drafted and published by Agency on legal basics prescribed in Article III.A.6 IAEA Statute in cooperation with other international organizations¹⁷ and in general, these documents are the most important and the most widely implemented in the nuclear safety and radiological protection area. On the top of the hierarchy have place one document: "Fundamental Safety Principles – SF-1"¹⁸ determining ten basic rules in nuclear safety and radiological protection areas. On the next level in the hierarchy are documented series called: "Safety Requirements" which describes how to achieve particular rules provided in Fundamental Safety Principles. In some areas of nuclear law in the Safety Series are also included Special Safety Guides, described in a very precise way implementation of some provisions included in previous documents.

¹² International Atomic Energy Agency, an international organization established on 29 July 1957 in Vienna as an autonomous organization of the United Nations by IAEA Statute.

¹³ The OECD Nuclear Energy Agency (NEA) is an intergovernmental agency that facilitates cooperation among countries with advanced nuclear technology infrastructures to seek excellence in nuclear safety, technology, science, environment, and law. The NEA operates within the framework of the Organisation for Economic Co-operation and Development (OECD) and is located just outside Paris, France.

¹⁴ The European Atomic Energy Community (EAEC or Euratom) is an international organization established by the Euratom Treaty on 25 March 1957 with the original purpose of creating a specialist market for nuclear power in Europe, by developing nuclear energy and distributing it to its member states while selling the surplus to non-member states.

¹⁵ INFCIRC/18

¹⁶ IAEA, *Regulations for the Safe Transport of Radioactive Material*, IAEA Safety Series No. 6. Multiply times updated.

¹⁷ OECD/NEA, ILO, ICRP, EURATOM, IMO, WHO, FAO, UNEP, and others.

¹⁸ IAEA, *Fundamental Safety Principles*, IAEA Safety Standards Series, Safety Fundamentals, No. SF-1, Vienna 2006

Different situations are concerned with Codes of Conduct. This document has not got the legal background in the IAEA statute. In the procedural way documents from Safety Series are drafted by IAEA Secretariat and approved by the Board of Governors. Codes of Conduct are drafted by the IAEA Secretariat, adopted by the Board of Governors, and endorsed by the General Conference resolution. Also, Codes have more political and general character in comparison to the strictly technical character of documents from the Safety series. Code of Conduct has an assessment that allows the Member States to make a non-binding political commitment of obligation to implement provisions contained in this Code.

4. Codes of Conduct

IAEA Codes of Conduct is one of the most important documents in the international safety and security regime of peaceful exploitation of radioactive sources. One of the main principles of the IAEA mission is to endorse the highest possibility of security into the Member States legislation regime.

In general, specific research reactors create legal circumstances to regulate this area of nuclear safety. In this case, there are no legally binding treaties in specific regulation of the research reactor problem.¹⁹ To prevent malicious and uncontrollable exploitation of these nuclear facilities, IAEA General Conference endorsed the Board of Governors, also requested and adopted a Code of Conduct. In the foreword fathers of Code input the main target: "While the Code of Conduct on the Safety of Research Reactors is non-binding, it should serve as guidance on the development and harmonization of laws, regulations, and policies on the safety of research reactors. It provides 'best practice' guidance to the State, the regulatory body and the operating organization for management of research reactor safety."²⁰

IAEA in December 2013 adopted Guidelines for the Review of Research Reactor Safety: Revised Edition. It is comprehensive and widely regulated in all aspects of the safety and security of research reactors. This document is strictly connected with the third tier of implementation of IAEA standards into national law because it is some type of step-by-step preparation for the INSARR mission.²¹ In the foreword, this document is connected with provisions of the Code of Conduct on the Safety of Research Reactors²². This Code is also strictly connected to one of the IAEA Safety Standards documents, "Implementation of a Management System for Operating Organizations of Research Reactors". This document provides generic guidance to aid the establishment, implementation, assessment, and continual improvement of a management system and provides specific guidance for research reactor operating organizations.²³

5. Code of Conduct on the Safety of Research Reactors

¹⁹ *The Convention on Nuclear Safety* (1996) establishes the fundamental safety principles for achieving and maintaining a high level of nuclear safety worldwide through the enhancement of national measures and international cooperation for nuclear power reactors, but that it does not apply to research reactors.

