

# Nuclear Safety and Security in Europe

Marco Balboni

## 1 General Framework: The Euratom and European Union Treaties

As a matter of principle, the Euratom Treaty does not provide for a clear competence in the matter of Nuclear Safety and Security (NSS).<sup>1</sup> Euratom's major objective is to promote nuclear industrial development. In light of this objective, the Community is meant to promote research and ensure the dissemination of technical information; establish uniform safety standards to protect the health of workers and of the general public; ensure that these standards are applied; and facilitate and ensure investment, particularly by encouraging new ventures by undertakings.<sup>2</sup>

In this framework, Title 2, Chapter 3 of the Euratom Treaty is entitled 'Health and Safety', but deals exclusively with issues concerning radiation protection for the workers and the general public, setting out the content and limits of the powers of the Community in this field.<sup>3</sup> In particular, Articles 30 and 31 provide for the establishment of basic standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation. Article 30 provides a definition of the basic standards and Article 31 describes the procedure for the adoption and enforcement of those standards. Article 32 provides that the basic standards established according to Article 30 may be revised or supplemented in accordance with the procedure laid down in Article 31, while Article 33 specifies the duties of the Member States in implementing the obligations coming from the European framework and the duties of reporting to the Commission.<sup>4</sup> The last provisions provide

- 
- 1 The European Atomic Energy Community (EAEC – Euratom) was established in 1957 as one of the then three Communities. While the European Economic Community has evolved into the present European Union and the European Coal and Steel Community has expired (in 2002), Euratom continues to exist without substantial changes to its autonomous personality.
  - 2 See also the competences attributed to the Euratom Supply Agency by the Council Decision establishing Statutes for the Euratom Supply Agency, 2008/114/EC, Euratom (2008) OJ L41 15.
  - 3 D Fouquet, 'Nuclear Policy in the EU from a Legal and Institutional Point-of-View', in Haas R, Mez L, Ajanovic A (eds), *The Technological and Economic Future of Nuclear Power. Energiepolitik und Klimaschutz. Energy Policy and Climate Protection* (Springer vs 2019).
  - 4 Art 33 says that 'Each Member State shall lay down the appropriate provisions, whether by legislation, regulation or administrative action, to ensure compliance with the basic

a legal basis for legislation in the field of surveillance of radioactivity levels, apparently giving an important role to the Commission which reflects the so-called dirigiste imprint given by the drafters to the Euratom Treaty.<sup>5</sup> Not very clear is the external competence of the Community, especially in relation to the competences maintained by the Member States.<sup>6</sup>

It seems clear that Article 30 does not give any competence to Euratom to directly safeguard Nuclear Power stations. As indicated by O' Driscoll:

[i]t essentially provides for the Community to establish a series of dose limits for exposure of human beings to radiation [...] But it does not provide any competence to Euratom either with respect to possible damage to the natural environment caused by radiation, and perhaps even more remarkably, it provides no Euratom Community competence with respect to the safety of nuclear reactors.<sup>7</sup>

In other words, competences are limited to radiation protection, which focuses on effects of radioactivity on human health, not on nuclear safety as such, which rather focuses on technical aspects of installations. Nuclear safety was not included in the Euratom Treaty as an autonomous competence with an autonomous legal basis.<sup>8</sup>

This framework depends basically on the rationale upon which the Euratom Treaty was initially conceived. Essentially, it is and remains an organisation

---

standards which have been established and shall take the necessary measures with regard to teaching, education and vocational training. The Commission shall make appropriate recommendations for harmonising the provisions applicable in this field in the Member States. To this end, the Member States shall communicate to the Commission the provisions applicable at the date of entry into force of this Treaty and any subsequent draft provisions of the same kind'.

5 Arts 34–39. On these provisions, see below Section 2.

6 Art 101, para 1 Euratom says 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'. See also art 29, para 1, according to which 'Where an agreement or contract for the exchange of scientific or industrial information in the nuclear field between a Member State, a person or an undertaking on the one hand, and a third State, an international organisation or a national of a third State on the other, requires, on either part, the signature of a State acting in its sovereign capacity, it shall be concluded by the Commission'.

