Strål säkerhets myndigheten
Swedish Radiation Safety Authority

Author: Anna Södersten

Faculty of Law, Uppsala University, Uppsala

Research

2019:06

The Changing Landscape of Non-proliferation and the EU

Report number: 2019:06 **ISSN:** 2000-0456
Available at www.stralsakerhetsmyndigheten.se

SSM perspective

Background

Maintaining competence and knowledge within the nuclear non-proliferation area is a necessity for Sweden to keep its international commitments of peaceful use of all nuclear material. As part of this work the Swedish Radiation Safety Authority (SSM) made a call for research proposals related to Non-Proliferation for projects focused on the interplay between national and international legal aspects within safeguards, export control and illicit trafficking. The call resulted in SSM accepting a proposal from Faculty of Law at Uppsala university. The purpose of the project is to broaden the knowledge of the Euratom Treaty and its development within SSM.

Results

The report is divided into three parts. In the first part the author analyses the nuclear safeguards from a multilevel governance perspective; the international level, European level, and national level. The specific situation in four countries (Sweden, Finland, Germany and Spain) are used to exemplify how these levels interact and the different role of the Member State. The author found that whether a country chooses to have a national authority is a combination of tradition, timing and geopolitical situation. Furthermore, distinction between different types of governance was discussed where nuclear safeguards can be best illustrated as the combination of 'direct' and 'networked' modes.

The second part of the report is about the inner and outer 'face' of EU nuclear non-proliferation, examine what are the similarities and differences between the two. The final part examines some implications regarding safeguard in the light of Brexit. The author found that Brexit would mean a downscaling of the safeguards in the UK because of the exit from Euratom. A discussed possibility is for the UK to remain within Euratom, while leaving EU, which is legally possible yet not uncomplicated. The author finds that a full-fledged, exit is to be preferred, both for the United Kingdom and the other member states.

Objectives

Within nuclear non-proliferation SSM operates in several areas such as safeguards, export control and illicit trafficking, all with complex interplay with technical, political and legal aspects. SSM has a good collaboration with several Swedish universities of research focuses mainly on measurement techniques within nuclear safeguards. Political science and legal aspects of nuclear non-proliferation have been identified as an area where SSM can benefit from an enhanced collaboration, with a need to identify players with knowledge in the field to help to maintain the knowledge within Sweden.

Need for further research

As the legal aspects of the nuclear non-proliferation is complex, where rules are created and controlled at different levels and by different actors that may overlap, this area always need monitoring to maintain the desired competence within Sweden. Of the topics examined in this report Brexit still hold a lot of uncertainty, where the consequences for safeguards, export control and illicit trafficking for Sweden, Euratom and UK will show with time.

Project information

Kontaktperson SSM: Lars Hildingsson
Referens: SSM 2015-2773 / 3060006-02

Strål
säkerhets
myndigheten
Swedish Radiation Safety Authority

Author: Anna Södersten

Faculty of Law, Uppsala University, Uppsala

2019:06

The Changing Landscape of Non-proliferation and the EU

Date: January 2018
Report number: 2019:06 **ISSN:** 2000-0456
Available at www.stralsakerhetsmyndigheten.se

This report concerns a study which has been conducted for the Swedish Radiation Safety Authority, SSM. The conclusions and viewpoints presented in the report are those of the author/authors and do not necessarily coincide with those of the SSM.

SSM 2019:06

Table of content

Sammanfattning

Forskningsprojektet består av tre delar. Den första delen belyser vilken betydelse Euratomfördraget har idag. EU:s medlemsstater måste ta hänsyn till bestämmelser på tre olika nivåer: den internationella (dvs. den folkrättsliga) nivån, EU-nivån, och den nationella nivån). Hur samverkar dessa nivåer och vad tillför varje nivå? Denna del av projektet analyserar EU:s regelverk från ett så kallat multi-governance-perspektiv. Fokus är på de nationella myndigheterna. Vilka olika krav ställs upp på de nationella myndigheterna under de olika systemen? Hur har de nationella myndigheternas roll i medlemsstaterna förändrats över tid?

Den andra delen belyser kopplingen mellan nukleär icke-spridning och EU:s gemensamma utrikes och säkerhetspolitik (GUSP) som tog fart efter att Maastrichtfördraget trädde i kraft år 1992. EU har sedan dess utvecklat icke-spridningsstrategier och andra instrument. Hur förhåller sig dessa externa icke-spridningsinstrument till det interna icke-spridningsarbetet, som alltså gäller kontroll av medlemsstaterna? Finns det med andra ord någon enhetlighet mellan de 'interna' och 'externa' aktiviteterna i form av gemensamma principer och värden? Enhetlighet mellan externa och interna aktiviteter kan exempelvis vara viktigt för EU som trovärdig extern aktör men det är också att anse som ett grundläggande krav på alla rättsliga system.

Den tredje delen belyser följderna av Brexit. Först behandlas den konstitutionella frågan om 'partiellt medlemskap'. Alla EU:s medlemsstater är också medlemmar av Euratom. Det har alltid antagits att med EU-medlemskap följer också medlemskap i Euratom. Vad gäller då frågan om utträde? Vilka är argumenten för möjlighet till partiellt medlemskap i Euratom? Kan Storbritannien stanna som medlem i Euratom då Storbritannien lämnar EU? Några av följderna av Brexit kommer också att diskuteras. Det anförs att den kanske mest allvarliga konsekvensen rör området nukleär icke-spridning. Storbritannien är en av de två kärnvapenstaterna i EU (Frankrike är den andra). Utträde från Euratom betyder utträde från kärnkontrollsystemet.

Summary

The project consists of three parts. The first (and main) part examines the role of the Euratom Treaty today. The EU Member States have three (and some only two) levels of rules to take into consideration when it comes to safeguards: the international level, the EU level, and the national level. How do these levels interact and what is the 'added value' of each level? This paper analyses the EU legal framework of nuclear safeguards from a multilevel governance perspective. Focus is on the role of the Member State and the national authorities in particular. What are the requirements on the national authorities under the different levels of rules and how has this role evolved over time?

The second part sheds light on the outer and inner 'face' of EU nuclear non-proliferation. The Common Foreign and Security Policy and the Security Strategy (CFSP) comprise the 'outer face.' The Euratom safeguards is the 'inner face.' The inner and outer face are interconnected, but very seldom discussed in one context. This paper aims to bring these two aspects together. What are the links? Consistency and coherence between external and internal activities can be of significance if the EU is to be a credible global actor but it is also a requirement of any legal system.

The third part examines the implications of Brexit. It first addresses the constitutional issue of 'partial membership'. All EU member states are also members of the Euratom. It has always been assumed that with membership in the EU also comes a membership in Euratom. But, what about withdrawal? What are the arguments for 'partial membership'? It explores the possibility of the United Kingdom staying a member of Euratom, while leaving the EU. It then sheds light on some implications of Brexit as it relates to Euratom. It is argued that the most serious consequences are found in the area of nuclear non-proliferation. The United Kingdom is one of two nuclear weapon states in the EU (France being the other one). Withdrawal from Euratom means withdrawal from its control system, the system of so-called nuclear safeguards.

Paper I:
Safeguards and the Role of the Member State

1. Introduction

Most social science research on non-proliferation of nuclear weapons is devoted to issues where there is a perceived risk of proliferation. Rightly so, a lot of attention is devoted to the situation in North Korea and Iran, to sanctions and inspections. Much less attention is devoted to nuclear non-proliferation in countries deemed low in risk for proliferation. Yet, in most countries, non-proliferation measures are carried out.

This paper examines nuclear safeguards, that is, systems of inspection and verification measures that are aimed to control that nuclear material and technology is only used for peaceful purposes. In other words, nuclear safeguards are ways to control that nuclear weapons are not being developed. Almost all countries are subject to international nuclear safeguards. Considerable resources are devoted to nuclear non-proliferation in countries that are generally perceived safe. Yet, very little scholarly attention has been paid to legal issues.[1]

This paper analyses nuclear safeguards from a so-called multilevel governance perspective. The EU Member States have three (and some only two) levels of rules to take into consideration: the international level, the EU level, and the national level. How do these levels interact and what is the 'added value' of each level? What is the role of the Member State under the different levels of rules?

Some EU Member States have a specific national authority for the control of the use of nuclear energy to prevent nuclear non-proliferation. But there is no requirement under EU law to have such a national authority; it is optional. As this paper shows, some Member States have chosen to keep their national authority in this field. In this light, what responsibilities do the authorities have? How much discretion do the national authorities have and to what degree can they act independently from the Commission and the IAEA? Moreover, what is the relationship between national authorities and transnational networks, such as the ESARDA[2]?

In addition to the multilevel governance perspective, the paper takes a comparative approach and it studies the multilevel legal framework in some EU Member States. Obviously, a selection had to be made; it would be too cumbersome to study all 28 Member States. Most safeguard activities take place in Member States with nuclear power reactors. Therefore, only Member States with nuclear reactors will be examined.[3] As there are currently 14 Member States with nuclear reactors, a further selection had to be made.

---

[1] One of the few legal commentaries on EU nuclear safeguards is Darryl A. Howlett, *Euratom and Nuclear Safeguards* (Basingstoke: Macmillan and Centre for International Policy Studies, University of Southampton, 1990).

[2] ESARDA (European Safeguards Research and Development Association).

[3] As of February 2016, there were 185 nuclear reactors in operation and 16 under construction. See the website of the European Nuclear Society: https://www.euronuclear.org/info/encyclopedia/n/nuclear-power-plant-europe.htm. In the EU, there were at the same time 128 nuclear reactors operating in 14 Member States. 26,9 % of the electricity was from nuclear energy. See the website of the World Nuclear Association: http://www.world-nuclear.org/information-library/country-profiles/others/european-union.aspx

The Member States selected are Finland, Germany, Sweden, and Spain.[4] These particular Member States because they provide a number of particular insights. Germany is chosen because it is one of the founding members of the EU. It does not have a national authority for safeguards. This means that Germany has only two levels to take into consideration: the international level and the EU/Euratom level. The same is true for Spain: it does not have a separate authority for nuclear safeguards. Spain is also chosen because it is one of the biggest Member States of the EU, in terms of population. Finland and Sweden are chosen because they have decided to keep their national authority in the field of safeguards and because they entered the EU/Euratom at the same time. Moreover, they are very similar in constitutional and administrative terms.

It is important to point out that as the number of cases studied is small, the findings cannot be other than descriptive. However, this does not mean that some conclusions cannot be drawn. The paper shows that the role of the Member State (or the role of the national authority) differs quite significantly between different Member States. As a result, EU efforts vary and the level-playing field for nuclear operators may also vary.[5] As the purpose of EU law generally is to even out differences between Member States, the situation is not optimal.

The paper is organized in the following way. The next section, part 2, explains and discusses the analytical framework of the paper: the multilevel governance perspective. Part 3 briefly presents the international legal framework and part 4, the EU (Euratom) legal framework. Part 5 examines the relationship between the Euratom and the IAEA. Part 6 examines the role of the national authority in different Member States. Part 7 briefly discusses the role of transnational networks in multilevel governance. Part 8 concludes.

2. Multilevel Governance

The multilevel governance approach is useful for this study as it can help to shed light on the fact that rules are created at different levels and by different actors. This approach recognizes that it is becoming increasingly difficult to draw dividing lines between legal orders at different levels; international law is increasingly coming to play a role in national (and EU) legal orders. It also recognizes that there is an increasingly broader range of regulatory fora: international organizations, bodies with specific technical tasks, and informal structures. This development means that public tasks are increasingly assumed by actors other than traditional government institutions and that national legal systems must recognize rule-making by bodies at intertwined levels, beyond the nation-state. The multilevel governance literature often refers to this phenomenon as ‘governance without government’.

Moreover, the approach recognizes that there is no sharp line between binding rules (the multilevel governance literature refers to ‘hard’ law) and non-binding norms of high practical importance (‘soft’ law). A further important aspect of this approach is the existence of networks that informally create new rules. As a response to these complexities, legal scholars discuss ‘constitutionalism (of international law),’ ‘global

[4] In order to gather information on the legal frameworks and practice, I have performed interviews with officials in these Member States. For valuable discussions, I would like to thank: Camilla Anderssson, Erika Sundén, Joakim Dahlberg, Lars Hildingsson, Martina Dufva, and Elisabeth André Turlind, and Göran af Ekenstam from SSM (Sweden); Elina Martikka and Arja Tanninen from STUK (Finland); Klaus Korhonen from the Foreign Ministry (Finland); Wolfgang Trautwein from Internationale Kernmaterialüberwachung, Bundesministerium für Wirtschaft und Energie (Germany); Arnold Rezniczek from Unternehmensberatung (Germany); and Saleta González-Escalada Mena from Ministry of Energy Tourism and Digital Agenda (Spain).

[5] For discussion, see the concluding section.

administrative law,' and 'fragmentation of international law.'[6] The multilevel governance approach can be seen as an 'umbrella term' that comprises these three responses. Therefore, they should not be seen as 'responses' in normative terms, but rather as 'categories' of multilevel governance as they emphasise different aspects and elements. The multilevel nuclear safeguards systems analysed (international, regional, and national) illustrate these categories.

Let us have a brief look at these responses. First, constitutionalism of international law often refers to the declining ability of States to govern democratic procedures and rights. It is about a realisation that decisions taken on the international level can lead to 'accountability deficits.' An important aspect is how to 'cure' such deficits by moving democratic structures to an international level.[7] International organisations, in particular the EU, is often studied from this perspective.

Second, global administrative law studies 'structures, procedures and normative standards for regulatory decision-making.'[8] Focus is on administrative functions of international and transnational regulatory regimes. It often involves questions on implementing mechanisms applicable to formal intergovernmental regulatory bodies, informal networks, and 'hybrid public-private transnational bodies.'

Third, fragmentation of international law refers to the increasing number (and variety) of international legal regimes. The concern is that many international legal orders overlap and that there is a potential or real conflict between them. This approach focuses on how to solve conflict between competing legal orders. It studies conflict rules (such a *lex specialis*) and explicit conflict clauses.

It should also be pointed out that within the field of multilevel governance studies, some scholars seek to theorize the role of national authorities (or, 'agencies') within the EU legal system. Egeberg and Trondal focus on the role of national authorities in applying EU legislation (thus, at the stage when EU legislation has already been implemented in national legislation by national legislators). They make a distinction between 'indirect', 'direct', 'networked' and 'compound governance'. Let us have a closer look at these forms.

'Indirect governance' is a form of governance where the Member States, that is, the national agencies together with their 'parent' ministries, are the main and dominant actors when implementing rules. They enjoy considerable room for discretion[9] and 'administrative sovereignty'.[10] The result is 'considerable variation across countries in terms of how EU policies are translated into national practices, thus undermining what one wanted to achieve through common legislation in the first place.' The Commission has a monitoring role.

'Direct governance' is a form of governance where implementation of EU legislation takes place independently of national governments. It is the Commission rather than

[6] See Ramses Wessel and Jan Wouters, 'The Phenomenon of Multilevel Regulation: Interactions between Global, EU and National Regulatory Spheres,' in Andreas Follesdal, Ramses A. Wessel, and Jan Wouters (eds.), *Multilevel Regulation and the EU: The Interplay between Global, European and National Normative Processes* (Boston: Martinus Nijhoff Publishers, 2008), p. 32.
[7] Along these lines, see e.g., Bardo Fassbender, *The United Nations Charter as the Constitution of the International Community* (Leiden: Martinus Nijhoff Publishers, 2009).
[8] Benedict Kingsbury, Nico Krisch and Richard B. Stewart, 'The Emergence of Global Administrative Law', IILJ Working Paper, Vol. 1 2004 (also published in *Law and Contemporary Problems* (2005) 3 and 4, pp. 15-62). According to this approach, the term 'global' is more accurate than 'international' in depicturing international law.
[9] Morten Egeberg and Jarle Trondal. 'National Agencies in the European Administrative Space: Government Driven, Commission Driven Or Networked?' (2009) 87 *Public Administration*, pp. 779-790.
[10] Simon Hix, *The Political System of the European Union* (Basingstoke: Palgrave Macmillan, 2005), p. 31.

the national government that is the dominant interlocutor. National agencies can be characterized as being double-hatted; one can argue that they are parts of both national administrations and of an EU administration.

'Networked' governance takes place horizontally, between agencies situated in different Member States that have 'similar objectives and that are facing analogous problems.'[11] Such agencies can form transnational networks involved in information exchange. This makes implementation more uniform among Member States. As Dehousse argues, the establishment of regulatory networks may improve information exchange and enable mutual learning processes by promoting 'horizontal cross-fertilization among national administrations.'[12] The 'downside' is that this uniformity may deviate from the original intensions of the political decision-making institutions and thereby challenge the authority of both national governments and EU institutions. As Slaughter explains, this is a matter of a complex web of governance.[13] The networks may either be initiated by the Commission or the Commission may link into already existing ones.[14]

Finally, the 'compound' form of governance combines the different modes outlined above (i.e., indirect, direct and networked modes of governance). There are several important interlocutors involved: the parent ministry, EU level bodies (such as the Commission), and horizontal transnational networks. Through an empirical analysis, Egeberg and Trondal find that this fourth kind of governance is the most common one.

This paper uses the insights from Egeberg and Trondal that there are several sources of power that influence and affect implementation of EU legislation. The thesis is that the combination of indirect, direct, and networked power varies between different Member States in the field of nuclear safeguards. The pattern (or combination) of different kinds of power depends on internal organization of the Member States, e.g., the administrative and constitutional structure.

3. The IAEA Safeguard System

With this brief overview of the multilevel governance approach now behind us, it is time to provide an overview over the rules at the different levels: the international level, the European level, and the national level. We will first turn to the international safeguard system, the IAEA safeguard system.

The most central instrument when it comes to nuclear non-proliferation is the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) from 1968.[15] The NPT makes a distinction between nuclear-weapon states (NWS) and non-nuclear weapon states (NNWS). A 'NWS' is defined as a state that has 'manufactured and exploded a nuclear weapon or other nuclear explosive device prior to January 1, 1967'.[16] Only five

[11] Giandomenico Majone, *Regulating Europe* (London: Routledge, 1996).
[12] Renaud Dehousse, 'Regulation by networks in the European Community: the role of European agencies' (1997) 4 *Journal of European Public Policy*, 246–261, p. 255
[13] Anne-Marie Slaughter, *A New World Order* (Princeton: Princeton University Press, 2004).
[14] Burkard Eberlein and Edgar Grande, 'Beyond delegation: transnational regulatory regimes and the EU regulatory state', (2005) 12 *Journal of European Public Policy*, pp. 101–2.
[15] 1968 Treaty on the Non-Proliferation of Nuclear Weapons, London, Moscow, and Washington, D.C., 1 July 1968, in force 5 March 1970, INFCIRC/140, 729 UNTS 161 / [1973] ATS 3 / 7 ILM 8809 (1968). The NPT has more than 190 signatories. Originally, the NPT had a limited duration of 25 years. In 1995, the Parties decided to extend the Treaty indefinitely. The NPT is reviewed at review conferences every five years, where the State Parties can express their understanding of the NPT provisions. For a more detailed overview and historical account, see e.g., Daniel H. Joyner, *Interpreting the Nuclear Non-proliferation Treaty* (Oxford: Oxford University Press, 2011); and Mohamed I. Shaker, *The Nuclear Non-Proliferation Treaty: Origin and Implementation 1959–1979* (Oceana: London, 1980).
[16] Article IX.3 of the NPT.

countries fit into this definition: the United States, Russia, China, the UK, and France.[17] All other countries are defined as 'NNWS', that is, states that have *not* exploded a nuclear device prior to this date.[18]

NNWS foreswear not to develop nuclear weapons and in exchange, they will have access to technology for civil nuclear energy. This is sometimes referred to as a 'bargain', which in the NPT is manifested in three 'pillars'. The first pillar is the 'non-proliferation' pillar, which prohibits the spread of nuclear weapons. While the NWS undertake 'not to transfer […] nuclear weapons or other nuclear explosive devices',[19] the NNWS undertake 'not to receive the transfer of nuclear weapons or nuclear explosive devices […], not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices'.[20] The second pillar concerns the peaceful use of nuclear energy. All Parties to the Treaty have an 'inalienable right' to develop research, production and use of nuclear energy for peaceful purposes.[21] The third pillar concerns 'disarmament'. The Treaty sets up an obligation for contracting parties to negotiate 'measures relating to cessation of the nuclear arms race'.[22]

The NPT also establishes a system of nuclear 'safeguards'.[23] Under this system, the IAEA is vested with the role to verify that nuclear material is not diverted to nuclear weapons. The IAEA uses different verification measures, including on-site inspections,[24] monitoring, and evaluation.