²⁰ *Code of Conduct on the Safety on the Research Reactors*, Vienna 2006

²¹ About the INSARR mission and other missions later in the article.

²² Since then, and in accordance with its program on research reactor safety, the IAEA has conducted safety review missions in its Member States to enhance the safety of their research reactor facilities through the application of the Code of Conduct on the Safety of Research Reactors and the relevant IAEA safety standards. https://www-pub.iaea.org/MTCD/Publications/PDF/SVS-25_web.pdf, access 20.05.2021

²³ *Implementation of a Management System for Operating Organizations of Research Reactor*, IAEA Safety Reports Series No. 75, Vienna 2013, https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1584_web.pdf, access 20.05.2021

Code of Conduct on the Safety of Research Reactors was adopted in March 2004, as a result of several years of consistent working at security increase level in the research reactors area. This route was finished by the adoption of this Code, which was started in 1994 when the CNS Convention was adopted. "A very important instrument for areas that were previously not regulated by the treaties was the Convention on Nuclear Safety,²⁴ adopted in 1994 under IAEA auspices. The aim of the CNS is "to achieve and maintain a high level of nuclear safety" in land-based civil nuclear power plants, "to establish and maintain effective defences in nuclear installations against potential radiological hazards in order to protect individuals, society and the environment", and "to prevent accidents with radiological consequences and to mitigate such consequences should they occur"²⁵ The most weakness of this Convention was that negotiators had chosen to limit the scope of CNS only to land-based civil nuclear power plants and excluding the research reactors area because there was and is a various number of countries that have research reactors but haven't nuclear power development program. After that CNS Convention creates some unique empty space of unregulated nuclear law. That state of things should be changed. „Back in 1998, the International Nuclear Safety Group (INSAG) had raised its concerns on the safety of research reactors with the IAEA Director General and, in 2000, it had suggested that the Vienna Agency develop a protocol (to the CNS) or another equivalent legal instrument to address this problem. The IAEA's response was to implement an international research reactor safety enhancement plan. A key part of this plan was the preparation of a code of conduct. An open-ended working group of legal and technical experts got to work and its meetings culminated in the final version of the code in 2004."²⁶ Worth noticing is a fact that the game changer was a General Conference resolution GC(44)/RES/14. In this resolution General Conference requested the Secretariat "within its available resources, to continue work on exploring options to strengthen the international nuclear safety arrangements for civil research reactors, taking due account of input from INSAG and the views of other relevant bodies". the main goal to achieve in this document was established international action plan with conjunction with the Member States to start to prepare of a Code of Conduct "that would clearly establish the desirable attributes for management of research reactor safety".²⁷

On 24 September 2004, IAEA adopted a General Conference resolution GC(48)/RES/10. In the section 8 General Conference: „Welcomes the adoption by the Board of Governors in March 2004 of the Code of Conduct on the Safety of Research Reactors and endorses the guidance for the safe management of research reactors set out in the Code, encourages Member States to apply the guidance in the Code to the management of research reactors and requests the Secretariat to continue to assist Member States in the implementation of the Code of Conduct on the Safety of Research Reactors, and associated safety guidance within available resources."²⁸ What's interesting, in this part of the General Conference resolution there are no provisions establishing calling the Member States to make a political commitment to the Director-General. In section D, paragraph 8 there are provisions that have not been included in the part concerning

²⁴ *Convention on Nuclear Safety* (1994), IAEA Doc. INFCIRC/449, 1963 UNTS 293, entered into force 24 October 1996 (CNS).

²⁵ Lamm V. *Reflections on the development of international nuclear law*, NLB 2017, p. 36

²⁶ Reyners P., *Three International Atomic Energy Agency Codes* (in:) OECD/NEA, *International Nuclear Law: History, Evolution, and Outlook*, Paris 2010

²⁷ *Code of Conduct on the Safety of Research Reactor*, Foreword.