7 M O'Driscoll, *The European Parliament and the EURATOM Treaty: past, present and future* (European Parliament, Luxembourg, 2002).

8 A Söndersen, *Euratom at the Crossroads* (European University Institute 2014) 283. The present paper owes a lot to this PhD thesis, which offers an extensive analysis of the problems dealt with here.

whose main object is to improve the development of nuclear energy among Member States. Therefore, the Treaty does not fit into the actual internal energy market and its concerns about safety and security. The technology it was established to support is no longer economically competitive. There are now a multitude of possible suppliers which can guarantee security without the risks and internalised burdens associated with nuclear energy production, storage and radioactive waste.

Despite these limits, the Treaty has never been amended so far, even if some Member States have complained about this.<sup>9</sup>

However, thanks to the case law of the Court of Justice, Euratom seems to benefit from a new competence in the field of NSS, which may provide a new rationale for the organisation.

The defining moment for this development lies in the worldwide response to the Chernobyl accident in 1986, which is also the starting point of the Euratom policy in the field of NSS, despite the lack of an autonomous legal basis in the Treaty.

As is well known, in the wake of the accident, four conventions were adopted at the international level under the aegis of the IAEA: the Convention on Early Notification of a Nuclear Accident, the Convention on Assistance in the case of a Nuclear Accident or Radiological Emergency (the two Emergency Conventions), the Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.<sup>10</sup> These Conventions form the so-called 'nuclear safety family'.

Shortly after their adoption, Euratom, which had been a negotiator, took steps for acceding, but the problem of competence arose. In particular, the

9 See, for instance, Declaration No. 54 made by the Federal Republic of Germany, Ireland, the Republic of Hungary, the Republic of Austria and the Kingdom of Sweden, annexed to the Final Act of the Intergovernmental Conference which adopted the Treaty of Lisbon (2007), according to which 'Germany, Ireland, Hungary, Austria and Sweden note that the core provisions of the Treaty establishing the European Atomic Energy Community have not been substantially amended since its entry into force and need to be brought up to date. They therefore support the idea of a Conference of the Representatives of the Governments of the Member States, which should be convened as soon as possible': Consolidated Version of the Treaty on the Functioning of the European Union (2012) OJ C326 47.

10 Convention on Early Notification of a Nuclear Accident (1986); Convention on Assistance in the case of a Nuclear Accident or Radiological Emergency (1986); Convention on Nuclear Safety (1994); Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (1997). See A Gioia, 'Nuclear Accidents and International Law', in A De Guttry, M Gestri, G Venturini (eds), *International Disaster Response Law* (T.M.C. Asser Press 2012).

Commission and the Council disagreed on the extent to which Euratom could be bound by the Conventions. With the *Nuclear Safety Case*, settled in 2002, the Commission brought an action before the Court of Justice for partial annulment of the Council Decision approving the accession to the Nuclear Safety Convention, particularly of the attached Declaration adopted on the basis of Article 30(4)(iii) of the Convention, which requires a 'regional integration organization' willing to accede to declare 'what articles of the Convention apply to it, and the extent of its competence in the field covered by those articles'. According to the Commission, the Declaration infringed Community law in that it did not refer to all the competences of the Community in the fields covered by the Convention, particularly in the field of installations safety.<sup>11</sup> In order to ensure the 'practical effect' of the 'Health and Safety' provisions of the Euratom Treaty, the Court of Justice found it was 'not appropriate [...] to draw an artificial distinction between the protection of the general public and the safety of sources of ionizing radiation', or, in other words, distinguish between 'radiation protection' and 'nuclear safety for installations', adding that the development of scientific knowledge requires an integrated approach between radiation protection and nuclear safety. On the basis of these arguments, the Court was able to give a broad interpretation, especially of Articles 32 and 33 of the Euratom Treaty, thereby broadening the competence of Euratom to include also NSS policy.<sup>12</sup>

As is evident, the concrete effect of that case was to give to the Euratom Treaty a new rationale, while the initial one, *ie* the promotion of nuclear industry, appeared already obsolete.