States are obliged to conclude so-called 'safeguards agreements' with the IAEA (Article III of the NPT).[25] The agreements are of three different types. The first type is the comprehensive safeguards agreements, which the IAEA concludes with the NNWS.[26] Under such agreements, the IAEA applies safeguards on all nuclear materials in a state.[27] The second type is the 'voluntary offer' agreements, which the IAEA concludes with the NWS. Such agreements exclude facilities with national security significance. Thus, they are of much more limited scope than the comprehensive agreements. The third type is the 'item specific' agreements, which the IAEA

[17] The US exploded a nuclear device in 1945, the Soviet Union in 1949, the UK in 1952, France in 1962, and China in 1964.
[18] Some countries are confirmed (or believed) to possess nuclear weapons: India, Pakistan, North Korea, and Israel. These countries are not NPT signatories. Even if they would accede to the NPT, they would not be classified as 'NWS' because they exploded a nuclear weapon only after 1967. North Korea acceded to the NPT in 1985, but announced its withdrawal in 2003.
[19] Article I of the NPT.
[20] Ibid., Article II.
[21] Ibid., Article IV.1.
[22] Ibid, Article VI. The scope of this obligation is disputed. While some claim that it imposes an obligation of disarmament, other argues that it simply obliges states to 'negotiate in good faith'. The International Court of Justice interpreted this as: 'an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control' (Advisory opinion on the Legality of the Threat or Use of Nuclear Weapons, 8th of July 1996).
[23] Article III of the NPT. The IAEA's Statute authorises the IAEA to 'establish and administer safeguards […] at the request of the parties to any bilateral or multilateral arrangement, or at the request of a State, to any of that State's activities in the field of atomic energy'. See Article III and XII of the Agency's Statute. The Statute was approved on 23 October 1956 by the Conference on the Statute of the International Atomic Energy Agency. It came into force on 29 July 1957.
[24] There are different types of inspections available to the IAEA according to INFCIRC/153 article 71-72, 73 and 48 respectively: 1) Ad hoc inspections, for locations without a Facility Attachment in force and routine inspections to the other declared nuclear facilities or locations with a Facility Attachment in force; 2) Design verification in order to verify the design information, for example construction, routine operations, and after maintenance procedures; and 3) special inspections, which may be carried out if the IAEA does not have the information necessary to fulfill its responsibilities.
[25] The IAEA has concluded safeguards agreements with more than 170 countries.
[26] Article III.1 of the NPT. The comprehensive safeguards agreements all follow the same structure, which is found in Document INFCIRC/153 (Corr.).
[27] Countries that only have small quantities of nuclear materials may conclude a 'Small Quantities Protocol' with the IAEA. The existence of such a protocol means that not all the procedures in the comprehensive safeguard agreement have to be applied.

concludes with states that are not parties to the NPT. Such agreements cover only specified nuclear material, facilities and equipment.

When concluding an agreement, the IAEA produces a document on subsidiary arrangements, which are designed for *each state* ('General Part'). [28] There are also facility attachments, which are specifically designed for *each facility* in the State. The subsidiary arrangements and the facility attachment specify how the IAEA is to fulfil its responsibilities. They contain technical and administrative procedures for how the safeguards agreement is to be applied.

Under this system of nuclear safeguards, the state provides the IAEA with 'declarations' of its nuclear material,[29] that is, reports in which the state specifies the quantity, the location, etc. The state also provides information of its nuclear facilities, such as different aspects of the design. The IAEA is to confirm by inspections that the declarations are correct, that is, that nuclear material is present and that information at the facility is consistent with the declarations. Thus, the system focuses on nuclear materials accountancy. In relation to later developments, this is sometimes referred to as 'classical safeguards'.

3.1 Strengthening Safeguards

The classical safeguards system briefly explained above turned out to have some serious shortcomings. The Gulf War in the 1990s exposed some shortcomings of the IAEA safeguards system. Despite the fact that Iraq had signed the NPT and concluded a comprehensive safeguards agreement with the IAEA, the country pursued a nuclear weapons programme by mainly the use of undeclared nuclear material at undeclared locations.

In order to strengthen the safeguard system, the IAEA designed a 'Model Additional Protocol' (1997),[30] which is an agreement that it negotiates with each State.[31] Additional Protocols gives the IAEA a broader mandate than the 'classical' system described above. Under the implementation of an Additional Protocol, the IAEA inspectors mandate was broader in order to verify the completeness and correctness of both the declared and the absence of undeclared nuclear activities. Moreover, States must provide a declaration with information that covers essentially all aspects of their nuclear fuel cycle (including uranium mines and sites with nuclear waste) and information about sites where nuclear material may be located, including other buildings on the site and support structures which contribute to the operation of the site. States are also required to provide information and give access to research activities. Further, states must grant the IAEA with a broader right of access ('complementary access').[32] This means that inspectors can visit sites on short notice, as short as two hours ('immediate access' and 'unannounced access'). They may also take environmental samples in order to detect undeclared nuclear activities.[33]

[28] On subsidiary arrangements, see article 39–40 in INFCIRC/153 (corrected).
[29] So-called nuclear accounting reports.
[30] The Model Protocol Additional to Agreement(s) between State(s) and the IAEA for the Application of Safeguards, IAEA, INFCIRC/540 (Corr.).
[31] As of 6 August 2014, there are 134 Additional Protocols in force between the IAEA and State Parties (including the Euratom). See the IAEA's website.
http://www.iaea.org/safeguards/documents/AP_status_list.pdf
[32] The Model Protocol Additional to Agreement(s) between State(s) and the IAEA for the Application of Safeguards, IAEA, INFCIRC/540, Articles 4-10.
[33] Under the Additional Protocol, the safeguards also apply to research and development activities, to specified manufacturing activities, and to exports and imports of non-nuclear material and equipment, specified in the Nuclear Suppliers Group Trigger List.

3.2 Integrated Safeguards

The next step in the evolution of international safeguards was the establishment in 2004 of the so-called concept (or 'system') of integrated safeguards. It is a way of making safeguards in 'safe' countries more efficient and less costly; it seeks to optimize resources for the IAEA and Member States.

The concept of integrated safeguards means that the IAEA combines the 'classical' safeguard system (that is, under comprehensive safeguards agreements) with additional safeguards measures – the systems are 'integrated.' The exact combination of the old and new system is decided by the IAEA for each state: the IAEA decides on an 'optimum combination' of measures.[34] This is sometimes referred to as the State level approach or the State level concept and it is defined as: 'the general notion of implementing safeguards in a manner that considers a State's nuclear and nuclear-related activities and capabilities as a whole, within the scope of the State's safeguards agreement.' Thus, safeguards are implemented at the level of the state.[35]

States desire integrated safeguards because they usually mean a reduction of safeguards devoted to declared materials, that is, for example, less frequent inspections. However, as a *quid pro quo*, integrated safeguards provide for unannounced and immediate access to the facilities or access at short notice.

Integrated safeguards only apply to States that have both a comprehensive safeguards agreement and an additional protocol in force. Moreover, they only apply to States for which the IAEA has drawn the conclusion that 'all nuclear material remained in peaceful activities' (a so-called broader conclusion). Furthermore, when deciding upon the exact combination of safeguard measures, the IAEA takes a range of 'state level factors' into account: all safeguards-relevant information in a state is analysed.[36] This may sometimes give rise to difficult delimitations. The challenge is how to differentiate between states without discrimination.[37] In the EU Member States, integrated safeguards have been gradually implemented.

4. The EU Level

We will now turn to the EU level. As a starting point, we should note that the Euratom can be seen as an organisational part of the EU, although in many respects, it can also be seen as a separate organisation.[38] For simplistic reasons, we shall here assume that the Euratom is an integrated part of the EU.

---

[34] On Integrated Safeguards, see e.g., Victor Bragin, John Carlson, and Russel Leslie, 'Integrated Safeguards: Status and Trends' (2001) *The Nonproliferation Review* 102–109.

[35] Laura Rockwood, 'The IAEA's State-Level Concept and the Law of Unintended Consequences', available at: https://www.armscontrol.org/act/2014_09/Features/The-IAEAs-State-Level-Concept-and-the-Law-of-Unintended-Consequences.

[36] Supplementary Document to the Report on The Conceptualization and Development of Safeguards Implementation at the State Level (GOV/2013/38), Report by the Director General, GOV/2014/41, 13 August 2014. The exhaustive six objective State-specific factors are:
(i) the type of safeguards agreement in force for the State and the nature of the safeguards conclusion drawn by the Agency;
(ii) the nuclear fuel cycle and related technical capabilities of the State;
(iii) the technical capabilities of the State or regional system of accounting for and control of nuclear material (SSAC/RSAC);
(iv) the ability of the Agency to implement certain safeguards measures in the State;
(v) the nature and scope of cooperation between the State and the Agency in the implementation of safeguards; and
(vi) the Agency's experience in implementing safeguards in the State.

[37] Some IAEA Member States have opposed the implementation of IAEA safeguards in the context of the state level concept. For a discussion, see Tom Coppen, 'Developing IAEA Safeguards: An Institutional Perspective on the State-level Concept', *Journal of Conflict and Security Law* (Summer 2015) 20 (2): 169-193.

[38] See Anna Södersten, *Euratom at the Crossroads*, 2018, Edward Elgar Publishing.

It is one of the tasks of the Euratom to 'make certain that nuclear materials are not diverted to purposes other than those for which they are intended' (Article 2.e Euratom). The Euratom sets up its own system of safeguards, very similar to the one under the IAEA. It predates the IAEA safeguards system, which was created a decade later by the adoption of the NPT.[39]

The Euratom safeguard system was created mainly to make it possible to import nuclear materials from the United States, the world's leading supplier of fissile material in the 1950s. The United States required that its exported materials would only be used for civil purposes and that the exports could be tracked. They therefore imposed unilateral inspection rights in their bilateral agreements.[40] A clause on unilateral inspection rights would equal an infringement of the Euratom's sovereignty. But with a safeguards system in place, such a clause could be avoided; the Euratom would have the direct responsibility.[41] In other words, the rationale of the Euratom safeguard system was economic. Undeniably, the Euratom safeguards system was also a way of preventing Germany from developing nuclear weapons; no country of the original six would be able to *covertly* develop nuclear weapons. Yet, the Treaty never included a prohibition of nuclear weapons, although it clearly had been discussed at the negotiations. In fact, the Treaty explicitly *exempts* from the safeguard system materials declared for military use.[42]

4.1 The Euratom Treaty Safeguards Provisions

The safeguards provisions are laid out in Title II, Chapter 7 Euratom. The Commission has two main tasks, which are laid out in Article 77. First, the Commission is to satisfy itself that nuclear materials are 'not diverted from their intended uses as declared by the users'.[43] Second, it must assure that 'any particular safeguarding obligations assumed by the Community under an agreement concluded with a third State or an international organisation are complied with'.[44] This reflects the very rationale behind the system: it guarantees its trading parties that the provisions are complied with.

---

[39] For an overview of the development of the Euratom Safeguards system, see Darryl A. Howlett, *Euratom and Nuclear Safeguards* (Macmillan: Basingstoke, 1990). See also Anja Lindroos, 'The Role of Euratom in the Non-Proliferation Regime' (1997) 8 *Finnish Year Book of International Law* 307; Stephen Gorove, 'First Multinational Atomic Inspection and Control System at Work: Euratom's Experience' (1965) 18 *Stanford Law Review* 160–86; and Bharat Patel and Peter Chare, 'Fifty Years of Safeguards under the Euratom Treaty – a Regulatory View' (2007) 36 *ESARDA Bulletin*.

[40] Except with Canada and the UK. Allan S. Nanes and Reuben Efron, 'The European Community and the United States: Evolving Relations' (1960) 22 *The Review of Politics* 179–80.

[41] For a critique, see John Krige, 'Euratom and the IAEA: the problem of self-inspection' (2015) 15 *Cold War History* 341–352.

[42] Article 84(3) reads: 'The safeguards may not extend to materials intended to meet defence requirements which are in the course of being specially processed for this purpose or which, after being so processed, are, in accordance with an operational plan, placed or stored in a military establishment'. In the Jason Case, the Court took this a step further when it decided that nuclear energy for military application falls outside the entire scope of the Treaty. Case C-61/03, *Commission v. United Kingdom* EU:C:2005:210. The AG argued that it was clear from Article 84(3) Euratom that not all defence-related materials are exempted from the safeguards, but only those that are 'in the course of being specially processed for [defence purposes] or which, after being so processed are, in accordance with an operational plan, placed or stored in a military establishment'. Opinion of AG Geelhoed, para 85. Following the Court's judgment, the specific exemption in Article 84(3) seems to have lost its significance.

[43] The Treaty here refers to 'ores, source materials and special fissile materials'. These materials are defined in Article 197 Euratom.

[44] According to Article 77.b Euratom, the Commission must also assure that the supply provisions (Title II, Chapter 6 on Supplies) are complied with. The Commission can use the means provided in the safeguards provisions to control that the Member States also comply with their obligations under the supply provisions. However, this reading seems to be contradicted by Article 84(2) Euratom which states that '[t]he scope of and procedure for the safeguards and the powers of the bodies responsible for their application shall be confined to the attainment of the objectives set out in this Chapter'. In any case, Article 77.b Euratom establishes a link between the supply provisions and the safeguards provisions. According to Grunwald, this means that the Commission has to exert control over the Supply Agency, and that the Agency has to be kept separated organisationally from the Commission. See Jürgen Grunwald, *Das Energierecht der*

Articles 78 to 85 then details how these two tasks shall be achieved. Nuclear operators (e.g., in the nuclear industry, research centres, or medical institutes) are required to give the Commission information on their facilities. They have to declare 'the basic technical characteristics' of their installations[45] and provide information on nuclear material in possession. They are required to keep and produce operating records in order to permit accounting for used or produced nuclear materials and for the transport of such materials.[46]

A central aspect of the safeguards system is the use of inspections. Article 81 provides that the Commission may send inspectors into the territories of Member States.[47] The inspectors' job is to verify that nuclear materials are not diverted from their intended use. They shall have access to 'all places and data and to all persons who […] deal with materials, equipment or installations'.[48] In case an inspection is opposed, the Commission can apply to the President of the Court of Justice of the European Union for an order to make the completion of the inspection compulsory. If there is a 'danger in delay', the Commission itself may issue a written order to proceed with the inspection.[49] In 2014, 161 inspectors were working for the Euratom and 1,234 inspections were carried out.[50] The responsibility for the safeguards is currently under Directorate Nuclear Safeguards in Luxembourg, which is a part of DG Energy.

In comparison to many other policy areas under the EU Treaties, the Euratom safeguards provisions are very detailed.[51] The Treaty founders intended them to be applied autonomously, with limited recourse to secondary legislation. In sensitive policy areas, this might be an advantage; once agreed upon, the Commission's action will not constantly be subject to political debate.

Perhaps this robustness is also the reason why the safeguards provisions are vested with a special simplified treaty revision procedure.[52] Article 85 applies 'where new circumstances so require', and it provides that 'the procedures for applying the safeguards laid down in this Chapter may […] be adapted'. This adds some flexibility to the otherwise rigid treaty provisions. As should be pointed out, this procedure has never been applied. But it is definitely more far-reaching than the simplified treaty revision procedures introduced by the Lisbon Treaty[53]; interestingly, it is the Community institutions themselves that may modify the Treaty. There is no need for

Europäischen Gemeinschaften: EGKS-EURATOM-EG: Grundlagen, Geschichte, geltende Regelungen (Berlin: De Gruyter Verlag, 2003), pp. 254–5.

[45] Article 78 Euratom.

[46] The Treaty here refers to ores, source materials and special fissile materials. Regarding the transport, the treaty merely refers to 'source materials and special fissile materials' (Articles 78–79 Euratom).

[47] It is the Commission that recruits the inspectors (Article 82 Euratom).

[48] It is interesting to compare the safeguards system with the competition rules under the TFEU. Under the competition rules, the Commission shall investigate cases of 'suspected infringement' (Article 105 TFEU). But under the Euratom safeguards, there is no such requirement – inspections may take place even if there is no suspected infringement. Thus, the Commission's investigatory power is stronger under the Euratom than under the competition rules. Another difference is the reach of the Commission's power. It controls the nuclear operators directly, including nuclear operators that are completely State-owned.

[49] This written order needs subsequent approval of the President of the Court. The Member States are not formally involved until the order or decision has been issued. The Member State authorities are then obliged to ensure that the inspectors have access to the places specified.

[50] Report on the Implementation of Euratom Safeguards in 2014, European Commission. This is the most recent publicly available report from the European Commission. The number of inspections is slowly decreasing. See ibid. Cf. Grunwald, who wrote in 2003 that roughly 200 inspectors and 2000 inspections were carried out each year. See Grunwald, *Das Energierecht der Europäischen Gemeinschaften*, p. 253.

[51] It should also be noted that some of the safeguards provisions are not applied, e.g., Article 80 Euratom, under which the Commission may require that 'excess special fissile materials recovered or obtained as by products and not actually being used or ready for use shall be deposited with the Agency or in other stores which are or can be supervised by the Commission'.

[52] Cf. the simplified procedure in Article 76 (Chapter 6 on Supplies) and Article 90 (Chapter 8 on Ownership).

[53] Article 48.6–48.7 TFEU. That simplified treaty revision procedure does not apply to the Euratom Treaty, because there is no reference in Article 106a Euratom to the provisions in the TFEU.

an intergovernmental conference, or for ratification by the Member States. The initiative may come from a Member State or from the Commission. The Council acts unanimously, on a proposal from the Commission and after consulting the European Parliament.

4.2 The Safeguards Regulation

The Euratom Treaty provides that 'the nature and the extent of the requirements' in Article 79(1) that operating records shall be kept and produced, shall be defined in a Regulation.[54] Already in 1959, the Euratom adopted two such Commission Regulations.[55] They were replaced in 1976, following the Euratom's safeguards agreement with the IAEA,[56] and again in 2005, in order to implement the Commission's reporting requirements under the IAEA Additional Protocol.[57]

The Regulation details the Euratom Treaty provisions that are outlined above.[58] It requires operators ('any person or undertaking..') to send in a range of different reports to the Commission, including a declaration with the 'basic technical characteristics' (Article 3.1). The Regulation also details what should be included in these reports. On the basis of the basic technical characteristics, the Commission shall adopt 'particular safeguard provisions' for each facility (Article 6).[59] Such a decision shall be taken in 'close consultation' with both the operator concerned and the Member State.

The Regulation also provides some links to the international (IAEA) system: Member States being a party to the Additional Protocol shall designate a 'site representative' for each site on its territory (Article 3.2). The site representative shall provide the European Commission with a declaration, which shall contain a general description of the site. The declaration shall fulfil the requirements of the Additional Protocol and the time limits set out therein.[60] The Regulation further provides that the operators shall maintain a system of accountancy and control for nuclear materials (Article 7), which shall include accounting and operating records. Such a system shall comply with the 'most recent international standards'.

As a Regulation, it is directly applicable in the Member States.[61] It is interesting to note that the Regulation is adopted by the Commission only (that is, not by the Council and

[54] Such a regulation shall be 'made by the Commission and approved by the Council'.
[55] Euratom Commission Regulation No 7 established the implementing procedures for the declarations required by Article 78 of the Treaty, OJ 1959 No. 15, 12 March 1959, p. 298; and Euratom Commission Regulation No 8 defining the nature and the extent of the requirements referred to in Article 79 of the Treaty, OJ 1959 No. 34, 29 May 1959, p. 651. English special edition: Series I Chapter 1959–1962 p. 27. See also Communication on the numbering of EAEC Regulations, OJ 1959 No. 34, 29 May 1959, p. 649.
[56] Commission Regulation (Euratom) No 3227/76 of 19 October 1976 concerning the application of the provisions on Euratom safeguards, OJ 1976 No. L363, 31 December 1976, p. 1; Commission Regulation (Euratom) No 2130/93 of 27 July 1993 amending Regulation (Euratom) No 3227/76 concerning the application of the provisions on Euratom safeguards OJ 1993 No. L191, 31 July 1993, p. 75; and Commission Regulation (Euratom) No 220/90 of 26 January 1990 amending Commission Regulation (Euratom) No 3227/76 of 19 October 1976 concerning the application of the provisions on Euratom safeguards, OJ 1990 No. L22, 27 January 1990, p. 56.
[57] Commission Regulation (Euratom) No 302/2005 of 8 February 2005 on the application of Euratom safeguards, OJ 2005 No. L54, 28 February 2005, p. 1.
[58] Chapter I sets out the scope and definitions. Chapter II provides rules on basic technical characteristics and particular safeguard provisions. It states that operators shall declare to the Commission the basic technical characteristics of the installation. Chapter III provides that operators shall maintain a system of accountancy and control for nuclear materials. Chapter IV sets up provisions on transfers between States. Chapter V – Specific provisions. Chapter VI Specific provisions applicable in the territories of the nuclear-weapon member states.
[59] Such provisions are drawn up by means of a Commission decision, which is addressed to the operator concerned (thus, this is a decision with individual scope).
[60] The Regulation clarifies that the role of the site representative is to collect information and to submit the general description, but that the responsibility for the correctness and completeness of the declarations remains with the operator.
[61] Article 288 TFEU.

the European Parliament) and on the basis of the Euratom Treaty directly. Perhaps as a result, there are no background documents publicly and easily available. Therefore, one can argue that the Regulation has been adopted with very little political input; it has been shielded from political discussions.