²⁸ IAEA General Conference resolution GC(48)/RES/10. This resolution is connected with General Conference resolution GC(47)/RES/7, wherein part B, para 4 General Conference: „Urges each State to write to the Director General that it fully supports and endorses the IAEA's efforts to enhance the safety and security of radioactive sources, is working toward following the guidance contained in the IAEA Code of Conduct on the Safety and Security of Radioactive Sources, and encourages other countries to do the same.”

about Code of Conduct on the Safety of Research Reactors: „endorses this Guidance while recognizing that it is not legally binding, notes that more than 30 countries have made clear their intention to work towards effective import and export controls by 31 December 2005, and encourages States to act in accordance with the Guidance on a harmonized basis and to notify the Director General of their intention to do so as supplementary information to the Code of Conduct.”²⁹ That lack of endorsed Member States to make political commitments significantly weakens soft law meaning of the Code of Conduct on the Safety of Research Reactors. This lack of provisions implied no official records of Member States that *de facto* implemented this Code to their domestic law system. This Code, as all Codes of Conduct, has the non-binding character of soft law documents. It's strictly voluntary for Member states to adopt this document and make any unilateral obligations in the self-binding domestic law area. However, this Code notwithstanding has a significant role in the safety and security area of research reactors, and associated with him additional documents are the only consistent system that exists in the worldwide nuclear law regime.

6. Code of Conduct on the Safety of Research Reactors - Implementation in Poland. History of research reactors in Poland

The history of the second of research reactors in Poland, called MARIA, started in 1964 when there was established a program of exploitation of the second Polish research reactor for various types of science experiments. MARIA was under construction from 1970 to 1977, then it started to be operational. In 1985, the reactor was under comprehensive modernization, in order to provide the highest possible level of security and safety these days. Modernization ended in 1993 and from that year MARIA is still under exploitation to the present day. In 2004, when the Code of Conduct on the Safety of Research Reactors was adopted, the MARIA reactor was after a serious implementation that caused the security and safety of the reactor.

Analyzing legal background in 2004, primarily since 4 years in nuclear law regime in Poland has been regulated by Atomic Law act 2000, which contained basic legal norms in nuclear safety and nuclear security area, from origin CNS Convention, ratified in Poland³⁰. Moreover, in 2004 there was adopted Atomic Law act update, provided by the necessity of harmonization the domestic legal system with European Union law. In this version generally, research reactors were supported by nuclear law norms, but some work remains³¹. For example, the definition of a nuclear facility and the visible adjustment role of the regulatory body, postulated in the Code of Conduct, has been modified in the 2011 update in the research reactors area.

The second comprehensive review of the MARIA research reactor was after the Fukushima accident. After 2011, Polish National Atomic Agency reviewed all possibilities of causing an accident that could be dangerous and find it that there is no possibility of external factors that can create a dangerous situation to MARIA's research reactor. Nowadays, the MARIA research reactor is after two IAEA INSARR missions – in 2013 and a follow-up mission in 2017. The second mission in ending the rapport team of experts finds that Poland's

²⁹ *ibidem*

³⁰ See original text of Atomic Law act, version from 29th November 2000: [D2001003.pdf \(sejm.gov.pl\)](#), access 28.05.2021.

³¹ See text of 2004 Atomic Law act update: [Microsoft Word - D20040632L.doc \(sejm.gov.pl\)](#), access 28.05.2021.

only research reactor has improved safety since the previous review three years ago, but that work remains to address recommendations related to organizational and technical aspects.³²

7. Code of Conduct and domestic law – relation and influence

Before analyzing the relations between the Code of Conduct on the Safety of Research Reactors and national law, it's worth taking light into the Polish domestic nuclear law system. In Poland, the national regulatory body is PAA, which President PAA is an organ entitled to control and licensing of the sole research reactor in Poland – MARIA. In the Polish legal system supervision to PAA have the Ministry of Climate, as a part of the government in Poland. In this Code, the most important role has been given to the operating organization. First of all, in this Code there are ensured suggestions of principles to create a comprehensive safety assessment throughout the lifecycle of the reactor in accordance with its original assumption. Other proposals included in this section of this Code are similar to previous pieces of advice with some differences. Major rules are about evaluating that research reactors can have an impact on society and the environment, establish procedures for the possibility of international technical and engineering cooperation, appoint a safety review committee, and minimize the amount of radioactive waste. The operating organization should also prepare and implement a technical preservation program to maintain the safety of the reactor and reactor fuel in case of extended shutdown or decommissioning.