It should further be pointed out that the Regulation is addressed to the operators directly. It does not set up any obligations for Member States and it only provides for a very limited role for national authorities. Their role is simply to be informed and consulted with.

In addition to this Regulation, the Commission has also adopted recommendations and guidelines, which clarifies the application of the safeguards.[62] In practice, however, these recommendations seem to be very little applied, but after all, they are not legally binding.

4.3 Enforcement

There are two different ways to enforce the Euratom safeguards provisions: 1) by an infringement procedure that is directed to the Member State (Article 82 Euratom); and 2) by sanctions of the operators (Article 83 Euratom).

Let us start with the infringement procedure. As the Treaty points out, this is a special infringement procedure that derogates from the general procedures in Articles 258 and 259 Treaty on the Functioning of the European Union (TFEU). It works in the following way. The Commission may issue a 'Directive,' which includes a time limit, calling on the Member State to take all measures necessary to bring the infringement to an end.[63] If the Member State does not comply, the Commission or any Member State concerned may directly refer the matter to the Court. Unlike the general infringement procedure (under the TFEU), the Commission does not deliver a reasoned opinion and there is no opportunity for the State concerned to submit its observations. This specific procedure reflects the urgency by which the Treaty founders viewed an infringement in this area.

The Commission may also impose sanctions in the event of an infringement on the part of persons or undertakings. Unlike the infringement procedure which is directed to the Member States, the sanctions are imposed directly on the operators. These can take the form of (a) a warning; (b) the withdrawal of financial or technical assistance; (c) the placing of the undertaking under the administration of a person or board; or (d) the withdrawal of nuclear materials. The sanctions are in order of severity, with the

[62] Commission Recommendation 2009/120/Euratom of 11 February 2009 on the implementation of a nuclear material accountancy and control system by operators of nuclear installations, OJ 2009 No. L41, 12 February 2009, p. 17; and Commission Recommendation of 15 December 2005 on guidelines for the application of Regulation (Euratom) No 302/2005 on the application of Euratom safeguards, OJ 2006 No. L28, 1 February 2006, p. 1. The preamble clarifies that the guidelines should not create any legal rights or obligations but 'recommends' that the guidelines should be followed when applying the Regulation.

[63] This is not one of the legislative acts that are listed in Article 288 TFEU (A directive shall be binding, as to the result to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods). Rather, the kind of 'Directive' mentioned in Article 82 Euratom is a directive sui generis. In its form, however, it is closely related to a 'Decision' (as listed in Article 288 TFEU) with an individual (that is, Member State) addressee.

withdrawal of nuclear material as the most severe. Over the years, the Commission has issued some warnings.[64] Other types of sanctions are less common.[65]

The question of sanctions has been addressed in the Court of Justice of the European Union (CJEU).[66] The case concerned a German company, 'ANF-Lingen', which by mistake had exported nuclear materials from Germany to its parent company in the United States. The export had taken place without prior declaration to the Commission and without notification in ANF-Lingen's accounting and operating records. As soon as the incident was discovered, ANF-Lingen had notified the Commission and the Euratom Supply Agency. The Commission had then decided to impose a sanction. The company was to be placed under administration for a period of four months[67]; the second most severe sanction.

The ANF-Lingen brought an action to the CJEU for annulment of the Commission decision to impose the sanction.[68] The ANF-Lingen pleaded that it had not breached its obligation under the Euratom Treaty because the export was attributable to a mistake; this could not be classified as a serious breach of the obligations under Article 79 Euratom. It also argued that the nuclear material had at all times been under the authority of ANF-Lingen and its parent company in the United States. The Court rejected that plea. It held that the fact that the export in question took place inadvertently did not affect the finding that the Commission had not first been informed.[69]ANF-Lingen also pleaded that the sanction could not be imposed in respect of an infringement that had already ceased.[70] The Court rejected also this plea.

As Advocate General Jacobs pointed out,[71] the applicant had drawn an analogy with the breach of competition rules in the EEC Treaty and argued that the imposed sanction should be compared to 'penalty payments' because they were designed to put an end to a continuing breach rather than past infringement (cf. 'fines'). The Court did not explicitly discuss this analogy. It held that it was sufficient to observe that the Euratom Treaty does not distinguish between existing infringements and those that have ceased. The Court also pointed out that Article 83 Euratom ensures the effectiveness of the safeguards provisions.[72]

The ANF-Lingen had also pleaded that the Commission's decision was disproportionate and argued for a less severe sanction.[73] ANF-Lingen argued that the Commission had not been prevented from carrying out its supervisory task; ANF-Lingen had taken measures immediately following the discovery of the incident. The Court stated that 'any infringement of those rules by an undertaking constitutes a

[64] See, for example, the warning issued by the Commission addressed to BNG Sellafield Limited. In 2006, BNG Sellafield Limited brought an action to the Court to annul that decision. It submitted, *inter alia*, that the Commission lacked the competence to adopt the decision and the measures imposed. In 2009, the applicant informed the Court that it wished to discontinue proceedings. See Case T-121/06, *British Nuclear Group Sellafield* v. *Commission*, OJ 2006 No. L255, p. 5.
[65] The sanction 'withdrawal of financial or technical assistance' would only come into issue where an undertaking has received such assistance under either Article 6; 46.2.f; or Article 174.2 Euratom.
[66] Case C-308/90, *Advanced Nuclear Fuels* v. *Commission*, EU:C:1993:23 (hereinafter 'ANF Lingen').
[67] See Commission Decision 90/413 of 1 August 1990 relating to a procedure in application of Art. 83 of the Euratom Treaty (XVII – ANF Lingen), OJ 1990 No. L209, 8 August 1990, p. 27, which placed ANF Lingen, as regards part of its operation, under the control of a board of administrators for a period of four months; and Commission Decision 90/465 of 20 August 1990 relating to the appointment of a board responsible for implementing Commission Decision 90/412/Euratom, OJ 1990 No. L241, 4 September 1990, p. 14.
[68] Article 146 Euratom, repealed by the Lisbon Treaty. The Commission requested the Court pursuant Article 83(2) Euratom to order the immediate enforcement of Decisions 90/413 and 90/465. See Order of the Court of 7 December 1990, Case C-308/90, EU:C:1992:450.
[69] *ANF Lingen*, paras 12–18.
[70] Ibid., paras 19–22.
[71] Case C-308/90, *Advanced Nuclear Fuels* v. *Commission*, EU:C:1993:23, Opinion of AG Jacobs.
[72] *ANF Lingen*, para 21.
[73] Ibid., paras 23–30.

serious infringement'.[74] The Court pointed out that it is 'apparent from the approach adopted in certain national legal systems' that it is appropriate to impose the severest sanction available in cases where various infringements notionally overlap, as in this case. Moreover, the sanction enables measures to be imposed to ensure that future infringements are not committed. ANF-Lingen's cooperative attitude could not be invoked in order to challenge the need for a sanction.

This case illustrates that the Euratom safeguards provisions are very much 'alive' and that a breach of the provisions can have severe consequences for companies. In this context, it should be pointed out that it is the role of the Member States to ensure that the sanctions are enforced.[75] It should also be pointed out that the Commission may make recommendations to Member States concerning laws or regulations that are designed to ensure compliance with the obligations under the safeguards provisions.[76]

5. The Relationship between Euratom and IAEA

After having discussed the international IAEA rules and the regional EU/Euratom rules, it is now time to say a few words on the relationship between the Euratom and the IAEA.[77]

The Euratom is not a party to the NPT. However, the Euratom meets the NPT requirements by a safeguards agreement with the IAEA, concluded in 1973.[78] It is a *comprehensive* safeguards agreement, which, as previously explained, implies that all nuclear material and all nuclear activities are subject to IAEA safeguards. Further, the agreement is 'mixed' where the Member States are parties alongside the Euratom and the IAEA.[79]

Some countries had concluded safeguards agreements with the IAEA before they acceded to the EU. When these countries entered as EU Member States, the Euratom-IAEA agreement entered in their place (but the agreements are still valid and can be activated if the Euratom-IAEA agreement should cease to exist). The UK and France, which have nuclear weapons, are not parties to the agreement (recall that

[74] Ibid., para 26.
[75] Article 83 Euratom further states that a Commission decision, requiring the surrender of materials shall be enforceable and that the decisions 'may be enforced in the territories of Member States in accordance with Article 164 Euratom'. According to Article 83.2, appeals brought before the ECJ against a Commission decision which imposes any of the sanctions shall have suspensory effect.
[76] See Article 83.3 Euratom.
[77] Both organisations are permanent. The Euratom Treaty is adopted on an unlimited duration (Article 208 Euratom). The NPT, which originally was adopted for a period of 25 years, is since 1995 also of unlimited duration.
[78] Agreement Between the Kingdom of Belgium, the Kingdom of Denmark, the Federal Republic of Germany, Ireland, the Italian Republic, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the European Atomic Energy Community and the International Atomic Energy Agency in Implementation of Article III, (1) and (4) of the Treaty on the Non-Proliferation of Nuclear Weapons, 14 September 1973, INFCIRC/193. It is based on the INFCIRC/153 Model Agreement. See also Agreement between the Kingdom of Belgium, the Kingdom of Denmark, the Federal Republic of Germany, Ireland, the Italian Republic, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the European Atomic Energy Community and the International Atomic Energy Agency in implementation of Article III (1) and (4) of the Treaty on the non-proliferation of nuclear weapons (78/164/Euratom), OJ 1978 No. L51, 22 February 1978, p. 1. The NPT provides that its requirements can be met by states either individually or together with other states. Article III.4 of the NPT.
[79] In accordance with Article 102 Euratom, mixed agreements shall not enter into force until 'the Commission has been notified by all the Member States concerned that those agreements or contracts have become applicable in accordance with the provisions of their respective national laws'.

comprehensive safeguards agreements are only for NNWS). They have instead concluded separate agreements with the Euratom and the IAEA.[80]

How do the two systems interact? The Euratom safeguards system had been in force for more than 10 years before the NPT and the IAEA's safeguard system. Thus, the Euratom already had its own regional system, and the Euratom Member States wanted to keep it. The reason was that in the Euratom system, inspectors could serve in the state of their nationality. The European Commission assigns inspection staff to duties in their home countries. In the IAEA system, this is not possible. The Euratom-IAEA safeguards agreement was negotiated during the cold war and, at that time, the nationality of the inspectors was a sensitive issue. Some Member States were unwilling to accept IAEA inspections, in particular inspectors from the Soviet Union.[81] They preferred Euratom inspectors from their own countries.

Under the Euratom-IAEA agreement,[82] the Euratom inspectors and the IAEA inspectors work in tandem. The inspectors shall co-operate and they shall avoid 'unnecessary duplication' of safeguards activities.[83] For many years, the Euratom carried out inspections under the observation of IAEA inspectors ('observation regime') or jointly with them ('joint inspections'). It appeared that this approach resulted in duplication of efforts. In 1992, the Euratom and the IAEA therefore agreed on the so-called 'New Partnership Approach',[84] which aims at making the IAEA/Euratom safeguards system more efficient. Under this 'approach', the European Commission inspectors collect nuclear material accountancy information and then reports to the IAEA. The IAEA inspectors conduct verification jointly with Euratom at a certain number of Euratom inspections. For the IAEA, this system is a way of reducing costs and efforts. However, for the IAEA, it was important that the renewed relationship was not about delegation of tasks to the Euratom, but that it would be of 'an equal partnership'.[85] The IAEA would have access to all necessary information, which would enable it to draw independent conclusions. In this way, the IAEA could continue to meet its own safeguards objectives.

In 1998, the Commission concluded an Additional Protocol with the IAEA, which, as explained above, provides a wider range of verification tools than the 'basic' comprehensive safeguards agreements. All the Euratom Member States signed it in 1998, and it entered into force in 2004.[86]

[80] The UK concluded a safeguards agreement with the Euratom and the IAEA on 6 September 1976. The agreement entered into force on 14 August 1978 Vienna (IAEA INFCIRC/263). France, the Euratom and the IAEA concluded a safeguards agreement in July 1978. The agreement entered into force on 12 September 1981 (IAEA INFCIRC/290). France was then not yet a party of the NPT, but became as such only in 1992.
[81] See George Bunn, 'Nuclear Safeguards: How Far Can Inspectors Go?' (2007) 48 *IAEA Bulletin*, p. 50.
[82] Bunn explains: 'Most of Euratom's non-nuclear-weapon countries signed the NPT (without ratifying it) so they could participate with other NPT signatories in negotiations with the IAEA on NPT inspections standards. But they refused to ratify the NPT until they were able to negotiate both a satisfactory new IAEA safeguards system for the NPT, and an agreement with the IAEA on how Euratom and IAEA inspectors would cooperate at Euratom facilities. They then negotiated a separate deal with the IAEA on what IAEA inspectors would be permitted to do in Euratom countries. As a result, IAEA safeguards in Euratom countries were carried out largely through IAEA observation of Euratom inspections, or through operation of 'joint' inspections.' See ibid.
[83] See Article 1 of the Protocol, attached to Agreement 78/164/Euratom.
[84] For an analysis, see Sven Thorstensen and Kaluba Chitumbo, 'Safeguards in the European Union: The New Partnership Approach' (1995) 37 *IAEA Bulletin* 25–8.
[85] Ibid., 26.
[86] Additional Protocol 1999/188/Euratom, OJ No. L67, p. 1. See also Proposal for a Council Decision to approve the conclusion by the Commission of Additional Protocols, COM(1998) 314 final. The Euratom-IAEA Additional Protocol is also a mixed agreement.

In 2010, the IAEA and the Euratom agreed on the application of so-called 'integrated safeguards', also explained above.[87] The IAEA reduces its level of inspection efforts in countries with unquestioned nuclear non-proliferation credentials (broader conclusion),[88] such as the Euratom Member States. Some commentators argue that the Euratom should apply the same approach and that non-proliferation efforts are redundant within the Euratom.[89]

So, as explained, the European Commission collects information from the operators in the Member States and then submits the data to the IAEA. It should be pointed out that when it comes to the Additional Protocol, the Euratom Member States have different methods how to fulfil their obligations. There are eleven so-called side letter states, which have given the European Commission the responsibility to collect data on their behalf. The Commission then submits these data to the IAEA. The other Member States (e.g. Austria, Sweden and Finland) report some of this data to the IAEA directly. These states retain the responsibility for the accuracy of data provided. The nuclear weapon states (the UK and France) also send this information directly to the IAEA.

What are the differences between the IAEA and the Euratom? The main difference seems to be the focus. While the IAEA focuses on States, the Euratom system focuses on undertakings ('operators'). As explained, under the Euratom system, the operators may be punished for infringements with sanctions. The Member States' roles are to ensure that sanctions are enforced and that infringements are remedied. The IAEA has no such tools, but rely on traditional intergovernmental compliance mechanisms. If the IAEA finds that a state has breached its obligations under the safeguards system, the UN Security Council can adopt sanctions by a resolution under Article 41 of the UN Charter's Chapter VII.[90]

Another difference is the scope. The Euratom system is wider in scope than the IAEA system. Unlike the NPT, the Euratom Treaty does not differentiate between nuclear weapon states and non-nuclear weapon states. Consequently, the Commission has inspection rights in all the Member States, not only in the non-nuclear weapon states. The Euratom applies safeguards to all civil nuclear material in all Member States. This means that the Commission submits reports to the IAEA for all civilian nuclear materials in designated nuclear facilities in France, and, until Brexit, in the UK. In fact, a substantial part of the Euratom budget for safeguards goes to inspecting the reprocessing plants at Cap le Hague in France and at Sellafield in the UK. One might ask why it is desirable at all to inspect a nuclear weapon state? The answer is that it makes the system credible; it allows the Euratom to guarantee its trading partners that the conditions on the use of materials are complied with (Article 77.b Euratom).[91] This was, for example, an important issue when the agreement between the United States and Euratom was renewed in 1996.[92]

The possibility of withdrawal is another difference between the two systems. Prior the Lisbon Treaty, the possibility of withdrawal from the Euratom was unclear. There was

[87] See the Press Release Agreement reached on Integrated Safeguards in the European Union, IP/10/11, Brussels, 11 January 2010.
[88] See section 3.4, above.
[89] European Parliament Working Paper, 'The European Parliament and the Euratom Treaty: Past, Present, and Future', Energy and Research Series, ENER 114 EN.
[90] In 2006, the UN Security Council adopted Resolution 1696 through which it imposed sanctions on Iran. There are also unilateral sanctions taken against Iran, for example by the US and also by the EU.
[91] See H.W. Schleicher, 'Nuclear Safeguards in the European Community: A Regional Approach' (1980) 22 *IAEA Bulletin*.
[92] See Hearing Before the Committee on Governmental Affairs, United States Senate, One Hundred Fourth Congress, Second Session, February 28, 1996.

no exit clause.[93] Since the Lisbon Treaty, this is now possible; the withdrawal clause in Article 50 TEU also applies to the Euratom.[94] The withdrawing state does not have to give a particular reason in order to trigger Article 50 TEU and no particular circumstances have to apply. In comparison, the IAEA system seems stricter in this regard. Article X of the NPT sets up a right to withdrawal from the Treaty. It applies in the case of 'extraordinary events' related to the subject matter of the Treaty that have jeopardised the supreme interests of the country. However, as Lindroos explains, the 'high level of universality of the principles of non-proliferation place strong pressure on every state to respect the Treaty.'[95] In other words, it might be theoretically or legally easier to withdraw from the NPT than from the Euratom, but practically, it is almost 'inconceivable.' North Korea is the only state that has withdrawn from the NPT.[96]

Does the Euratom safeguard system offer any added value? It does not seem necessary with double verification measures – on the international level and the regional level – in a geographical area where the actual nuclear proliferation risk is minimal.[97] Some commentators argue that a regional safeguards system may foster political stability between the Member States[98] as the region as a whole develops a generally peaceful attitude. Moreover, today, the main function of the Euratom Treaty seems to be to fulfil international obligations under the NPT and obligations linked to the trade agreements. Therefore, the relationship between the two organisations can today be characterised as hierarchical with the IAEA at the apex. If the initial years were characterised as a power struggle between the IAEA and the Euratom,[99] the IAEA has won the battle.

6. National Approaches

The previous sections have discussed the IAEA system and the Euratom system and how they relate. It is now time to discuss nuclear safeguards at the national level, which, as explained, is the main focus for the study. As a starting point, we can note that the different levels of rules (the IAEA system and the Euratom system) have different requirements when it comes to the existence of a national (state) system.

The IAEA safeguards agreements require states to establish and maintain a State system of accounting for and control of nuclear material. The basic elements of such a state system are the following: 1) a set of regulations (including a sanctioning regime,

[93] On the EU withdrawal clause, see Allan F. Tatham, ''Don't Mention Divorce at the Wedding, Darling!': EU Accession and Withdrawal after Lisbon' in Andrea Biondi and Piet Eeckhout Stefanie Ripley (eds.), *EU Law After Lisbon* (Oxford: Oxford University Press, 2012), pp. 128–54. See also, Jochen Herbst, 'Observation on the Right to Withdraw from the European Union: Who are the 'Masters of the Treaties'?' (2005) 6 *German Law Journal* 1755–60; Adam Łazowski, 'Withdrawal from the European Union and Alternatives to Membership' (2012) 37 *European Law Review* 523–40; and J.H.H. Weiler, 'Alternatives to Withdrawal from an International Organization: The Case of the European Economic Community' (1985) 20 *Israel Law Review* 282–298.

[94] The Euratom and the EC (EEC) have always shared the same institutions, but the Communities had separate sets of institutional provisions. The Lisbon Treaty repealed the Euratom's institutional provisions and replaced them with a reference (Article 106a Euratom) to the provisions in the EU Treaties (TEU and TFEU). Thus, the institutional provisions in the EU Treaties now apply to the Euratom Treaty. One of the provisions is Article 50 TEU, which concerns withdrawal.

[95] Anja Lindroos, 'The Role of Euratom in the Non-Proliferation Regime' (1997) 8 *Finnish Year Book of International Law* 307, at 333.

[96] According to Article X, a State Party that wishes to withdraw shall give notice 'to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.'

[97] Ibid., at 334.

[98] See Schleicher, 'Nuclear Safeguards in the European Community', 50. See Grègoire Mallard, 'Can the Euratom Treaty Inspire the Middle East? The Political Promises of Regional Nuclear Communities' (2008) 15 *Nonproliferation Review*. Mallard discusses the possibility of using the Euratom Treaty, in particular the safeguards provisions, as a model for the Middle East. Of course, there is always the question of whether a regional system can be trusted, i.e., if the control really works. But the Euratom would lose its credibility if it were to defend industrial or national interests; it could be perceived as an opponent to the IAEA.

[99] Anja Lindroos, at 334.

conditions for licenses, classification and registration of nuclear material, and requirements for material accountancy); 2) an implementing body; and 3) a compliance body to ensure compliance with the regulations (mostly a governmental organisation). Such a state system may consist of several entities and it may consist in regional entities or a combination thereof. As a signatory of the safeguards agreement, the state is however always the entity responsible to the IAEA.

The Euratom Treaty does not require the existence of a state system, although it mentions 'authorities of the Member State' (Article 79 Euratom). The Treaty does not specify how these authorities should look like or what tasks they should have. As this study shows, some Member State have a *specific* national authority for nuclear safeguards, that is, an authority equipped with the task to perform inspections of nuclear facilities. When referring to the existence of a 'national authority' in this study, we mean such a specific authority. In some Member States, however, such a national authority does not exist. Instead, it is the Euratom that serves as the implementing and compliance body. In addition, a part of the government, a ministry, is vested with some overarching responsibility in the field.

One important question is if the Euratom Treaty allows for the existence of a national authority, that is, a specific one that performs inspections. The answer to this question depends on the nature of treaty competence. Let us examine this a bit more in detail.

The Union's powers are generally shared with the Member States, and only exceptionally, the powers are exclusive by nature. Exclusive competence means that the EU alone is able to legislate and adopt binding acts (Article 3 TFEU). The EU Member States are allowed to legislate only if empowered by the EU. How do we know if a treaty competence is shared or exclusive? If nuclear safeguards would have been a policy area under the TFEU, we could just have examined the 'competence catalogue' in Article 3 to 6 TFEU. The catalogue, which was introduced by the Lisbon Treaty, is meant to clarify the relationship between the EU and the Member States. It lists policy areas with shared respectively exclusive competence.[100] But the competence catalogue does not apply to the Euratom, so it cannot give us guidance.[101]

Yet, the issue of competence does not seem to be of great importance here anyway, because, as Konstadinides points out, the meaning of exclusive competence seems almost illusionary: 'an exclusive competence does not necessarily entail the seizure of national regulatory activity.'[102] To illustrate this point, compare with the field of competition law. It is listed in Article 3.1.b TFEU as an exclusive competence to the

[100] Prior Lisbon, it seemed that only very few areas belonged to the exclusive category (common commercial policy and common fisheries policy). The Lisbon Treaty extended the list and made it explicit in treaty text: Customs union; the establishing of competition rules necessary for the functioning of the internal market; monetary policy for euro area countries; conservation of marine biological resources under the common fisheries policy; common commercial policy; and conclusion of international agreements under certain conditions. 'Energy policy' (Article 194 TFEU) is enlisted as an area of shared competence (Article 4 TFEU).

[101] Article 106a Euratom, which lists treaty articles in the TEU and TFEU that apply to the Euratom, does not refer to the competence catalogue.

[102] See Theodore Konstadinides, *Division of Power in European Union Law: The Delimitation of Internal Competence between the EU and the Member States* (Alphen aan den Rijn: Kluwer Law International, 2009), p. 160. It should perhaps also be pointed out that the issue of competence is closely linked to the choice of instrument. Thus, whenever a regulation is used, Member States are in principle prohibited from acting themselves unless they have to amend national legislation which may contradict EU legislation. In contrast, where directives are used, national legislators are obliged to adopt national legislation, unless the national legislation is already in line with the EU legislation in issue. In our case, the instrument in question is a regulation, which details the Euratom Treaty provisions. Consequently, there seems to be little or no room for Member State action.

EU.[103] According to the definition of exclusive competence (in Article 3 TFEU), the Member States are not empowered to act, only the EU. Yet, most Member States have national competition authorities and there is also national legislation in place. As Monti explains, despite the fact that competition law is listed among the EU's exclusive competences, the nature of the competence is still unclear.[104]
So, perhaps the question on the nature of competence in the field of nuclear safeguards is equally unclear and irrelevant.

Thus, even if the safeguards provisions would be a matter of exclusive competence, this does not seem to prevent the Member States from having their own national authority and their own legislation in the field. What is clear is that the Euratom Treaty does at least not *prohibit* national authorities. In fact, if we examine the Euratom Safeguards Regulation, the existence of a national authority seems rather to be expected (although national authorities have a very limited formal role under the Regulation). Hence, the Member States can choose whether to keep a national authority in the field of nuclear safeguards after EU accession.

The subsequent sections will discuss the following questions: What role do the national authorities take in different Member States? Why have some Member States chosen to keep their national authority? What are the implications and what are the reasons for not having one? How do such Member States take care of their international obligations?

6.1 Sweden

Sweden is one of the Member States that has kept its national authority for nuclear safeguards after EU/Euratom accession: the Swedish Radiation Safety Authority (SSM) (which, of course, also has other functions within the field of nuclear energy besides nuclear safeguards).

The SSM is a governmental authority that is subordinated the Ministry of Environment and Energy. The Ministry of Foreign Affairs is also involved in this field.[105] It should be noted that in Sweden, governmental authorities take a very strong and independent role vis-à-vis governmental Ministries; according to the Swedish Constitution, Ministries are prohibited from instructing authorities how to decide in individual cases.[106] When it comes to the SSM, the Ministry seems to give considerable room to the authority to form its own policy.

The SSM has a 'general' responsibility to ensure that nuclear material and equipment is not used for production of nuclear weapons.[107] It 'exercises supervision to ensure that Swedish nuclear material and Swedish nuclear equipment are used in the manner they have been declared in accordance with Sweden's international commitments.' How does the 'general' responsibility resonate with the Euratom Regulation, which gives so little room to the Member States? In other words, how can it be explained that a national authority has such a general (and wide) responsibility whereas the EU/Euratom level

[103] For a discussion on the meaning of exclusive competence in the field of competition law, see Giorgio Monti, Legislative and Executive Competences in Competition Law, Loïc Azoulai (eds.), *The Question of Competence in the European Union* (Oxford: Oxford University Press, 2014).
[104] Ibid.
[105] In Sweden, there are two sets of rules on nuclear safeguards: The Act on Nuclear Activities and the Ordinance with instructions for the Swedish Radiation Safety Authority (Lagen (1984:3) om kärnteknisk verksamhet and Förordning (2008:452) med instruktion för Strålsäkerhetsmyndigheten). Unofficial English translations are available at: http://www.stralsakerhetsmyndigheten.se/In-English/Enactments/Acts-and-ordinances/
[106] RF 11:7.
[107] See Paragraph 8 of Förordning (2008:452) med instruktion för Strålsäkerhetsmyndigheten.

rather require the *operators* and not the Member State to take the main responsibility? Recall that the Euratom Regulation is directed to the operators and not the Member States themselves. As explained, under the Euratom Treaty, the operators are required to send reports to the European Commission on the 'basic technical characteristics of the installations' (as well as a range of other reports under the Regulation). When it comes to these reports, the national authority shall according to Article 79 Euratom be copied into the correspondence. In other words, the EU level requires that the Member States are closely involved, although it does not require the existence of a specific legally independent national authority.

Under Swedish legislation, operators shall provide the authority with information and give access to sites and facilities.[108] The SSM does not carry out inspections, similar to the ones carried out by the IAEA and Euratom. Instead, the SSM accompanies the IAEA inspectors and the Euratom inspectors on their inspection. The SSM can then use the information obtained from these bodies in their own inspections, which are less frequent but more directed towards auditing the safeguard system at the nuclear facilities.

When it comes to the IAEA inspections, the SSM must be present according to Swedish rules.[109] For the Euratom inspections, there is no such legal requirement. The authority's presence is instead decided on a case-by-case basis. This difference between the treatment of IAEA inspections and Euratom inspections can be explained by the fact that the IAEA inspections are seen as 'foreign', whereas the Euratom inspections are a 'part' of the national state system. The role of the authority can therefore also be said to be about protecting national interests; foreign inspectors (that is, IAEA inspectors) cannot be given unlimited access to national vital functions without some supervision. In addition, as it is the State that is responsible for fulfilling the obligations of the NPT, the presence of the national authority during IAEA inspections will permit direct information on the IAEA findings. When it comes to the Euratom/EU level, however, it is clear that the Euratom system consider itself to be hierarchically superior the national system: the Euratom Treaty allows the Member States to be present at inspections, under the condition that the Euratom inspectors 'shall not thereby be delayed or otherwise impeded in their performance of their duties.'[110] In other words, it is the Euratom that sets up the conditions.

For many years, the IAEA system and the national system of safeguards applied in Sweden in parallel. When Sweden was about to accede to the EU in 1995, Sweden claimed its national responsibility in the field of nuclear safeguards.[111] A joint declaration was attached to the EU accession treaty, which states that the fulfilment of the NPT obligations remains a national responsibility.[112] Sweden also affirmed that it

[108] Paragraph 17 of Lagen (1984:3) om kärnteknisk verksamhet.
[109] According to Paragraph 7 of Förordning (2005:278) om inspektioner enligt internationella avtal om förhindrande av spridning av kärnvapen, the authority *shall* be present at inspections under the Additional Protocol. When it comes to certain inspections of routine character, the SSM may abstain from attending the inspection. According to a Governmental Decision, the requirement to attend at inspections is also extended to inspections under INFCIRC/193, that is, inspections that do not fall under the Additional Protocol (Regeringsbeslut 28, M2009/147/Mk). According to Swedish legislation, the Swedish government shall designate an authority which shall attend the inspections if needed. See paragraph 2 of Lag (2000:140) om inspektioner enligt internationella avtal om förhindrande av spridning av kärnvapen, Svensk författningssamling 2000:140.
[110] Article 81(2) Euratom.
[111] Proposition 1994/95:118, s 22–23.
[112] Joint Declaration D.25 reads: The Contracting Parties underline the importance of non-proliferation of weapons of mass destruction and their continued support for the Treaty on Non-Proliferation of Nuclear Weapons (NPT); They confirm that the fulfilment of the obligations under the NPT remains a national responsibility, without prejudice to the responsibilities of the IAEA and those of the European Atomic Energy Community related to the implementation of Article III (1) and (4) of the NPT; They recall that they are committed to implement the provisions set out within the Nuclear Suppliers' Group guidelines and to ensure as a condition of supply that full-scope IAEA safeguards are implemented in those non-nuclear

will cooperate closely with the IAEA.[113] In line with this declaration, Sweden chose to keep its national authority.

What are the reasons for keeping the Swedish authority after EU/Euratom accession? It was seen as too sensitive an issue to get rid of national safeguards and it had to be made sure that the international obligations would be fulfilled. What would happen if the Euratom would not do its job when it comes to inspections and control? There was also the uncertainty when it comes to responsibility, who would have the responsibility in case something would go wrong, that is, if nuclear material would be missing – the EU/Euratom or the Member State?

Important in this context was also the so called Transnuklear scandal, where a German company, Transnuklear and its parent company, Nukem, were prosecuted for having organized and covered up a bribery ring. There were some concerns of Swedish involvement, but this eventually proved wrong. However, this episode emphasised the importance to keep some national control.[114]

The choice to keep the national authority should possibly also be seen in light of the Swedish nuclear weapons programme, which was developed in the 1950s and 1960s. The programme was a means to secure Sweden's position as a neutral state.[115] Nuclear weapons were to play a defensive role, particularly against threats and attacks by the Soviet Union. However, the plans on developing nuclear weapons were abandoned when Sweden acceded to the NPT in 1968. But this historical episode might have had an impact on the choice to keep a national system for control.

Another reason to keep the national authority was linked to the issue of self-reliance in energy production. If a state is to rely on nuclear energy, it must make sure that it can live up to international obligations on safeguards. It has to have a structure in place and domestic know-how. By keeping a national system active, the state will have competence and know-how when technical implementation issues are under discussions. Further, this competence also enables an active contribution to the development of the IAEA safeguards system. At the time of EU accession, Sweden was unwilling to completely surrender these aspects of sovereignty to the EU; relying on a supranational entity was unthinkable. One should also not forget that there was quite a wide-spread scepticism towards the EU at the time of accession. Further, as Ane Håkansson and Thomas Jonter point out, a national authority could also have been seen as legitimizing the production of nuclear energy to the public.[116]

As yet another explanation, the concept of 'institutional stickiness' should be mentioned. This concept comes from historical institutionalism, a theory in political

---

weapon states to which exports are made of nuclear material and equipment especially designed or prepared for the processing, use or production of nuclear material; Without prejudice to its obligations pursuant to the Euratom Treaty, the Kingdom of Sweden affirms that in meeting its NPT obligations it will cooperate closely with the IAEA as an IAEA Member State as well as within the framework of INFCIRC/193.

[113] The Declaration clarifies that the national responsibility is 'without prejudice' to the responsibilities of the IAEA and those of the Euratom. This cooperation is also stated to be 'without prejudice to its obligations to the Euratom Treaty'. In other words, the Declaration is not very far-reaching in claiming national responsibility; it cannot be regarded as constituting an exception from the Euratom Treaty provisions. We should also add here that the legal value of declarations is in any case limited. Declarations do not have the value of treaty text or protocols; they are merely political instruments. In other words, such a declaration is not to be confused with the Protocols that are attached to the EU Treaties that grant exceptions to certain Member States from certain policy areas.

[114] For a detailed review of this episode, see Hancher, L. '1992 and Accountability Gaps: the Transnuklear Scandal: A Case Study in European Regulation' (1990) 53 *The Modern Law Review*, 669–684.

[115] For an overview of the neutrality policy, see Per Cramér, *Neutralitetspolitik och europeisk integration* (Stockholm: Norstedts juridik, 1998).

[116] See Ane Håkansson and Thomas Jonter, 'An Introduction to Nuclear Non-Proliferation and Safeguards,' SKI Report 2007:44, p. 64.

science. According to this school of thought, institutions can become 'locked-in' as a result of indigenous agents.[117] In other words, it is not easy to dissolve institutions if there are *agents within them* who want to keep them. At a later time, this can also be explained by 'path dependency.'[118] So, in line with this reasoning, there is a possibility that there was a strong opposition within the SSM at the time of EU/Euratom accession against handing over the responsibility to the Euratom. So, this could explain why Sweden chose to keep its authority.

Finally, something should be mentioned about the response from the EU/Euratom regarding the choice to preserve the national authority. The Euratom was initially skeptical about the decision to keep the national authority. Safeguards was after all a responsibility of the Euratom under the Treaty. This responsibility was further underlined by the fact that the original Member States did not have a such an authority. According to officials at the SSM, the relationship between the national authorities and the Euratom has evolved over the years, and the initial skepticism has turned into a good and stable relationship.

6.2 Finland

Just like Sweden, Finland[119] chose to keep its national authority for nuclear safeguards after EU accession.[120] Finland, which entered the EU/Euratom at the same time as Sweden, attached a declaration with the same wording as the one that Sweden attached to the accession treaty. In their respective declaration, Sweden and Finland state that the obligations under the NPT remains a national responsibility.[121] Thus, the preservation of the national authority is firmly grounded in declarations attached to the EU's (Euratom's) primary law.

Finland's national authority for nuclear safeguards is named The Radiation and Nuclear Safety Authority (STUK).[122] It is subordinated the Ministry of Economic Affairs and Employment (previously, the Ministry of Trade and Industry).[123] Just like in Sweden, the Finnish national authorities are independent from governmental influence.[124] This means that although the STUK is subordinated the ministry, it takes independent decisions in individual cases; the ministry is prohibited to give directions in individual cases.

---

[117] See, for example, Sven Steinmo, 'Historical Institutionalism,' in Donatella Della Porta, *Approaches and Methodologies in the Social Sciences: A Pluralist Perspective* (Leiden: Cambridge University Press, 2008); and Peter A. Hall and Rosemary C. R. Taylor, 'Political Science and the Three New Institutionalisms,' MPIFG Discussion Paper 96/6, http://edoc.vifapol.de/opus/volltexte/2011/2782/pdf/dp96_6.pdf.

[118] Paul Pierson, 'Increasing Returns, Path Dependence, and the Study of Politics' (2000) 94 *The American Political Science Review*, 251–267.

[119] Finland has currently four nuclear power reactors and one nuclear power reactor under construction. A governmental decision has been taken on additional two new reactors. Finland ratified the NPT in 1969 and concluded a Safeguards Agreement with the IAEA in 1971 (into force in 1972, the first safeguards agreement in the world). When Finland joined the EU in 1995, a trilateral agreement between Finland, EC and the IAEA came into force. In the year of 2000, Finland ratified the Additional Protocol, which came into force in 2004, at the same time in all EU states.

[120] Tuomas Ojanen, 'Constitutional Amendment in Finland' in Xenophōn I. Kontiadēs (eds.), *Engineering Constitutional Change: A Comparative Perspective on Europe, Canada and the USA* (New York: Routledge, 2013); and Olli Okko (ed), *Implementing nuclear non-proliferation in Finland Regulatory control, international cooperation and the Comprehensive*, Nuclear-Test-Ban Treaty, Annual report 2014, STUK-B 186.

[121] 24. Joint Declaration on the Non-Proliferation Treaty.

[122] It is the STUK that is the designated site representative under Regulation No 302/2005. Section 118, subsection 2 of the Nuclear Energy Decree.

[123] Finnish legislation states that the ministry is the competent national authority referred to in the Euratom Treaty. Section 54 of the Nuclear Energy Act.

[124] For historical reasons, Finland and Sweden share the same constitutional and administrative roots. Consequently, the Finnish system of national authorities is very similar to the Swedish one. See e.g., Marku Suksi in the chapter on Finland in Dawn Oliver and Carlo Fusaro (eds.), *How Constitutions Change: A Comparative Study* (Oxford: Hart publishing, 2011); and Jaakko Husa, *The Constitution of Finland: A Contextual Analysis* (Oxford: Hart publishing, 2011).

The STUK is responsible 'for the necessary control of the use of nuclear energy to prevent proliferation of nuclear weapons.'[125] It has two specific tasks.[126] The first is to maintain a national system of accounting of nuclear materials. Thus, the STUK performs its own on-site inspections similar to the ones that are performed by the Euratom and the IAEA; it inspects the operators' accountancy, facilities, and transport arrangements. In other words, the STUK has a structure and capability to perform a domestic control that is independent of the international control.

The second task of the STUK is to be the responsible body for Finland's international (IAEA and Euratom) obligations. When it comes to the international inspections, the Finnish Nuclear Energy Act states that STUK has to be present at the IAEA and Euratom inspections in Finland.[127] This can be compared to the case of Sweden, where there is only a legal requirement that national inspectors are present at the IAEA inspections. Thus, taken together, the STUK takes on a very strong role.

How can this strong role be explained? The explanation can possibly be found in Finland's geopolitical situation, that is, its proximity to Russia. For Finland, it is important to be independent when it comes to energy supply. In light of its geopolitical situation, it would, for example, not be desirable to be dependent on gas. Thus, for Finland, nuclear energy is very much a security of supply issue. This requires an independent national system, including a national authority. Perhaps consequently, the Finnish attitude towards nuclear energy is different from the Swedish one; in Finland, there is no strong public opposition to nuclear energy.[128] Yet, in this context, it should be pointed out that it is the Rosatom, the Russian state-owned nuclear company, that is building and financing a new Finnish nuclear plant (Hanhikivi 1 reactor).[129] Thus, the situation is perhaps more nuanced than one initially might think.

Of course, the reasons to keep the national authority discussed above in the case of Sweden should also apply to Finland. Thus, for example, 'institutional stickiness' may be one of the reasons why Finland has chosen to keep its national authority. We can assume this because Sweden and Finland show many similarities, including constitutional and administrative similarities.

---

[125] Sections 55 of the Nuclear Energy Act (990/1987). See also section 1 on the overall purpose of the Act.

[126] Section 118 of the Nuclear Energy Decree (161/1988): 'STUK maintains a control system of nuclear materials with the purpose of carrying out the safeguards control of the use of nuclear energy that is necessary for the non-proliferation of nuclear weapons as well as the safeguards control that is related to the international agreements on nuclear energy in which Finland is a signatory... When maintaining the safeguards system mentioned above, STUK shall take into consideration the obligations of the Commission Regulation (Euratom) No. 302/2005 concerning the application of the provisions on Euratom safeguards.'

[127] The STUK is responsible for the declarations made by the operators to the European Commission. It verifies and assesses the completeness and correctness of the declarations. The STUK collects, inspects and reviews the relevant information and it then submits the declarations to the Commission and the IAEA. The STUK approves the IAEA and Euratom inspectors to Finland (Section 118a of the Nuclear Energy Decree). The operators are also closely involved in this process; they are given the possibility to comment on new inspector requests. In rare cases, where STUK cannot approve an inspector, it forwards the decision to the Ministry of Employment and the Economy. Perhaps as is often the case when an international actor such as the European Commission is invited into the scene of a Member State, in the initial years, there were some 'suspicion' from authority's side. However, over the years, the relationship between the authority and the Commission has improved significantly and is now a good one. The Finnish authority sees the European Commission as an important and equal partner when it comes to information exchange, best practice, etc (and not only on a technical and regulatory level).