As mentioned above the specific position of the Polish nuclear energy law system in regional and international nuclear energy law regime can be also observed in the research reactors area. Hereafter, the Code of Conduct on Safety of Research Reactors is recognized as a non-binding document relevant to Convention on Nuclear Safety, caused its mostly copy-paste provisions referred to CNS Convention, similar internal construct, and many more. Provisions included in the Convention were implemented in Polish law in two ways. Primary, after the ratification of this international agreement, basic norms in nuclear safety and nuclear security area³³ and secondly as a necessity of transposition Euratom directive³⁴.

The main problem in relation between the Code of Conduct and domestic law is that in general this document is recognized in Polish nuclear energy law as important guidance in the research reactors area. However, the research reactors are not widely legally, definitively separated from nuclear energetic reactors and other nuclear facilities. The legal position of research reactors have some unique assignments and factors, like the non-commercial character of operating organization, usually strictly connected with national research institutes, so in all aspects of research, reactors area could be observed strong and comprehensive overview and assistance from State through several actions and mechanisms implemented in Atomic Law act. For example, the Code of Conduct in section V.13 states that: “The State should ensure that the operating organization has a financing system for safe operation of the research reactor”³⁵.

As has been mentioned above, Poland is a country with a long and divergent nuclear safety culture. Since first major achievements in the research reactors area, Poland started to

³² IAEA Mission Sees Improved Safety at Polish Research Reactor, Says Work Remains, <https://www.iaea.org/newscenter/pressreleases/iaea-mission-sees-improved-safety-at-polish-research-reactor-says-work-remains>, access 20.05.2021

³³ See the first version of the Atomic Law act from 2000: [D2001003.pdf \(sejm.gov.pl\)](https://www.sejm.gov.pl/D2001003.pdf), access 27.05.2021

³⁴ See 2009/71/EURATOM directive: [EUR-Lex - 32009L0071 - PL - EUR-Lex \(europa.eu\)](https://eur-lex.europa.eu/lexuri-pluri/dir/dir_2009_0071.html), access 27.05.2021

³⁵ *Code of Conduct...*, p. 5-6.

construct their nuclear facilities and chosen location and siting of construction near the capital, in Otwock-Świerk, under 100 km at the south of Warsaw. In this village, there are also major research institutes concerned about the nuclear science area, like the National Centre of Nuclear Research or the Polish Institute of Nuclear Physics POLATOM. The NCBJ is also an operating organization in the understanding of the Polish Atomic Law act³⁶. Hereunder provision from the Code of Conduct is established in article 33 in the Atomic Law act. Ensuring nuclear safety and strengthening nuclear culture is provided by *de facto* State control of functioning the operating organization under targeted subsidies up to 85% of costs of functioning. Referred in Atomic Law provisions there is practically unavailable to construct research reactors in Poland by other than a national research institute. Research reactors location seemed also to be narrowed to mentioned above Otwock-Świerk location, due to targeted subsidies in physical protection of nuclear facilities area. This example is proving that non-binding provisions of the Code of Conduct are implemented into the Polish nuclear law regime in the research reactors area.

In many areas of Atomic Law act there are referrals in ordinances to include international and national safety norms, in particular the results of the most recent findings of research and progress in the nuclear law area. But in general, in the Polish bill there is used a keyword: "zalecenia" which means recommendations. In most ways, this keyword is relevant to the IAEA Safety Standards Series, because the ordinances that are drafted on legal basics of the Atomic Law bill have in most cases strictly technical character. In a comparison of this with the Code of Conduct on the Safety of Research Reactors, it's hard to say that there exists a possibility that this document can be included in this *recommendation* area. If the legislator in the drafting process included this document as referred to Atomic Law, it's possible to say that the Code is included as a soft law source in the Polish domestic law system. The second problem in defining that the Code has been implemented into the Polish nuclear law system is that Poland is the Member State of Euratom. Euratom, as a part of the European Union, is responsible on behalf of the Treaty of Euratom³⁷. In that way, the EU can establish directives that could take pressure on the Member States to change or update their national legislation. In this place, it is necessary to explain the legal position of Poland.

By giving an example of this multisource way of strengthening the Polish nuclear law regime it's necessary to explain the mechanism of periodic safety assessment reviews of research reactors. In one way, Member State can request to IAEA to visit the country and inspect research reactor in an expert mission session INSARR³⁸. One of the results of this mission is recommendations that can be useful to improve the national nuclear law framework.