[128] In Finland, there is a positive attitude towards nuclear energy which has in fact increased quite significantly over the years. Jorge Morales Pedraza, *Electrical Energy Generation in Europe: The Current Situation and Perspectives in the Use of Renewable Energy, Sources and Nuclear Power for Regional Electricity Generation* (Cham: Springer, 2015), p. 454.

[129] For details, see Fennovoima's website https://www.fennovoima.fi/en/hanhikivi-1/about-the-project and Rosatom's website: https://www.rosatom.ru/en/investors/projects/ (both accessed December 29, 2018). For discussion, see e.g., Pami Aalto, Heino Nyyssönen, Matti Kojo and Pallavi Pal, 'Russian nuclear energy diplomacy in Finland and Hungary' (2017) 58 *Eurasian Geography and Economics*, 386-417.

6.3 Germany

Germany does not have national authority for nuclear safeguards. In fact, it never had one. The absence of a national authority has an historical explanation: As mentioned, the Euratom system existed before the IAEA system and in the Euratom's early years, there was no international (IAEA) requirement to establish a national authority. From start, it was the Euratom that was to take care of verification. Consequently, there is no national accountancy system of nuclear materials and no national inspections take place; Germany is one of the EU's founding Member States,[130] and as such, Germany relies completely on the Euratom.

Thus, in Germany, only a two-level system can be said to apply: the international level and the EU level. However, it should be pointed out that Germany is a federal state and that there are rules on two levels: the federal level and the state level (the Bundesländer level). This means that there are also rules on nuclear energy on two levels: While the German Constitution (the Basic Law) provides the overall framework for legislative and administrative powers, it is the Atomic Energy Act (AtG) that provides the legal framework for the use of nuclear energy and the safe operation of nuclear installations. More detailed provisions (such as technical standards and requirements) are found in other instruments. However, it is the Bundesländer that have the overall responsibility. It is, for example, the Bundesländer that issue licenses to operators. This means that when the operators send their reports to the European Commission, the Bundesländer are copied into the correspondence. The Bundesländer also get the list of inspectors that come from the Euratom or the IAEA (before the list reaches the operators).

What is then the role of Germany in the absence of a national authority? To Germany, it is important that the Euratom is actually assuming its responsibility to control German operators; Germany must make sure to fulfil its international obligations, that is, Germany's obligations under the NPT. Therefore, German legislation requires that Euratom officials are always present at the IAEA inspections.

What are the implications of not having a national authority? As there is no national authority in place, much responsibility is left to the operators themselves. For example, it is the operators themselves that have to designate on-site representatives as required under Commission Regulation 302/2005, one for each facility.[131]

Moreover, the fact that Germany relies on the Euratom means that if something would go wrong, that is, if nuclear material is missing or in the unlikely event of diversion of nuclear material by an operator, it is the Euratom – not Germany – to be blamed. Of course, one may wonder if the issue of control (and hence responsibility) is not almost illusionary? In other words, although the Euratom has the formal *control* and not Germany, in the view of the public, would it not be likely that the national government

[130] The other founding Member States were France, Italy, and the Netherlands, Belgium, and Luxembourg. The Euratom system was established as a way of controlling that Germany would not develop nuclear weapons. Germany was not only the 'birthplace' of nuclear physics, but also the very reason to why the United States and the United Kingdom developed their nuclear programmes during the Second World War. However, the Euratom safeguards system was primarily set up in order to enable an agreement with the United States on nuclear technology. Germany's nuclear power programme was for many years very ambitious. Until 2011 and the Fukushima accident, Germany had 17 nuclear reactors and 25 % of its electricity was obtained from nuclear energy. Following the Fukushima accident, eight reactors were shut down immediately. As of 2017, only seven nuclear plants are in use. There are also some research reactors, training reactors, enrichment plants, and fuel manufacturing plants. Hans Hermann Remagen, Irmgard Niemeyer, Bernd Richter, Gotthard Stein, and Arnold Rezniczek, 'International Safeguards in Germany Status and Expectations,' IAEA-CN-184/304, available at: https://www.iaea.org/safeguards/symposium/2010/Documents/PapersRepository/304.pdf

[131] Cf. the situation in Sweden and Finland, where the national authority is the site representative for all facilities.

would be blamed?[132] More importantly, it is Germany that still has the formal *responsibility* under the NPT, not the Euratom. The State remains responsible to the IAEA although it has delegated its authority to control to another entity.[133]

In other words, the fact that the Euratom takes care of the control does not mean that it has subsumed the responsibility for the international commitments – the responsibility still rests with the Member States.

What about the Member State responsibility vis-á-vis the Euratom then? As explained, the safeguards provisions in the Euratom Treaty are directed to the operators, so the responsibility of the Member States is limited. Only a few provisions are directed to the Member States. However, recall that the Commission may initiate an infringement proceeding, which could eventually lead to that the Member State is brought to the Court of Justice of the European Union (CJEU). In other words, the fact that a national authority does not exist does not mean that there is no national responsibility. Under the Euratom, the formal responsibility can therefore seem to be divided as between the state (in this case Germany) and the operators.

So, the absence of a German national authority has an historical explanation. But Germany could at a later time have chosen to establish such an authority. In fact, the Euratom once asked if Germany was interested in having its own national authority, but Germany declined.[134] Perhaps the answer can be explained in economic terms. Money can be saved by not having a national authority; no resources have to be spent on inspectors and an administrative and organizational framework. In the case of Germany, it is the Euratom that is bearing such costs. One could also imagine that in light of Germany's role in history, it would be preferable that the main control (and responsibility) lies with international actors, rather than a national authority.

Yet, Commission Regulation 302/2005 seems to require at least some involvement by the Member State. So how does this work? It is important to point out that the absence of a national authority does not mean that Germany has no national structure for safeguards whatsoever. Within the Ministry for Economy and Energy,[135] there is a section that *assists* the operators in interpreting the rules and that can help explain deviances.[136] Thus, the Ministry (which here *replaces* a national authority) can be regarded as a *facilitator* (rather than regulatory or supervisory). That said, one cannot but wonder if the problems in the previously mentioned Transnuklear scandal and the ANF Lingen case could have been avoided with a national system in place.

6.4 Spain

Just like Germany, Spain lacks a specific national authority for nuclear safeguards. Instead of a specific authority, it is the Ministry of Energy, Tourism and the Digital

[132] In 2009, the IAEA decided that Germany would get Integrated Safeguards after five years of discussions. The IAEA performed a rigorous analysis as Germany had many nuclear activities and because of Germany's nuclear history. Germany had to provide information on nuclear research and development activities relating back from more than 20 years. This raised some concerns from the German side, as it seemed difficult, from a practical point of view.

[133] 'Although States distribute and/or delegate authority in many different ways, the State always remains the entity responsible to the Agency in respect to its commitments pursuant to safeguards agreements between it and the Agency.' See the IAEA document 'Systems of Accounting for and Control of Nuclear Material', https://www.iaea.org/sites/default/files/17204801824.pdf

[134] This request was possibly linked to a time where there was some malfunctioning of equipment and when Germany could not fulfil its international obligations. Since then, things have significantly improved and the need for a national authority has not arisen again.

[135] Bundesministerium für Wirtschaft und Energie. Internationale Kernmaterialüberwachung.

[136] Further, under the Ministry, there is a research unit that gives scientific advice. This is contracted out to a private company that works closely with the government.

Agenda (MINETAD) that has the overall responsibility for international commitments.[137] But as the ministry has only minimal possibilities to control (just like the case of Germany), the responsibility to control is with the Euratom. Spain became a member of the European Communities (EC) in 1986, so unlike Germany, it was *not* one of the founding Member States. This means that the explanation to the absence of a national authority is different from the German one.

When Spain joined the EC, it was not yet a member of the NPT. Thus, formally speaking, Spain did not have any international commitments in the field: there was no need for national control as there was no national responsibility. Further, according to Spain, NPT ratification was not necessary for EC membership as it was not part of the Euratom acquis communitaire.
However, as a Euratom member, Spain still had to take into account European and international rules. Thus, Spain entered a safeguard agreement similar to the one the Euratom had entered with the IAEA. Also, already in 1981, Spain had agreed to submit all its nuclear facilities to IAEA safeguards. But some EU Member States did not consider these actions as sufficient: they claimed that NPT ratification was a requirement for Euratom membership. Moreover, Spain's refusal to enter the NPT also gave rise to speculations. It was claimed that by not acceding to the NPT, Spain would keep its options open as it might become necessary in light of the volatile Middle East. Spain ratified the NPT in 1987 after considerable pressure.[138] But it was not necessary to establish a national authority for safeguards as the control was assumed by the Euratom.

The absence of a national authority means, inter alia, that Spain does not have national safeguards inspectors. Thus, only Euratom inspectors and IAEA inspectors perform inspections in Spain. Spain has entered an agreement with the European Commission that oblige Euratom inspectors to attend the IAEA inspections. In other words, the IAEA inspectors cannot inspect Spanish facilities without the attendance of Euratom inspectors. Although Spain does not have any own safeguard inspectors, in practice, however, a representative from the MINETAD (that is, the Ministry) also attends international (Euratom and IAEA) inspections. However, such attendance is not obligatory; there is no legislation in place that require national representatives to be present.

Moreover, Spain does not have a national accountancy system of nuclear materials. Instead, as required under Regulation 302/2005, Spanish operators send accountant reports monthly to the Euratom. The MINETAD receives copies of these communications. It thereby controls that operators complies with the Regulation.

It should also be mentioned that Spain is a so-called side-letter state under the IAEA Additional Protocol. As explained, this means that the Commission is entrusted with the implementation of certain provisions that are the responsibilities of the states. Spain reports its declarations under the Additional Protocol to the Commission. It is then the Commission who is responsible to send the declarations to the IAEA.

What is the role of Spain in the absence of a national authority? In the initial years as a Euratom member, Spain did not seem to have assumed a very active role vis-à-vis

[137] The main one is Act 25/1964 of 29 April 2 ('the Nuclear Energy Act'), which defines basic concepts. It provides that all physical and legal persons shall comply with the Spanish international obligations, Article 84 of the 1964 Nuclear Energy Act of Chapter XIII, amended by Article 16 of Act 24/2005.
[138] For example, the Euratom Supply Agency refused to conclude contract entered by Spanish firms prior Spain had signed the NPT. Spain acceded 19 years after the NPT was signed, and 17 years after it had entered into force. On Spain, see Katlyn Saba, 'Spain and the Non-Proliferation Treaty' in Harald Müller, *A Survey of European Nuclear Policy, 1985-87* (Palgrave McMillan: 1989, p. 111-130. See also Darryl A. Howlett, *EURATOM and Nuclear Safeguards* (New York: St. Martin's Press, 1990), p. 192.

Spanish operators. This is illustrated by two cases in which the European Commission sanctioned Spanish nuclear operators.

In the first case, the European Commission issued a warning to a Spanish institute for not having declared a nuclear installation. The installation should have been declared at the time of Spain's entry as a EU (Euratom) member (in 1986), but this did not happen until 1994.[139] The installation, which was used for educational purposes, was located at Escuela Técnica Superior de Ingenieros Industriales (ETSII), a school for university-grade engineers at the Universidad Politécnica de Madrid. The installation was 'discovered' when ETSII intended to export it. The Spanish authorities then informed the Commission of its existence.

The Commission issued a warning to the ETSII, the least severe sanction under the Euratom Treaty. The Commission explains that in taking the decision, it had considered both subjective and objective factors: the Commission noted that the intention was not to divert and also, that the ETSII had not been aware of the legal obligations under the Euratom Treaty. Moreover, the installation had not been operated since Spain's accession and the installation was no longer in possession of nuclear material or nuclear equipment.

As required under the Euratom Treaty, it is the operators themselves that are sanctioned, not the Member States. Thus, the *addressee* of the warning was the ETSII, and not Spain. However, the Commission *communicated* the warning also to Spain. In addition, as the nuclear installation had been known to the national authorities, the Commission decided to issue a Recommendation to Spain.[140] The Recommendation stated that Spain should adopt all necessary measures to ensure that all nuclear installations are declared in accordance to the Euratom Treaty. Spain was also recommended to inform within three months the Commission of the results of the measures taken. In other words, the Euratom does not have competence to force Member States to make operators to comply with the Treaty, it can only use soft measures (under Article 83.3 Euratom).

A few years later, in 1997, the Commission issued a warning to another Spanish company, Empresa Nacional del Uranio, SA, ('Enusa').[141] The warning concerned undeclared export of nuclear material from Spain to the United States. The Enusa had breached Article 79 Euratom, provisions in the Safeguards Regulation, and the Particular Safeguards Provisions for Enusa.

In deciding which sanction to be applied, the Commission carried out both an objective and a subjective analysis of the nature of the offences. The Commission held that the provisions breached are essential elements of Community legislation and that it had been impossible for the Commission to carry out its task assigned to it in the Treaty. The Commission noted that there was no motive behind the actions, but that they were a result of human error. The Commission also took into account that there had been no previous problems 'of substance' when it comes to applying safeguards at the Enusa since Spain became a Euratom member. Rather, the operator consistently showed an attitude of attention and awareness.

[139] Commission Decision (94/955) of 21 December 1994 relating to a procedure pursuant to Article 83 of the Euratom Treaty (XVII-004 Escuela Técnica Superior de Ingenieros Industriales de la Universidad Politécnica de Madrid), OJ L 371/16/Euratom.
[140] Commission Recommendation of 21 December 1994 on the application of Euratom Safeguards in Spain, OJ L94/956/Euratom.
[141] Commission Decision 97/873/Euratom of 12 December 1997 relating to a procedure in application of Article 83 of the Euratom Treaty, OJ L 354, 30.12.1997, p. 30–33.

The Commission also required the infringements to be rectified so that they do not recur in the future. To this end, the Enusa was required to produce an implementation report describing the measures taken to rectify the infringements. The warning was addressed to the operator (that is, the Enusa) and communicated to Spain, just like in the case described above. Unlike the case described above, however, there were no recommendation addressed to Spain.

As these two cases illustrate, in the initial years as a Euratom/EU member, Spain did not seem to have assumed a very active role. The warnings were directed to operators, and Spain was informed about them. In the first case, the Commission also issued recommendations to Spain. Yet, based on this limited material, one cannot conclude that the absence of a national authority will automatically lead to deviances from the Euratom requirements. However, a national authority might facilitate, and remind operators about their obligations under the Treaty. Thus, just in the case of Germany, one may wonder if the problems with Enusa could have been avoided with a national system in place.

7. Transnational Networks: ESARDA

As explained, the multilevel approach emphasises the existence of transnational networks that create new rules in an informal way. The ESARDA association (European Safeguards Research and Development Association) is an example of such a phenomenon.

The ESARDA was formed in 1969 in the wake of the expansion of nuclear energy production. The ESARDA coordinates and harmonises research and development activities of the partners. It also carries out joint research and development programmes.[142] Its purpose is to improve the quality and efficiency of nuclear safeguards. It is a forum for exchange of information between European safeguards authorities, nuclear facility operators, and universities and research centres. In other words, it includes those who control, those who are controlled, and those who carry out research in the field.[143] In addition, some international organisations such as the Euratom and the IAEA are also represented.

The ESARDA seems to be an example of such 'networked' governance, which takes place between agencies situated in different Member States and which makes implementation more uniform. As already pointed out, such regulatory networks may improve information exchange and enable mutual learning processes. Indeed, it seems that Member State authorities perceive ESARDA as something that can really contribute to efficiency and implementation; the ESARDA influences the way the authorities think about implementation. The European Commission's participation in the ESARDA might make it less likely that the ESARDA challenges the authority of the EU institutions, which, as previously explained, otherwise is a risk that comes with networked governance. The ESARDA is a type of network which the Commission links into (unlike networks that are initiated by the Commission).[144]

[142] Within the ESARDA, more than 100 experts from the Member States collaborate in working groups. The ESARDA organises major symposia, workshops, and seminars. The ESARDA has also a Bulletin, which publishes scientific and technical articles on safeguards.
[143] AREVA (France), ATI (Austria), CEA (France), CNCAN (Romania), EDF (France), ENEA (Italy), European Commission, FZJ (Germany), HAEA (Hungary), IKI (Hungary), IRSN (France), Ministry of Economy / MITyC (Spain), NNL (UK), NRI (CZ), NRPA (Norway), PAA (Poland), SCK-CEN (Belgium), Sellafield Ltd (UK), SFOE (Switzerland), Springfields Fuels Ltd (UK), SSM (Sweden), STUK (Finland), UKAEA (UK), VATESI (Lithuania), WKK (Germany).
[144] Burkard Eberlein and Edgar Grande, 'Beyond delegation: transnational regulatory regimes and the EU regulatory state' (2005) 12 *Journal of European Public Policy*, pp. 101–2.

8. Conclusions

This paper has examined the nuclear safeguard system from a multilevel governance perspective. It has discussed rules on different levels: the international level, European level, and national level. Together, they form a complex web of rules, because, as showed, the levels of rules are partly overlapping. Without discussing it in more depth, it can be briefly concluded that the multilevel nuclear safeguards systems analysed illustrate the three approaches of constitutionalism, global administrative law, and fragmentation of international law, mentioned in section 2 of this paper. Focus for the study was, however, the role of the Member State under these different levels of rules.

The study shows that the role of the Member State differs quite significantly between different Member States. The original EU/Euratom Member States do not have specific national authorities responsible for safeguards. Therefore, in these Member States, one could argue that only two levels of rules apply: the international level and the EU/Euratom level. The Member States without a national authority has an international responsibility, but there is no possibility to exercise control. The control has been 'delegated' to the Euratom. However, this does not mean that the Euratom has assumed the Member State's responsibility under the NPT; the responsibility – but not the control – is still with the Member State.

Some of the newer EU Member States have chosen to keep their national authorities. What is the reason thereto? The simple answer is that traditionally, states want to keep their control over all issues related to nuclear energy, including safeguards. The study examined Sweden and Finland in order to come closer to an answer to this question. Both Sweden and Finland have kept their national authorities. The main reason to why these Member States kept their authorities seems to be that EU accession took place *after* the NPT was established and after these Member States acceded to it. This suggests that the original ('founding') Member States are the exception. However, Spain does not have a national authority, and it is not an original EU Member State. In the case of Spain, the reason for the absence of a national authority seems to be that NPT accession came after EU/EC accession. So, timing matters. But we can also assume that 'institutional stickiness' as well as the geopolitical situation matter. If the geopolitical situation so requires, a national authority seems important as it can guarantee the independence of nuclear energy in the Member State.

Moreover, in Member States with a national authority, there seems often to be legislation in place that require national representatives – national inspectors – to be present at international inspections. The rationale for this presence of national inspectors might be a way of protecting national interests. It is considered too sensitive an issue to give access to international inspectors; unaccompanied access is therefore unthinkable. Another rationale is that since the State is responsible for fulfilling the obligations of the NPT, the presence of the national authority during IAEA inspections will permit direct information on the IAEA findings. When it comes to Euratom inspectors, however, unaccompanied access seems generally more acceptable. In Sweden, for example, the decision to accompany Euratom inspectors is taken on a case-by-case basis and there is no legislation that requires the presence of the authority.

In Member States with *no* national authority, representatives from ministries may attend the international inspections. The national representatives are to make sure that the Euratom is doing its job so that the Member State can live up to its responsibility under the NPT. In the case of Spain (and possibly also Germany), there is an agreement with the Euratom to attend the IAEA inspections.

Section 2 of this paper presented Egeberg's and Trondal's distinction between

‘indirect’, ‘direct’, ‘networked’ and ‘compound governance’. The paper shows that when it comes to nuclear safeguards, there is not much evidence of ‘indirect governance’, that is, the form of governance where the national authorities together with their ‘parent’ ministries, are the main and dominant actors when implementing rules. The main form of governance seems rather to be the ‘direct’ one, that is, where implementation of EU legislation takes place independently of national governments and where the Commission, rather than the national government, is the dominant interlocutor. But we can also notice traces of ‘Networked’ governance, which takes place between authorities situated in different Member States. As explained, the national authorities have formed the transnational network ESARDA, which is involved in information exchange. This international forum has an increasing impact. Thus, in line with Ebeberg’s and Trondal’s conclusion, as traces of several forms of governance can be noticed, a ‘compound’ form, which combines the different modes (direct and networked), seems to best illustrate this field.

When the national efforts and measures vary between the Member States, the EU efforts also vary. In other words, in some Member States, the EU (Euratom) must put in more resources than other Member States. As a result, the operators’ efforts might also vary. Of course, in order to find out if this is really the case, we would need to find empirical evidence. It would be worthwhile to investigate if operators have to report more in Member States with an active national authority than in Member States with no national authority. As a result, the level-playing field for nuclear operators might not be even. In EU law, an uneven level-playing field is perceived as something problematic as it distorts the internal market. On the other hand, operators in states with an active national authority can see benefits in the support the national authority can bring in dialogues with the IAEA and/or the Euratom.

Paper II:
Continuity and Change: Outer and Inner Face of the EU's Non-Proliferation Policy

1. Introduction

This paper aims to shed light on the inner and outer 'face' of EU nuclear non-proliferation. The Euratom safeguards is the 'inner face.' The Common Foreign and Security Policy and the Security Strategy (CFSP) comprise the 'outer face.' The inner and outer faces are interconnected, but very seldom discussed in one context. They are usually rather treated as distinct doctrinal boxes.

This distinction is also to be found on an institutional level: there are separate entities of the European Commission involved for the inner and outer faces. The division is so deep that the European Commission even has two geographically separate seats: whereas the outer face is situated in Brussels, the inner face is situated in Luxembourg. We can also note a similar institutional division on national levels.

This paper aims to explore these faces and bring them together. What are the links? Are there some common principles? There are two interrelated reasons why it is important to examine the inner and outer faces. Both reasons have to do with the concepts of consistency and coherency. First, consistency and coherency are important for any legal system; they are parts of the very definition of a legal system. Second, consistency and coherency between external and internal activities can be of significance if the EU is to be a credible global actor. Therefore, the inner and outer faces should mirror each other.

The paper is organised as follows. In section 2, the concepts coherence and consistency will be discussed. Section 3 will map out the inner face: the Euratom safeguard system. Section 4 will map out the outer face. It will discuss the competence issue as well as the evolution of the EU's nuclear non-proliferation policy. Section 5 seeks to evaluate and examines the links between the outer and inner faces.

2. Coherence and Consistency in the EU Legal Order

We shall now look a bit more in depth into the reasons why it is important to examine the inner and outer faces of the EU's non-proliferation policy. As mentioned, the reasons have to do with the concepts of coherence and consistency. We shall examine these concepts further down. But we first need to say a few words about the concept of a legal regime, because, as mentioned, coherency and consistency can be said to be parts of the very definition of a legal regime.

A legal regime (I will use the terms legal system, legal order, or legal regime interchangeably) can be defined as a set of rules that are addressing the same subject

matter, that have distinct rationales and objectives, and that use specific legal concepts; for example, we sometimes refer to the existence of a 'legal regime' when referring to a set of international rules, such as the international legal regime of 'nuclear law'.[145] The rules form 'legal regimes' despite the fact that the rules may have been established by different international organisations and despite the fact that the participating member states in those international organisations may vary.

We may also refer to 'legal regimes' in a national context. Particular branches, or areas of law, for example, 'criminal law' and 'environmental law', may occasionally be characterised as forming *separate* legal regimes. Yet, these policy areas could also be conceptualised as belonging to *the same* legal regime, as they are ultimately governed by the same constitution. In a Hartian or Kelsenian understanding of a legal order, they can be said to belong to the same legal regime because they share the same 'Grundnorm' or 'Rule of Recognition'.[146]

What about the concepts of coherence and consistency? They are central for any legal system. Prechal and van Roermund explain that without these concepts, a legal order cannot fulfil what it promises to do, that is, to reduce 'conflict by authoritative decision-making'.[147] In other words, a legal system requires coherency and consistency; there should be no lacunae or contradictions. In other words, coherence and consistency seem to be both *criteria* of a legal system and *requirements* of a legal system.

What does coherence, consistency, and unity mean in an EU context?[148] Several authors emphasise that the different language versions of the EU Treaties appear to refer to different concepts.[149] While the French and German versions use the term *cohérence* and *Kohärenz*, the English language versions (generally) use the term consistency.[150] The Court seems to suggest that the two terms cannot be used interchangeably, but that they seem to refer to *distinct* concepts.[151] In the literature, *consistency* is often referred to as the absence of contradiction whereas *coherence* to the existence of 'positive' connections. However, for the sake of simplicity, we shall make no specific distinction between the concepts.

What about these concepts in the treaty text? There are many references in the EU Treaties to consistency. The most central one is in Article 13 TEU, which states that the Union's institutional framework shall 'ensure the consistency, effectiveness and continuity of its policies and actions.' Further, Article 7 TFEU states that the Union shall 'ensure consistency between its policies and activities.' The Treaty also states that the Court of Justice of the European Union (CJEU) needs to take consistency into account: where the General Court considers that a case requires a decision of principle likely to affect the 'unity or consistency' of Union law, it may refer the case to the Court of Justice.[152] There are also some specific references that concern EU's external

[145] See e.g., Fabrizio Nocera, *The Legal Regime of Nuclear Energy: A Comprehensive Guide to International and European Union law* (Antwerp: Intersentia, 2005).
[146] For a more comprehensive discussion on the concept of a legal regime, Anna Södersten, *Euratom at the Crossroads* (Cheltenham: Edward Elgar Publishing, 2018).
[147] Sasha Prechal and Bert van Roermund, 'Binding Unity in EU Legal Order: An Introduction', in Sacha Prechal and Bert van Roermund (eds.), *The Coherence of EU Law: The Search for Unity in Divergent Concepts* (Oxford: Oxford University Press, 2008).
[148] Christoph Herrmann, Much Ado About Pluto? 'The Unity of the European Legal Order' Revisited, in Marise Cremona, Bruno de Witte (eds.), *EU Foreign Relations Law: Constitutional Fundamentals* (Oxford: Hart Publishing, 2008), p. 34.
[149] Christophe Hillion, 'Tout Pour Un, Un Pour Tous!', in Marise Cremona (ed.), *Developments in EU External Relations Law* (Oxford University Press: 2008), p. 12 and the references there in note 10.
[150] See, for example, Article 349 TFEU, which refers to 'the integrity and the coherence of the Union legal order'.
[151] Case 266/03, *Commission v. Luxembourg*, EU:C:2005:341; C-433/03, *Commission v. Germany*, EU:C:2005:462. For a discussion, see Hillion, ibid.
[152] Article 256.2 TFEU.

actions: Article 21.3 TEU states that the Union shall ensure consistency between the different areas of its external action as well as between its external actions and other policies. Further, Articles 16.6 TEU and 26.2 TEU state that the High Representative shall ensure consistency of the Union's external action.

The Euratom Treaty does not contain any specific references to either coherence, consistency, or unity. However, the Treaty contains a clause, Article 106a, which refers to institutional provisions in the EU Treaties. Among the referred provisions, we find Articles 7 and 13 TEU, mentioned above. Thus, through these referred treaty provisions, the concepts of coherence and consistency seem to be important concepts also within the framework of the Euratom Treaty.

In addition to these references, let us also not forget that the Euratom Treaty can be seen as the first 'source' of the concept of coherence, between the EU (Euratom) and the Member States. As Christophe Hillion points out, the roots of the principle of sincere cooperation can be found in Ruling 1/78, which concerned the Euratom's accession to the Nuclear Security Convention.[153] In this ruling, the Court pointed to the provision in the Euratom Treaty on mixed agreements (the original EEC Treaty did not contain such a clause)[154] and found that the Member States were bound by the principle of sincere cooperation. In other words, although coherence and consistency are not explicitly mentioned in the Euratom Treaty itself, these concepts are to be found as a part of the treaty.

Thus, coherence and consistency are important concepts in the EU legal order, and this is so both within the context of the EU Treaties and the Euratom Treaty.

What about these concepts when it comes to legislation and the formation of policies? The EU institutions seem to be well aware of the importance of these concepts: The European Commission recognizes the importance of coherence between the internal and external dimension of each Union policy.[155] The Commission explains that the EU's internal policy increasingly impacts on international relationships. According to the Commission, there is also a link in the other direction; many of the internal objectives depend on the effectiveness of the external policies.

What about these concepts and the interpretation of rules? The CJEU has held that the Court must fill normative lacunae in primary and secondary law and that it would otherwise 'lead to a result contrary to both the spirit of the Treaty […] and to its system.'[156] In other words, it is the role of the Court to ensure consistency in the EU legal system.

To sum up, coherence, consistency and unity seem to be both *criteria* of a legal system and *requirements* of a legal system. We have seen that these concepts exist within the framework of the Euratom Treaty, that the concepts are also of importance when it comes to legislation and the formation of policies, and that it is the role of the Court to

[153] *Ruling* 1/78, Ruling delivered pursuant to the third paragraph of Article 103 of the EAEC Treaty - Draft Convention of the International Atomic Energy Agency on the Physical Protection of Nuclear Materials, Facilities and Transports, EU:C:1978:202. For a discussion on the constitutional foundation of the duty of cooperation, see Christophe Hillion, 'Mixity and coherence: The significance of the duty of cooperation', in Christophe Hillion and Panos Koutrakos (eds.), *Mixed Agreements Revisited: the EU and Its Member States in the World* (Oxford: Hart Publishing, 2010), pp. 87–115.
[154] Article 102 Euratom states that 'agreements or contracts concluded with a third State, an international organisation or a national of a third State to which, in addition to the Community, one or more Member States are parties, shall not enter into force until the Commission has been notified by all the Member States concerned that those agreements or contracts have become applicable in accordance with the provisions of their respective national laws'.
[155] COM(2006)278, 'Europe in the World — Some Practical Proposals for Greater Coherence, Effectiveness and Visibility'.
[156] Case 294/83, *Les Verts v Parliament*, EU:C:1986:166, para. 25.

ensure consistency in the EU legal system. In the introduction to this paper, it was also mentioned that these concepts can be of significance if the EU is to be a credible global actor. This means that there should be coherence and consistency between the inner and outer faces; they should mirror each other.

It is now time to map out the provisions of the respective 'faces' of the EU's nuclear non-proliferation. Thereafter, we shall examine whether there is coherence and consistency between the inner and outer faces.

3. Inner Face: The Euratom Safeguard System

What we here refer to as the 'inner face' consists of the Euratom safeguard system. It is referred to as the 'inner face' because it is directed to operators in the Member States. Thus, as opposed to the measures that sort under the 'outer face', the safeguard system is inward-looking.

It is the task of the Euratom to 'make certain that nuclear materials are not diverted to purposes other than those for which they are intended' (Article 2.e Euratom). The provisions that detail this task, the safeguards provisions, are found in the Treaty's Chapter 7.

Under the safeguard provisions, the Commission shall satisfy itself that nuclear materials are 'not diverted from their intended uses as declared by the users'(Article 77).[157] The Commission must also assure that 'any particular safeguarding obligations assumed by the Community under an agreement concluded with a third State or an international organisation are complied with'.[158] In other words, the Commission has to make sure that the Euratom can guarantee its trading parties that the provisions are complied with.

Nuclear operators are required to give the Commission information on their facilities. They have to declare 'the basic technical characteristics' of their installations[159] and provide information on nuclear material in possession. They are required to keep and produce operating records in order to permit accounting for used or produced nuclear materials and for the transport of such materials.[160]

In order to verify that nuclear materials are not diverted from their intended use, the Commission may send inspectors into the territories of Member States (Article 81).[161] The inspectors shall have access to 'all places and data and to all persons who […] deal with materials, equipment or installations'. The Directorate Nuclear Safeguards in Luxembourg, a part of DG Energy is the responsible entity.

The Euratom safeguard system had an external and economic rationale. It was about enabling import of nuclear materials from the United States, which required that exported materials would only be used for civil purposes. The United States imposed unilateral inspection rights in their bilateral agreements,[162] and, this, some would argue, would equal an infringement of the Euratom's sovereignty. With a safeguards system

[157] The Treaty here refers to 'ores, source materials and special fissile materials'. These materials are defined in Article 197 Euratom.
[158] According to Article 77.b Euratom, the Commission must also assure that the supply provisions (Title II, Chapter 6 on Supplies) are complied with.
[159] Article 78 Euratom.
[160] The Treaty here refers to ores, source materials and special fissile materials. Regarding the transport, the treaty merely refers to 'source materials and special fissile materials' (Articles 78–79 Euratom).
[161] It is the Commission that recruits the inspectors (Article 82 Euratom).
[162] See Allan S. Nanes and Reuben Efron, 'The European Community and the United States: Evolving Relations' (1960) 22 *The Review of Politics* 179–80.

in place, however, the Euratom would have the direct responsibility; American inspection rights could be avoided. The Euratom safeguards system was also a way of preventing Germany from developing nuclear weapons.

Beyond its safeguards function, the Euratom has no non-proliferation objectives; the Treaty never included a prohibition of nuclear weapons. The safeguard system was merely introduced to verify that no Member State would *covertly* develop nuclear weapons. In fact, the Treaty explicitly *exempts* from the safeguard system materials declared for military use.[163] Further, in the *Jason* Case, the CJEU even decided that nuclear energy for military application falls outside the *entire* scope of the Treaty.[164]

To sum up, the inner face is not only inward-looking, that is, it is addressed to the Member States, it also delimits itself to the civil use of nuclear energy. In contrast, the outer face is, as we shall see, outward-looking and concern itself with military issues.

4. Outer Face: CFSP

The 'outer face' consists of the EU's nuclear non-proliferation policy, governed by the Common Foreign and Security Policy (CFSP). The CFSP is considered to be the 'outer face', because the measures adopted are generally directed to other states, that is, to states outside the EU.

This section first maps out some competences that could be used in the field of non-proliferation. It then explores the development of the EU non-proliferation policy.

4.1 Competences

What are the competences that could be used in the field of nuclear non-proliferation? As Wessel rightly points out, there are no provisions in the EU Treaties that explicitly refer to 'non-proliferation' or to 'nuclear non-proliferation'.[165] However, there is a range of provisions that may cover non-proliferation.

Article 21(2) TEU states that 'the Union shall define and pursue common policies and actions, and shall work for a high degree of cooperation *in all fields* of international relations, in order to… (a) safeguard its… security… (c) preserve peace, prevent conflicts and strengthen international security.'[166] Presumably, this covers non-proliferation. Further, Article 24.1 TEU refers to the Union competence in the field of CFSP. This treaty provision states that this competence 'shall cover *all areas* of foreign policy and *all questions* relating to the Union's security, including the progressive framing of a common defence policy that might lead to a common defence.'[167] Thus, as the CFSP embraces all fields and areas, the development of EU non-proliferation policy should also be included. In this context, one could also mention Article 28.1 TEU, which states that the Council shall adopt 'necessary decisions' where 'the international situation requires operational action by the Union.'

So far, we have only discussed competences within the remit of the EU Treaty. Does also the Euratom Treaty have an 'outer face' that can be used in the field of nuclear non-proliferation? The most obvious provisions are the ones in Chapter 10 of the

[163] Article 84(3) Euratom.
[164] Case C-61/03, *Commission v. United Kingdom*, EU:C:2005:210.
[165] Ramses A. Wessel, (2016) 'Legal Competences of the European Union in Relation to the Non-Proliferation of Weapons of Mass Destruction,' in Workshop 'The Changing Landscape of EU Nuclear Non-Proliferation,' 17-11-2016, Uppsala, Sweden.
[166] Emphasis added.
[167] Emphasis added.

Euratom Treaty (Articles 101 to 106): the chapter on external relations. Article 101 states that 'the Community may, within the limits of its powers and jurisdiction, enter into obligations by concluding agreements or contracts with a third State, an international organisation or a national of a third State.' This could be understood as a competence *in foro, ex foro* or 'the principle of parallelism', that is, if the Treaty provides an *explicit internal* competence in a field, there must also be an *implicit external* competence in that same field.[168] Consequently, one could argue that the Euratom in fact has an *ex foro* competence to conclude international agreements on nuclear non-proliferation.

Further, the Euratom Treaty also contains some 'material' provisions with an explicit external dimension. For example, Chapter 6 on Supplies (Articles 52 to 76) states that the Supply Agency has an exclusive right to conclude supply contracts relating to nuclear materials 'coming from inside the Community or from outside'. The Supply Agency also has 'a right of option' on nuclear materials produced in the Member States (Article 52). The right of option means that the producers have to offer to the Agency any nuclear materials prior to any transaction (i.e., before the materials are used, transferred, or stored).[169] If the Agency does not exercise this right, the producer may dispose of the available production outside the Community (Article 59).[170] The Commission must authorize of such disposal. The Commission is prohibited from granting authorisation 'if the recipients of the supplies fail to satisfy it that the general interests of the Community will be safeguarded or if the terms and conditions of such contracts are contrary to the objectives of this Treaty.' According to Grunwald, this is the probably the 'first non-proliferation obligation ever adopted in a multilateral treaty.'[171]

Thus, it seems that also the Euratom has an 'outer face': The Treaty contains provisions that aim to establish measures directed to third states or actors.

4.2 Development of the EU non-proliferation policy

The origins of the EU's non-proliferation policy can be traced back to 1981, when a working group was set up within the European Political Co-operation (EPC).[172] Within this framework, the Member States adopted in 1984 the so-called 'Dublin Declaration'[173] which concerns the implementation by the Community Member States of the first set of NSG (Nuclear Suppliers Group) Guidelines on nuclear transfers from 1978. The Declaration states that the principles contained in the NSG Guidelines

[168] See Trevor C. Hartley, *The Foundation of European Community Law: An Introduction to the Constitutional and Administrative Law of the European Community* (Oxford: Oxford University Press, 2007), pp. 175–7; and Piet Eeckhout, *External Relations of the European Union: Legal and Constitutional Foundations* (New York: Oxford University Press, 2004), p. 59.
[169] Article 57 Euratom.
[170] Special provisions apply for the Euratom's option on 'special fissile materials' (see definition in Article 197). Special fissile materials may be exported only through the Agency and in accordance with Article 62 Euratom. The existence of special rules can be explained by the fact that special fissile material can be used for military applications.
[171] Jürgen Grunwald, 'Nuclear Non-proliferation under Two Treaties: The EURATOM and the EU Perspective', in Workshop 'The Changing Landscape of EU Nuclear Non-Proliferation,' 17-11-2016, Uppsala, Sweden.
[172] See Kamil Zwolski, 'The External Dimension of the EU's Non-proliferation Policy: Overcoming Inter-institutional Competition' (2011) 16 *European foreign affairs review* 325–40; and Clara Portela, 'The Role of the EU in the Non-Proliferation of Nuclear Weapons: The Way to Thessaloniki and Beyond', PRIF Reports No. 65, 12–20.
[173] Declaration of Common Policy adopted by the ministers for foreign affairs of the ten members of the Community on 20 November 1984, Communication Received from the Resident Representative of Italy on Behalf of the European Community, INFCIRC/322.

constitute ‘a common, fundamental set of rules for all the Member States in relation to their nuclear exports’.[174]

However, apart from the Dublin Declaration, in the initial years, it was difficult for the Member States to formulate a credible non-proliferation policy, as France was not a party to the NPT (Non-proliferation Treaty). France’s accession to the NPT in 1992 opened up for a more active policy. This coincided with the adoption of the Maastricht Treaty, which provided for the institutional setting for the CFSP.

Already from the start, non-proliferation was recognised as a significant policy area.[175] Yet, the EU’s non-proliferation policy did not take off until 2003, in the wake of 9/11. Several measures were adopted this year. But their relationship to the Euratom is sometimes unclear. Most important of the measures adopted was the European Council’s adoption of the ‘Non-Proliferation Strategy’[176] (in parallel to the European Security Strategy),[177] which refers to international treaties such as the NPT and the safeguards agreements with the IAEA. It states that non-proliferation must be a central element in the EU’s external actions and that ‘[t]he EU must act with resolve, using all instruments and policies at its disposal’. The Commission has clarified that those ‘instruments and policies’ include some Euratom measures[178]: safeguards activities; the use of the Euratom Supply Agency; and safeguards research.[179]
The Council adopted a set of basic principles and an Action Plan. One concrete step was the ‘Council Common Position on the universalisation and reinforcement of multilateral agreements in the field of non-proliferation’.[180] The aim was to promote the universal adoption and implementation of some key multilateral agreements, including the NPT, Safeguards Agreements, and the IAEA Additional Protocols. It should be noted that this Common Position is adopted on the basis of the CFSP despite the fact that it is the Euratom – and not the EU – that has concluded the safeguards agreements with the IAEA. It is also the Euratom that has concluded the IAEA Additional Protocols. More generally, it is the Euratom – and not the EU – that is the party of the Euratom-IAEA co-operation agreement.[181] Nevertheless, the Euratom is not mentioned in the Common Position. One explanation might be that the Euratom today is perceived as the ‘inner face’, that is, directed to its Member States rather than to third states.