³⁶ NCBJ fundamental/applied research profile combines nuclear power-related studies with various fields of sub-atomic physics (elementary particle physics, nuclear physics, hot plasma physics, etc.). The Centre is strongly involved in developing nuclear technologies and promoting practical applications of nuclear physics methods. <https://www.ncbj.gov.pl/en/about-us/ncbj-brief>, access 27.05.2021

³⁷ Consolidated version of the Treaty establishing the European Atomic Energy Community https://eur-lex.europa.eu/eli/treaty/euratom_2012/oj, access 28.05.2021.

³⁸ In Poland from 1989, IAEA conducted 10 expert missions that helped the government of Poland set a full action plan to improve national legislation and safety. On the IAEA official site, there are only four reports from missions that are available to everyone. In the conclusion of analyzing Guidelines for the Review of Research Reactor Safety, there could be spoken that document prepares Member State into INSARR mission in very specific and well-targeted advisory provisions. This mission is focused on strictly technical specifications, like safety assessment. In that scope, when there are a very large amount of different types of research reactors worldwide, frequently these reactors are connected with internal actions by the Member States and covered by state confidentiality IAEA takes the common practice of not publishing results of this rapport into the public.

NCBJ widely implemented all provisions from this Code to achieve the highest possible safety standard of the exploitation research reactor. As was said before, the Code of Conduct on the Safety of Research Reactors contains non-binding recommendations in a high level of generalization. In that case, this document can be treated as a set of general principles or some kind of policy direction. Poland, as a country that exploits research reactors for almost 50 years can be recognized as an exemplary country that implemented this Code of Conduct. Code of Conduct on the Safety of Research Reactors advisory regulated specific legal matters. In that case, it is a gesture of a particular Member State to regulate its part of the national nuclear law regime into the research reactor. That is why IAEA adopts Guidelines for the Review of Research Reactor Safety. It is a Revised Edition from 2013 that prepares Member State to INSARR mission. Specifically, Guidelines are not a form type of document as strictly connected with the Code as Guidances, because it is a part of the IAEA Services Series. In the foreword, this document is connected with provisions of the Code of Conduct on the Safety of Research Reactors³⁹ These Guidelines are a comprehensive list of review topics, from which any individual INSARR scope can be formulated, is based upon the safety requirements presented, and also upon the guidance on safety analysis and preparation of the safety analysis report. The Code of Conduct on the Safety of Research Reactors, which contains provisions on best practices to achieve a high level of safety, is an important basis for the definition of review areas. This guideline is a special document that can be a set of basic principles of how to incorporate and implement the Code of Conduct on the Safety of Research Reactors into domestic law.

8. Conclusions

Code of Conduct on the Safety of Research Reactors contains provisions that are basics in the research reactors area. European Union understands their constant pursuit to improve the safety and security of the legal framework of Member States. In this way, there are no signals to undermine that the Code is fully implemented in the Republic of Poland, which confirms results from the INSARR 2013 mission and follow-up mission in 2017. The Code, as has been written before, general and more political or programmatic character rather than strictly technical. However, this Code has in the past and in the present time strong influence in the domestic nuclear law regime, as a valuable pattern of model document of soft law. This document and other legal papers are involved in the process of constantly improving national legislation.

The international nuclear law regime is a constantly changing conglomerate of hard and soft law, non-binding, and binding norms. Some hard law norms have ceased to be used over time, some of the soft law non-binding norms transform into common practice and *de facto* took legal effect in Member States domestic law. Drafters of the Code of Conduct on the Safety of Research Reactors had a serious problem. How to create the Code, that in one way would be *quasi-legal* guidance for countries that have weak national legal frameworks with the low culture of administration, which is crucial in the area of law, where safety and security is the most basic principle and in another way a valuable supplement for the Member States that have research reactors in exploitation for decades?

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Since then, and in accordance with its program on research reactor safety, the IAEA has conducted safety review missions in its Member States to enhance the safety of their research reactor facilities through the application of the Code of Conduct on the Safety of Research Reactors and the relevant IAEA safety standards. https://www-pub.iaea.org/MTCD/Publications/PDF/SVS-25_web.pdf, access 28.05.2021.