[174] The Declaration was adopted within the framework of the EPC, because the NSG Guidelines were regarded to be a ‘strategic issue’. However, the possible use of the Euratom Treaty had been present in the discussions: the Declaration stated that the Member States recalled ‘the rights and obligations deriving from their membership of the European Atomic Energy Community’.
[175] European Council, Lisbon, Presidency Conclusions, 26–27 June 1992, Annex I, Report to the European Council in Lisbon on the likely development of the Common Foreign and Security Policy (CFSP) with a view to identifying areas open to joint action vis-à-vis particular countries or groups of countries, Doc. SN 3321/2/92, § 35.
[176] ‘The EU Strategy against Proliferation of Weapons of Mass Destruction’, Council of the European Union, Brussels, 10 December 2003, 15708/03.
[177] ‘A Secure Europe in a Better World: European Security Strategy’, European Council, Brussels, 12-13 December 2003.
[178] Commission Communication on nuclear non-proliferation, COM(2009) 143 final.
[179] The Commission has also explained how the instruments can be used to develop stronger international guarantees: by strengthening the support for the NPT and nuclear safeguards; extending cooperation with key nuclear countries through bilateral Euratom agreements; and contributing to the development of an international system of guaranteed supply of nuclear fuel for countries willing to develop nuclear energy without having their own nuclear fuel cycle facilities.
[180] Council Common Position on the universalisation and reinforcement of multilateral agreements in the field of non-proliferation of weapons of mass destruction and means of delivery, Brussels, 11 November 2003, 14310/03.
[181] Co-operation agreement between the European Atomic Energy Community and the International Atomic Energy Agency, OJ 1975 No. L329, p. 28.

Also in 2003, the Council agreed on the language for a 'non-proliferation clause', to be included in future or revised agreements with third countries.[182] The clause obliges parties to comply and implement obligations under existing non-proliferation treaties. The clause also commits parties to 'sign, ratify, or accede to, as appropriate, and fully implement all other international instruments'. The relationship between the use of the clause and Euratom agreements is not very clear. The Euratom has concluded some bilateral agreements on peaceful cooperation on nuclear energy that, inter alia, set up conditions on safeguards, including adoption and adherence to the Additional Protocol.[183] Where such a Euratom agreement exists, the use of the non-proliferation clause seems superfluous. We can also note that it is not clear whether the Euratom can also include such clauses in its agreements; the Euratom is not mentioned in the documents on the non-proliferation clause.

In the recent years, non-proliferation policy seems to have a less prominent position than previously. In 2016, the Global Strategy for European Foreign and Security Policy[184] was set up, but WMD is only mentioned briefly.[185]

As this overview shows, the choice between the CFSP and Euratom remains unclear. Although the Euratom Treaty has an 'outer face' that could be applied for the same purpose as the CFSP, the CFSP is often chosen.

5. Links and differences between the Outer and Inner Face

In the previous two sections, the inner and outer faces of the EU's non-proliferation policy have been briefly mapped out. As explained, the inner face, the Euratom safeguards provisions, are directed to the Member States. The outer face, the EU's non-proliferation policy, is directed to so-called third states, that is, states outside the EU. The inner and outer faces take their respective legal bases in two separate treaties – the Euratom Treaty and the EU Treaty (the CFSP provisions). This final section turns to the following questions: What are the links between the inner and outer faces? What are the similarities and differences between them? Is there need for coherence and consistency?

One important distinction between the inner and outer faces concern their respective characteristics. The inner face, the Euratom Treaty, is 'supranational' in nature. This means, inter alia, that the Commission has an almost exclusive role to submit proposals for legal acts; the Council generally takes decisions by qualified majority voting instead of unanimity; and the European Parliament has a role in the decision-making procedure. Moreover, the CJEU has jurisdiction to interpret and review the legality of legal acts. In the literature, this is sometimes referred to as the 'Community method.' However, it should be noted that to the Euratom Treaty, only an 'early version' of the 'Community method' applies: the European Parliament has a very limited role: often, it only has a right to be consulted. In contrast, under the prior EC Treaty (the treaty precedent to the TFEU), the Parliament gained more influence for each major treaty revision.

[182] The EU policy as regards the non-proliferation element in the EU's relationships with third countries, adopted by the Council at its 17 November 2003 Session, Brussels, 19 November 2003, 14997/03. When it comes to existing agreements, the insertion of the non-proliferation clause is merely an aim, 'on any occasion of renewal or revision of such agreements'.
[183] The Euratom agreements also set up conditions to adhere to international conventions on nuclear safety, waste management, and physical protection.
[184] In 2016, the Strategy was complemented by a 'Shared Vision, Common Action: A Stronger Europe – Global Strategy for European Foreign and Security Policy', Brussels, June 2016.
[185] Lars-Erik Lundin, 'The European Union and weapons of mass destruction: a follow-on to the global strategy?', SIPRI, Non-Proliferation Papers, No 58, 2017.

Whereas the inner face has supranational characteristics, the outer face, the CFSP provisions in the EU Treaty, has 'intergovernmental' characteristics. This means that the Council generally takes decisions by unanimity. It also means that the Parliament has a limited role in the decision-making process. And it means that the Court has limited or no jurisdiction to interpret and review the legality of legal acts. In the literature, this decision-making procedure is sometimes referred to as the 'cooperation method' as it is similar to how most international organisations work.[186]

These differences have an historical explanation.[187] The Euratom Treaty was adopted for economic reasons and not for non-proliferation purposes. The Treaty does not prohibit the use of nuclear weapons as it was regarded as a strategic and sensitive issue. The CFSP was developed at a much later stage, and in order to protect the Member States' sovereignty, an intergovernmental rather than supranational form of cooperation was chosen.

In this context, some important institutional differences should also be mentioned. The Euratom safeguards and non-proliferation policy are scattered within the Commission: at least three different DGs hold responsibilities in this wide field.[188] This 'institutional fragmentation' might create some tensions, which could lead to incoherent choices.[189] However, some of these tensions should have been remedied by the Lisbon Treaty, which strengthened the role of the High Representative and introduced the European External Action Service.[190] It should also be mentioned that for the European Parliament, the choice between using the Euratom and the CFSP does not matter much – the European Parliament plays only a minimal role under both the Euratom and the CFSP.

So, there are some important differences between the inner and outer faces, but do these differences matter? It was argued that coherence and consistency are important concepts because they are requirements of any legal system. It was previously also mentioned that the concepts of coherence and consistency can be of significance if the EU is to be a credible global actor. However, we cannot observe any obvious legal difficulties arising from the fact that nuclear non-proliferation is dealt with under separate treaties. Yet, the choice between the treaties appears inconsistent at times. Recall that the Euratom Treaty contains some provisions with an explicit external dimension. For some reason, these provisions do not seem to be applied to their fullest potential. The CFSP provisions, which are regarded as 'less intrusive', are applied instead, that is, through the cooperation method rather than the community method.

---

[186] See Renaud Dehousse, '"The Community Method": Cronicle of a Death too Early Foretold', in Renaud Dehousse and Laurie Boussaguet (eds.), *The Transformation of EU Policies – EU Governance at Work*, CONNEX Report Series, No 8 (2008) 7.

[187] Because of these different characteristics, one could argue that the Euratom Treaty and the EU Treaties constitute separate legal orders. This argument is strengthened by the fact that the CJEU prior the Lisbon Treaty argued that the EU Treaty and the European Community Treaty (EC Treaty) were 'separate legal orders.' Joined Cases C-402/05 P and C-415/05 P, *Yassin Abdullah Kadi and Al Barakaat International Foundation v. Council of the EU and Commission of the EC*, EU:C:2008:461, para 202. Since the Lisbon Treaty came into force in 2009, the CFSP provisions are under the same legal framework as the other 'non-CFSP' policy areas. Consequently, the Court no longer sees the CFSP and 'non-CFSP' as 'separate legal orders.'

[188] A division under DG Energy governs Euratom Safeguards: Directorate E 'Nuclear Safeguards' and also Directorate D3 (under Nuclear Safety and Fuel Cycle) 'Nuclear Accountancy, Methods and Evaluation' (previously named the Euratom Safeguards Office). DG Relex governs the CFSP measures and DG Trade the trade issues. There are also two Council committees: the Committee on Non-Proliferation (CONOP) and the Committee on Nuclear Affairs (CONUC).

[189] Kamil Zwolski, 'The External Dimension of the EU's Non-proliferation Policy: Overcoming Inter-institutional Competition' (2011) 16 *European foreign affairs review* 325–40.

[190] Note that Article 106a Euratom refers to Article 18 TEU on the High Representative, but not to Article 27 TEU on the External Action Service. One could therefore argue that the External Action Service should not be activated when it comes to Euratom activities.

We should finally mention that even if one could argue that there is coherence and consistency between the inner and outer faces, third parties might perceive the Euratom and the EU as separate actors. It would probably strengthen the perception of the EU as a unified actor if non-proliferation had only ‘one home’.

Paper III:
Brexit, Euratom and nuclear proliferation

1. Introduction

One of the issues absent from the academic (and public) debate on the United Kingdom's (UK) referendum vote to withdraw from the European Union (EU) (commonly referred to as 'Brexit') is what will happen to the UK's membership in the European Atomic Energy Community (Euratom). The Euratom Treaty was signed in Rome in 1957,[191] together with the European Economic Community (EEC) Treaty.[192] It was concluded for an unlimited period and it establishes a Community that has a separate legal personality from the EU. Thus, the EU and Euratom form two separate, although closely linked entities.

Euratom's principal mission is related to the economy, tasked with 'creating the conditions necessary for the speedy establishment and growth of nuclear industries';[193] in other words, to promote the nuclear industry. This reflects the high expectations for nuclear energy in the 1950s. Some even believed that the development of nuclear energy would trigger an industrial revolution; however, the Euratom only came to play a minor role in the European integration process. Despite this, the Euratom Treaty has remained, almost unchanged, since its adoption[194] and is still frequently applied, although it is unclear to what extent it has boosted the nuclear industry.

This article has a two-fold purpose. The first purpose is to address the constitutional issue of 'partial membership'. All EU member states are also members of the Euratom. It has always been assumed that with membership in the EU also comes a membership in Euratom. But, what about withdrawal? What are the arguments for 'partial membership'?

The second purpose of this article is to shed light on some implications of Brexit as it relates to Euratom. The most serious consequences are perhaps found in the area of nuclear non-proliferation. The United Kingdom is one of two nuclear weapon states in the EU (France being the other one). Withdrawal from Euratom means withdrawal from its control system, the system of so-called nuclear safeguards. Under this system, the European Commission sends inspectors to the member states to ensure that nuclear material is not being diverted and used for military purposes.

[191] Treaty Establishing the European Atomic Energy Community (1957), 298 UNTS 167, entered into force 1 January 1958 (Euratom Treaty) (consolidated version *Official Journal of the European Union* (OJ) C 203 (7 June 2016)).
[192] Treaty Establishing the European Economic Community (1957), 298 UNTS 11, entered into force 1 January 1958 (EEC Treaty or Treaty of Rome).
[193] Euratom Treaty, Article 1.
[194] Euratom's activities are listed in Article 2 of the Euratom Treaty. Euratom shall, *inter alia*, promote research, disseminate information, establish uniform safety standards for the protection of workers and the general public, facilitate investment, ensure the supply of ores and nuclear fuels, make certain that nuclear materials are not diverted to purposes other than those for which they are intended, create a nuclear common market, and establish relations with countries and international organizations as will foster progress in the peaceful uses of nuclear energy.

This article begins, in Part 2, by exploring the possibility of the United Kingdom staying a member of Euratom, while leaving the EU. Part 3 examines the implications of Brexit in the area of nuclear industrial development – the main task of the Euratom. The article addresses Brexit and non-proliferation in Part 4 and concludes in Part 5.

2. Brexit: A full exit or a possibility for partial membership?

There are different legal options as to the future relationship between the United Kingdom and the European Union. These options include the United Kingdom becoming a European Economic Area (EEA) member, becoming a European Free Trade Association (EFTA) member and negotiating a free trade and association agreement with the EU.[195] Some of these options might also be available and chosen for the future relationship between the UK and Euratom. And in some areas, special 'Euratom' solutions must be crafted. But, when it comes to Euratom, there is an even more fundamental question that must first be addressed: Does exit from the EU automatically mean withdrawal from Euratom? Or, is it legally possible for the UK to withdraw from the EU, but stay in Euratom?

2.1 Withdrawal from the European Union

Euratom and the European Community[196] have always shared the same institutions, but the Communities had separate sets of institutional provisions. Just like the EC, Euratom was long lacking a withdrawal clause and the possibility of exit was unclear. This changed when the Lisbon Treaty came into force in 2009.[197] The EU[198] now contains a withdrawal clause: Article 50 of the TEU states that 'Any Member State may decide to withdraw from the Union.' In order to 'trigger' Article 50, the UK must notify the European Council and a withdrawal agreement shall be crafted. The EU Treaties[199] shall cease to apply to the United Kingdom two years after the notification to the European Council.[200] The Brexit referendum took place in June 2016, and the UK government has announced it will trigger Article 50 by the end of March 2017.[201]

2.2 Withdrawal from Euratom

The Lisbon Treaty repealed the institutional provisions of the Euratom Treaty and replaced them with a reference to the institutional provisions in the EU Treaties.[202] One

[195] Piris, J-C (2015), 'Should the UK Withdraw from the EU: Legal Aspects and Effects of Possible Options,' European issues, n°355, available at: www.robert-schuman.eu/en/doc/questions-d-europe/qe-355-en.pdf.
[196] Originally the European Economic Community (EEC), the EEC was renamed the European Community (EC) upon the entry into force of the Treaty on European Union, OJ C 191 (29 July 1992), entered into force 1 November 1993 (TEU or Maastricht Treaty) (consolidated version OJ C 202/13 (7 June 2016)).
[197] Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community, signed at Lisbon, 13 December 2007**,** OJ C 306 (17 December 2007), entered into force 1 December 2009 (Lisbon Treaty).
[198] Following the Lisbon Treaty, the EC became the EU. Euratom remains as a separate entity.
[199] The so-called 'EU Treaties' are the TEU and the Treaty on the Functioning of the European Union, OJ C 115/47 (9 May 2008) (consolidated version) (TFEU) (consolidated version OJ C 202/47 (7 June 2016)).
[200] This timeline applies unless the European Council, in agreement with the United Kingdom, unanimously decides to extend this period.
[201] See, e.g., BBC (2016), 'Brexit: Theresa May to trigger Article 50 by end of March', www.bbc.com/news/uk-politics-37532364. However, the UK's High Court has ruled that the UK Parliament must have its say on whether to trigger Article 50. See R (Miller) v Secretary of State for Exiting the European Union [2016] EWHC 2768 (Admin).
[202] Article 106a of the Euratom Treaty refers to certain provisions in the TEU and the TFEU that shall apply to the Euratom Treaty.

of the provisions that applies to the Euratom Treaty is Article 50 of the TEU.[203] Consequently, the same provision that is used for withdrawal from the EU can be used for withdrawal from the Euratom. But, while the withdrawal clause applies to the Euratom, there is nothing that prevents 'partial membership', i.e., withdrawal from only the EU or from only Euratom. The EU Treaties do not mention Euratom and the only link between the EU Treaties and the Euratom Treaty is found in the earlier mentioned Euratom Treaty Article 106a, which incorporates certain institutional provisions in the EU Treaties to the Euratom. Therefore, the conclusion must be that Euratom and the EU are separate entities with separate legal personalities, although closely linked through the shared institutional framework.

Of course, one may object to this conclusion and say that prior to the Lisbon Treaty, it would *not* have been possible to withdraw from only the EC or only the EU, although they could have been seen as separate 'entities'. In the (for EU law scholars) well-known *Kadi* case, the Court of Justice of the European Union (CJEU) stated that the EU and the EC formed two 'integrated but separate legal orders'.[204] Consequently, why would it be possible to withdraw from the Euratom Treaty when it was not possible to withdraw from only the EU (and stay as a member of the EC)? One answer is that prior to the Lisbon Treaty, the EU lacked an express legal personality. Moreover, some argued that the EU was itself a weak legal entity; some viewed it merely as a 'nominal framework for inter-state cooperation without any legal existence of its own'.[205] Leaving this EC/EU comparison aside, it is perhaps more important to point to the fact that the Euratom Treaty is a sectoral treaty with a separate set of objectives and that it is still 'functional' in nature. Unlike the TEU, the Euratom Treaty does not contain values and the individual is not at 'the centre of its construct'.[206] While the EU has evolved over the years, much due to the development of human rights, this is not the case for Euratom; the EU and Euratom are very different in nature.

This argument on 'separate entities' could of course be countered by pointing to the fact that there is now a shared institutional framework. Without the EU's institutional provisions, Euratom cannot (after the Lisbon Treaty) stand on its own, so the argument goes. Further, one might argue that Article 50 refers to membership of the 'Union' and that this is not simply a withdrawal procedure, but a 'withdrawal from the Union' procedure. The view defended here, however, is that 'partial membership' is legally possible. That is because Euratom Article 106a clarifies that the references to the 'Union' in the referenced institutional provisions (*inter alia*, TEU Article 50), shall be taken as references to Euratom. In other words, Article 50 becomes in this way a 'procedure of Euratom'. Strictly speaking, this means that the UK withdrawal notice must specifically mention Euratom if the intention is to leave Euratom as well.[207]

---

[203] On the EU withdrawal clause, see Tatham, A. F. (2012), ''Don't Mention Divorce at the Wedding, Darling!': EU Accession and Withdrawal after Lisbon', in Biondi, A., P. Eeckhout and S. Ripley (eds.), *EU Law after Lisbon*, Oxford University Press, Oxford, pp. 128-154. See also, Herbst, J. (2005), 'Observations on the Right to Withdraw from the European Union: Who are the 'Masters of the Treaties'?', *German Law Journal*, Vol. 6, No. 11, pp. 1755-1760; Łazowski, A. (2012), 'Withdrawal from the European Union and Alternatives to Membership', *European Law Review*, Vol. 37, pp. 523-540; and Weiler, J.H.H. (1985), 'Alternatives to Withdrawal from an International Organization: The Case of the European Economic Community', *Israel Law Review*, Vol. 20, pp. 282-298.

[204] Joined Cases C-402/05 P and C-415/05 P, Yassin Abdullah Kadi and Al Barakaat International Foundation v. Council of the EU and Commission of the EC, ECLI:EU:C:2008:461, para 202.

[205] See de Witte, B. (2001), 'Chameleonic Member States: Differentiation by Means of Partial and Parallel International Agreements,' in de Witte, B., D. Hanf and E. Vos (eds.), *The Many Faces of Differentiation in EU Law*, Intersentia, Antwerp, p. 258, who refers to Pechstein, M. and C. Koenig (1998), *Die Europäische Union: Die Verträge von Maastricht und Amsterdam*, 2nd ed., Mohr Siebeck, Tübingen.

[206] See Weiler, J.H.H. (2010), Editorial, 'Individuals and Rights: The Sour Grapes', *European Journal of International Law*, Vol. 21, No. 2, pp. 277-280.

[207] A separate question is what the domestic UK law stipulates. The UK's European Union (Amendment) Act of 2008 states that: 'a reference to the EU in an Act or an instrument made under an Act includes, if and in so far as the context permits or requires, a reference to the European Atomic Energy Community'. Para. 3(2). One might argue that the European Union Referendum Act 2015 includes Euratom. ('A

Although legally possible, partial membership would, however, likely create some practical difficulties as Euratom and the EU share the same institutions. The institutions would need a different composition depending on whether it is an issue decided by Euratom or the EU. This could make it more complicated to adopt measures on a joint legal basis, that is, one legal basis in the EU Treaties and one in the Euratom Treaty. And the EU and Euratom have adopted quite a few such instruments.[208] Moreover, a decision to stay as a member of Euratom would likely give rise to objections from the other EU member states. After all, Euratom seems to be regarded as an integrated part of the EU. So, although legally possible, other member states might not see it as desirable for the UK to remain in Euratom. And, of course, the question is also whether it would be desirable for the UK to stay.

3. Nuclear industrial development

Almost all of Euratom's activities (as listed in the Euratom Treaty) revolve around nuclear industrial development. Perhaps paradoxically, when it comes to the nuclear industry, the most important implication of Brexit has to do with the EU rather than Euratom: the application of the EU state aid rules.[209] These rules have, for example, come into play regarding the decision by the UK to provide support for the construction of a new nuclear power plant at Hinkley Point – a decision that has been challenged by Austria and Luxembourg. And further expansion of the UK nuclear industry is planned. Following Brexit, the EU state aid rules might no longer apply. This means that the United Kingdom might be able to operate a more active industrial policy, but the situation is far from clear. Depending on the future relationship between the United Kingdom and the EU, EU state aid rules might continue to apply, but through another arrangement.[210]

When it comes to the Euratom Treaty, the implications of Brexit are perhaps even less obvious. One implication is that contracts on nuclear material will no longer have to go through the Euratom Supply Agency (ESA).[211] The ESA has an exclusive right to conclude supply contracts.[212] This enables Euratom to balance demand and supply, with an overall objective of EU energy security. In the 1950s, when the treaty was adopted, resources (i.e., nuclear material) were scarce. But, a shortage of nuclear materials has not occurred since then. Consequently, ESA involvement is only a formality. Yet, the ESA has the discretion to refuse to conclude supply contracts, which could run counter to the attainment of the Euratom objectives.[213] And indeed, in the recent past, the ESA has refused to sign contracts that would make individual users too

referendum is to be held on whether the United Kingdom should remain a member of the European Union.'. Para. 1(1).)

[208] One example is the Community Civil Protection Mechanism, which can be used for all kinds of emergencies, including nuclear accidents and radiological emergencies. Council Decision 2007/779/EC, Euratom of 8 November 2007 establishing a Community Civil Protection Mechanism (recast), OJ L 314 (1 December 2007), p. 9.

[209] The core state aid provisions can be found in Articles 107-109 of the TFEU. The European Commission defines states aid 'as an *advantage* in any form whatsoever conferred on a *selective basis to undertakings* by national public authorities.' European Commission (2016), 'State aid control', http://ec.europa.eu/competition/state_aid/overview/index_en.html (emphasis in original).

[210] For a discussion, see Froggatt, A., T. Raines and S. Tomlinson (2016), 'UK Unplugged? The Impacts of Brexit on Energy and Climate Policy', Research Paper, Europe Programme & Energy, Environment & Resources Department, Chatham House, the Royal Institute of International Affairs, London, p. 17.

[211] The Euratom Supply Agency was established under Articles 2(d) and 52 of the Euratom Treaty to ensure a 'supply of ores, source materials and special fissile materials' 'by means of a common supply policy on the principle of equal access to sources of supply'. Euratom Treaty, Article 52(1). The full provisions are outlined in Articles 52-76 of the Euratom Treaty.

[212] Euratom Treaty, Article 52(2)(b).

[213] Case C-357/95 P, Empresa Nacional de Urânio SA (ENU) v. Commission of the European Communities, ECLI:EU:C:1997:144 ('the ENU Case').

dependent on uranium from Russia.[214] Therefore, Brexit means that British nuclear operators will no longer have to deal with this.

Another area that is linked to the development of the nuclear industry is research. Brexit means that the United Kingdom will no longer be a part of the Euratom research programmes. Much more could be said here, but suffice it to say that some kind of association agreements might be carved out, and perhaps there will be a similar construction for general (EU) research.

Finally, it should be mentioned that in practice, Euratom has moved away from its original main task of promoting the nuclear industry. Today, Euratom has a 'new rationale'; most of Euratom's actual activities revolve around nuclear safety. Relatively recently, in 2009 and 2011, Euratom adopted a legal framework in the form of two directives on respectively nuclear safety and nuclear waste.[215] Brexit means that any further amendments of these directives will not affect the United Kingdom. [216] But this does not mean that nuclear safety will be put at risk. When the nuclear safety framework was adopted, the main concern was the new member states in Eastern Europe, where nuclear safety was not up to western standards. As it currently stands, the EU nuclear safety framework is not particularly far-reaching; it does not go much further than the international instruments in the field (although there are ongoing discussions to adopt more detailed legally binding technical standards). However, on a symbolical level, Brexit is damaging.

4. Nuclear non-proliferation

When the UK joined the European Communities (the EEC, Euratom and the ECSC) in 1973, it had already developed nuclear weapons. The UK's possession of nuclear weapons was not an immediate obstacle to accession. France, one of the original member states, also had nuclear weapons; therefore, membership could not be denied on this ground. It should also be pointed out that the Euratom Treaty is not a non-proliferation treaty; it does not prohibit the use or production of nuclear weapons. Having said that, one of the Euratom's main tasks is to make sure that 'nuclear materials are not diverted to purposes other than those for which they are intended'.[217] In order to achieve this task, the Euratom Treaty establishes a system of nuclear safeguards.[218]

The Euratom Treaty requires that nuclear operators, for example, give the European Commission information on their facilities.[219] The operators also have to provide

[214] Case C-161/97 P, Kernkraftwerke Lippe-Ems GmbH v. Commission of the European Communities, ECLI:EU:C:1999:193 ('the KLE Case'). For the same reason, in 2015, Hungary had to revise its deal with Russia on nuclear material. See, e.g., Byrne, A. and C. Oliver (2015), 'Hungary to revise Russia nuclear deal blocked by EU', *Financial Times*, available at: www.ft.com/content/d473b86c-c99c-11e4-b2ef-00144feab7de.

[215] Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations, OJ L 172 (2 July 2009) (2009 Safety Directive); Council Directive 2011/70/Euratom of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste, OJ L 199 (2 August 2011) (2011 Waste Directive). For an overview, see e.g., Södersten, A. (2012), 'The EU and Nuclear Safety: Challenges Old and New', Swedish Institute for European Policy Studies, European Policy Analysis, Issue 2012:10epa.

[216] The 2009 Safety Directive has already been amended once, in 2014. Council Directive 2014/87/Euratom of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations, OJ L 219 (25 July 2014).

[217] Euratom Treaty, Article 2(e).

[218] The safeguards provisions are laid out in Title II, Chapter 7 Euratom. The Commission has two main tasks, which are laid out in Article 77. First, the Commission is to satisfy itself that nuclear materials are 'not diverted from their intended uses as declared by the users'. Second, it must assure that 'any particular safeguarding obligations assumed by the Community under an agreement concluded with a third State or an international organisation are complied with'. This reflects the very rationale behind the system: it guarantees its trading parties that the provisions are complied with.

[219] Euratom Treaty, Article 78.

information on nuclear material in their possession and they are required to keep and produce operating records. A central aspect of the safeguards system is the use of inspections and the Commission sends inspectors into the territories of member states.[220] In 2014, there were 161 inspectors working for Euratom and 1 234 inspections were carried out.[221] The Euratom Treaty states that 'inspectors shall at all times have access to all places and data and to all persons who […] deal with materials, equipment or installations'.[222] Their task is to verify that nuclear materials are not diverted from their intended use.

4.1. Purpose of the Euratom safeguards system

When it was established in the 1950s, the purpose of the Euratom safeguards system was to make it possible to import nuclear materials from the United States, the world's then leading supplier of fissile material.[223] The United States required that its exported materials would only be used for civil purposes and that the exports could be tracked. The US therefore imposed unilateral inspection rights in their bilateral agreements.[224] For some, a clause on unilateral inspection rights would equal an infringement of Euratom's sovereignty. But, with a safeguards system in place, such a clause could be avoided; Euratom would have the direct responsibility.

Of course, the Euratom safeguards system was also a way of preventing Germany from developing nuclear weapons; no country of the original six would be able to *covertly* develop nuclear weapons. The purpose of the Euratom safeguards system is to make sure that nuclear materials are not diverted to purposes other than those for which they are *intended*. But as mentioned, the Treaty does not prohibit the possession of nuclear weapons. In fact, the Treaty even explicitly *exempts* from the safeguards system materials declared for military use.[225] In 2003, the Court of Justice of the European Union (CJEU) also confirmed that nuclear energy for military application falls outside the *entire* scope of the Treaty. This ruling was the result of an infringement procedure against the UK.[226]

---

[220] Euratom Treaty, Article 81.

[221] Of the 1 234 inspections, 216 were carried out in the United Kingdom. EC, Directorate-General for Energy, Directorate E – Euratom Safeguards (2014), *Report on the Implementation of Euratom Safeguards in 2014*, EC, Luxembourg, available at https://ec.europa.eu/energy/sites/ener/files/documents/20151211%20Annual_Report%202014.pdf.

[222] Euratom Treaty, Article 81.

[223] For an overview of the development of the Euratom Safeguards system (until 1990), see Howlett, D. A. (1990), *EURATOM and Nuclear Safeguards*, Palgrave Macmillan, New York. See also Lindroos, A. (1997), 'The Role of Euratom in the Non-Proliferation Regime', *Finnish Year Book of International Law*, Vol. 8, p. 307; Gorove, S. (1965), 'The First Multinational Atomic Inspection and Control System at Work: Euratom's Experience', *Stanford Law Review*, Vol. 18, No. 2, pp. 160-186; and Patel, B. and P. Chare (2007), 'Fifty Years of Safeguards under the Euratom Treaty – a Regulatory Review', *ESARDA Bulletin*, Vol. 36, pp. 3-10.

[224] The US, however, did not do this with Canada and the UK. Nanes, A. S. and R. Efron (1960), 'The European Community and the United States: Evolving Relations' *The Review of Politics*, Vol. 22, No. 2, pp. 179-180.

[225] Euratom Treaty, Article 84(3) reads: 'The safeguards may not extend to materials intended to meet defence requirements which are in the course of being specially processed for this purpose or which, after being so processed, are, in accordance with an operational plan, placed or stored in a military establishment'.

[226] Case C-61/03, Commission v. United Kingdom, ECLI:EU:C:2005:210. The case concerned a reactor, which was used in the UK's nuclear propulsion programme for nuclear submarines. The reactor was to be decommissioned and the European Commission requested that the UK send detailed information so that it could determine whether 'general data' required under Euratom Treaty, Article 37 should be provided. Under this provision, each member state shall provide the Commission with general data relating to any plan for the disposal of radioactive waste. The data has to be such that the Commission can determine whether the implementation of such a plan has transboundary effects. In the view of the UK, the reactor did not fall within the scope of the Euratom Treaty, as it was used for military purposes. The Euratom Treaty does not contain a general derogation clause similar to Article 346 of the TFEU, which provides that no member state shall be obliged to supply information that the member state considers contrary to the essential interests of its security should such information be disclosed. The Court decided that the absence of such a clause must mean that military activities are excluded from the scope of the Euratom Treaty. The

Euratom inspections of nuclear weapon states are especially important because they make the safeguards system credible, which then allows Euratom to guarantee to its trading partners that the conditions on the use of materials are adhered to.[227] Therefore, controlling nuclear weapon states is mainly about facilitating trade for Euratom/the EU as a whole. But, the control is also necessary in order for the EU to be a credible global actor; it shows that the EU takes non-proliferation seriously in that it makes certain that no *covert* diversion will take place on European soil.

4.2 Implications of Brexit on European nuclear non-proliferation

Euratom is safeguarding nuclear material in the United Kingdom, except for material intended for military use. When the United Kingdom exits the EU, this control will stop. However, this does not mean that there will be no external safeguards control in the UK whatsoever. All EU member states are subordinated to two sets of controls. The International Atomic Energy Agency (IAEA) has a safeguards system, which works in parallel with the Euratom one. The IAEA system was created a decade after the Euratom system by the adoption of the non-proliferation treaty (NPT).[228] Under the IAEA system, which is global in its approach, non-nuclear weapon states are obliged to conclude so-called comprehensive safeguards agreements (CSA) with the IAEA. Such agreements imply that all nuclear material and all nuclear activities in a state are subject to IAEA safeguards. Euratom concluded a CSA with the IAEA in 1973.[229] It is a mixed agreement where the member states are parties alongside Euratom and the IAEA.[230] The UK and France are not parties since they are nuclear weapon states. They have instead concluded separate agreements, so-called 'voluntary offer' agreements with the IAEA.[231] A voluntary offer agreement is of more limited scope than CSAs in that they exclude facilities with national security significance. Thus, the IAEA only performs safeguards in a small number of installations in the UK, installations that are under 'voluntary offer'.[232]

Court's finding was confirmed in Case C-65/04, Commission v. United Kingdom, ECLI:EU:C:2006:161 ('Gibraltar Submarine Case').

[227] See Euratom Treaty, Article 77(b). See also Schleicher, H. W. (1980), 'Nuclear Safeguards in the European Community: A Regional Approach', *IAEA Bulletin*, Vol. 22, No. 3/4, pp. 45-50.

[228] Treaty on the Non-Proliferation of Nuclear Weapons (1968), IAEA Doc. INFCIRC/140, 729 UNTS 169, entered into force 5 March 1970 (NPT).

[229] Agreement between the Kingdom of Belgium, the Kingdom of Denmark, the Federal Republic of Germany, Ireland, the Italian Republic, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the European Atomic Energy Community and the International Atomic Energy Agency in Implementation of Article III, (1) and (4) of the Treaty on the Non-Proliferation of Nuclear Weapons (1973), IAEA Doc. INFCIRC/193. See also Agreement between the Kingdom of Belgium, the Kingdom of Denmark, the Federal Republic of Germany, Ireland, the Italian Republic, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the European Atomic Energy Community and the International Atomic Energy Agency in implementation of Article III (1) and (4) of the Treaty on the non-proliferation of nuclear weapons (78/164/Euratom), OJ L 51 (22 February 1978), p. 1. The NPT provides that its requirements can be met by states either individually or together with other states. NPT, Article III.4.

[230] The Euratom Treaty has a specific clause on so-called mixed agreements. See Euratom Treaty, Article 102.

[231] These agreements are 'tripartite', that is, the parties are the UK, the IAEA and Euratom. The UK concluded a safeguards agreement with Euratom and the IAEA on 6 September 1976. The Text of the Agreement of 6 September 1976 between the United Kingdom of Great Britain and Northern Ireland, the European Atomic Energy Community and the Agency in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons (1978), IAEA Doc. INFCIRC/263, entered into force 14 August 1978. France, Euratom and the IAEA concluded a safeguards agreement in July 1978. The Text of the Agreement of 27 July 1978 between France, the European Atomic Energy Community and the International Atomic Energy Agency for the Application of Safeguards in France (1981), IAEA Doc. INFCIRC/290, entered into force 12 September 1981. At that time, France was not yet a party to the NPT, not joining until 1992.

[232] See Office for Nuclear Regulation (ONR) (2016), 'IAEA Safeguards in the UK', www.onr.org.uk/safeguards/iaeauk.htm. ONR explains that the IAEA currently inspects 'parts of the Sellafield facility … and the gas centrifuge enrichment facility at Capenhurst'. Also, in 2014, Euratom carried out 1 234 inspections and 643 of them were joint inspections together with the IAEA. EC, Directorate-General for Energy, Directorate E – Euratom Safeguards (2014), *Report on the Implementation*

Euratom's safeguards system is much wider in scope than the IAEA system as it does not differentiate between nuclear weapon states and non-nuclear weapon states; the Commission has inspection rights in all EU member states and it safeguards all civil nuclear material. When Brexit takes place, the 'regional' layer of safeguards, that is, the Euratom layer, will cease to exist in the UK. Although the international layer at the IAEA level will continue, the result is a significant downscaling of safeguarding activities in the UK.

Another implication of Brexit concerns enforcement. As opposed to the international (IAEA) system of safeguards, the Euratom system has real 'teeth' in the event a member state breaches its obligations. The Commission can initiate an infringement procedure and eventually bring the matter before the CJEU. Moreover, the Commission may impose sanctions in the event of an infringement on the part of persons or undertakings.[233] These can take the form of: (a) a warning; (b) the withdrawal of financial or technical assistance; (c) the placing of the undertaking under the administration of a person or board; or (d) the withdrawal of nuclear materials. The sanctions are in order of severity, with the withdrawal of nuclear material being the most severe. Over the years, the Commission has issued several warnings (some of them to operators in the UK),[234] but it has also (at least on one occasion) placed a company under administration.[235]

The IAEA system has none of this, as it is much softer. Unlike the Euratom system, the IAEA system is not backed up by a court. There is no system of sanctions directed to the operators. There are fewer inspections by the IAEA in the UK. For the UK and the nuclear operators, Brexit means that the supranational actor will no longer be there. Brexit does not lead to proliferation risks, but on a global level – and on a symbolical level – downscaling safeguards efforts is not a positive thing.

At the EU, a considerable amount of money is devoted to the inspection of nuclear weapon states; a substantial part of the Euratom budget for safeguards goes to inspecting the reprocessing plants at Sellafield in the UK and at Cap le Hague in France.[236] On a positive note, Brexit means money saved as the Commission no longer will have to inspect the UK.

But, Brexit also means that there will be a symbolic loss; European control of a nuclear weapon state will be lost. However, seen from a EU perspective, one could put forward a somewhat constrained argument that the EU's credibility as a global actor will increase; the EU will only have one nuclear weapon state rather than two. This can make it somewhat easier to put pressure on other states. The situation could be compared to the situation before 1992, when France was not a party to the NPT. It was for many years difficult for the member states to formulate a credible non-proliferation

of Euratom Safeguards in 2014, EC, Luxembourg, p. iv, available at https://ec.europa.eu/energy/sites/ener/files/documents/20151211%20Annual_Report%202014.pdf.

[233] More specifically, in case an inspection is opposed, the Commission can apply to the ECJ for an order to make the completion of the inspection compulsory. If there is a 'danger in delay', the Commission itself may issue a written order to proceed with the inspection.

[234] See, for example, the warning issued by the Commission addressed to BNG Sellafield Limited. Commission Decision 2006/626/Euratom of 15 February 2006 pursuant to Article 83 of the Treaty establishing the European Atomic Energy Community, OJ L 255 (19 September 2006), p. 5. In 2006, BNG Sellafield Limited brought an action to the Court to annul that decision. It submitted, *inter alia*, that the Commission lacked the competence to adopt the decision and the measures imposed. In 2009, the applicant informed the Court that it wished to discontinue proceedings. See Case T-121/06, British Nuclear Group Sellafield v. Commission, ECLI:EU:T:2009:469.

[235] This decision was challenged in the ECJ. See Case C-308/90, Advanced Nuclear Fuels v. Commission, ECLI:EU:C:1993:23 ('ANF Lingen').

[236] In 2014, the budget for the Euratom's safeguards was EUR 20 520 000. EC, Directorate-General for Energy, Directorate E – Euratom Safeguards (2014), *Report on the Implementation of Euratom Safeguards in 2014*, EC, Luxembourg, p. 18, available at https://ec.europa.eu/energy/sites/ener/files/documents/20151211%20Annual_Report%202014.pdf.

policy. France's accession to the NPT in 1992 created the opportunity for a more active policy.[237] So, according to this argument, Brexit might not necessarily be a bad thing. Yet, the argument is constrained, because, of course, control over a nuclear weapon state is always beneficial. It should also be pointed out that in any event, as an international actor, the EU would remain stronger with the United Kingdom as a member than without it.

5. Concluding remarks

Rightly so, Euratom is not at the centre of the Brexit debate. But, there are some important implications that should be put into light. This brief article has discussed some of them. One implication is found in the area of nuclear non-proliferation. Brexit means a significant downscaling of safeguards in the UK; the Euratom safeguards system will no longer apply. The IAEA safeguard system, which works in parallel with the Euratom one, will continue to apply to the UK, but the scope is not as far-reaching as the Euratom system. However, it would be a clear overstatement to say that Brexit will lead to a risk for nuclear proliferation. The implications are rather to be found at the symbolic level; the downscaling of control of a nuclear weapon state is obviously not a good thing.

The article has also pointed to the possibility for the United Kingdom to stay as a member of Euratom. If the United Kingdom wishes to stay in Euratom but exit the EU, this is legally possible. However, this sets up some practical problems as the institutional composition will vary depending on whether a legal instrument is to be adopted on the basis of the EU Treaties or the Euratom Treaty. Although problematic, this should not be an impossible issue to solve. But, it is more likely that a complete, full-fledged, exit is to be preferred, both for the United Kingdom and the other member states.

[237] In 1995, the first important step was taken when the EU adopted a Joint Action to help build consensus on the indefinite extension of the NPT. See Council Decision 94/509/CFSP of 25 July 1994 concerning the joint action adopted by the Council on the basis of Article J.3 of the Treaty on European Union regarding preparation for the 1995 Conference of the States parties to the Treaty on the Non-Proliferation of Nuclear Weapons, OJ L 205 (8 August 1994), p. 1.

2019:06

The Swedish Radiation Safety Authority has a comprehensive responsibility to ensure that society is safe from the effects of radiation. The Authority works to achieve radiation safety in a number of areas: nuclear power, medical care as well as commercial products and services. The Authority also works to achieve protection from natural radiation and to increase the level of radiation safety internationally.

The Swedish Radiation Safety Authority works proactively and preventively to protect people and the environment from the harmful effects of radiation, now and in the future. The Authority issues regulations and supervises compliance, while also supporting research, providing training and information, and issuing advice. Often, activities involving radiation require licences issued by the Authority. The Swedish Radiation Safety Authority maintains emergency preparedness around the clock with the aim of limiting the aftermath of radiation accidents and the unintentional spreading of radioactive substances. The Authority participates in international co-operation in order to promote radiation safety and finances projects aiming to raise the level of radiation safety in certain Eastern European countries.

The Authority reports to the Ministry of the Environment and has around 300 employees with competencies in the fields of engineering, natural and behavioural sciences, law, economics and communications. We have received quality, environmental and working environment certification.

Strålsäkerhetsmyndigheten
Swedish Radiation Safety Authority

SE-171 16 Stockholm
Solna strandväg 96

Tel: +46 8 799 40 00
Fax: +46 8 799 40 10

E-mail: registrator@ssm.se
Web: stralsakerhetsmyndigheten.se

Ale Tryckteam AB, Bohus, 2018