The disagreement between the Council and the Commission on the competence issue resulted in a significant delay in acceding to the four international Conventions on nuclear safety. Despite the role played by Euratom during the negotiations and the specific clause on accession for regional integration organisations, Euratom only acceded to the Conventions years after their adoption, joining the Nuclear Safety Convention in 2000, the Joint Convention in 2005 and the two Emergency Conventions in 2006. Nevertheless, the *Nuclear Safety Case* has been of great importance for ensuring the full participation of the Community in the international conventions mentioned above and for the development of the internal legislation in the field.

11 Case C-29/99, *Commission v. Council* (2002) ECR I-11221.

12 Art 32 provides for supplementary measures to the basic standards recalled by art 30, and art 33 recalls the duties of the Member States in implementing Community obligations: see above.

If at the beginning Euratom was probably the only European Community to have competences in the matters of 'Health and Safety' in the nuclear field, even if limited to certain aspects, this is not any more the case. The progressive expansion of its competences has made the EU another important actor in the field.

The EU has no competences in the areas of operational safety of nuclear power plants, management and safe disposal of radioactive waste, storage or disposal facilities, or decommissioning of installations.<sup>13</sup> However, the conferral to the EU of certain general competences may have the effect of including also nss policy. This is especially true with competences in the environmental field, conferred to the then European Community with the approval of the Single European Act in 1986.<sup>14</sup> Following the conferral of this competence, a number of provisions equally relevant for nss policy have been adopted on the basis of the EU competences.<sup>15</sup> Clearly, radiation protection and environmental protection are closely linked and this may imply a certain overlap between the two sets of provisions. More generally, most of the competences conferred to the Euratom Community may be included in the more general EU competencies.<sup>16</sup>

This finding rises a number of questions.

First of all, the need to maintain a specific treaty on nuclear matters. This is too large an issue to discuss here. Suffice to say that a merger of the Euratom Treaty into the Treaties establishing the European Union is widely supported.<sup>17</sup>

Second, the relations between the Euratom Treaty and the Treaties concerning the European Union. Article 106a, para 3 of the Euratom Treaty says that 'The provisions of the Treaty on European Union and of the Treaty on the Functioning of the European Union shall not derogate from the provisions of this Treaty'. The 'shall not derogate' clause has often been interpreted as an expression of the principle *lex specialis derogat legi generali*. In the interpretation of the Court of Justice, this seems to imply that whenever the Euratom Treaty is silent, the EU Treaties may apply, especially as far as rules and

---

13 D Fouquet (n 3) 169.

14 Even if the Community had already intervened in the matter of the environment on the basis of the so-called flexibility clause.

15 Below Section 2.

16 Starting with the establishment of free circulation within the European Market, one of the main objectives of the Euratom Treaty at the beginning, and the relations with third countries: D Fouquet (n 2) 178.

17 A Sönderesen (n 8) 33.

principles of a fundamental character are concerned.<sup>18</sup> A case in point is the *Temelín* case concerning Austrian legislation which, in substance, authorised actions for injunction to prevent a potential nuisance caused by an installation situated abroad, while for installations situated in the country only an action for compensation was admitted. In this case, the European Court of Justice (ECJ) declared that the discrimination contained in the Austrian law 'leads to the same outcome as a difference in treatment on grounds of nationality'. This discriminatory treatment 'does come within the scope of application of the EAEC Treaty' and cannot be 'justified on grounds of protecting life, public health, the environment or property rights' because 'the Community legislative framework contributes precisely and essentially towards ensuring such protection'.<sup>19</sup>

However, it remains unclear and open to discussion to what extent EU principles and rules may be transposed into the framework of the Euratom Treaty and caution seems to be appropriate in the matter.<sup>20</sup>

Third, the problem of choosing the correct legal basis for the adoption of the legal acts. This question is particularly crucial, considering the different processes of decision making that characterise the two organisations. Having never been amended, within the Euratom Treaty the role of the European Parliament is purely consultative, while this is not any more the case within the European Union,<sup>21</sup> where the European Parliament usually assumes the role of co-legislator with the Council, as is the case in the field of the environment. In fact, sometimes the European Parliament has challenged the legal basis chosen for the adoption of certain acts relevant to the environmental field, but the Court of Justice has normally dismissed such actions.<sup>22</sup>

With this framework in mind, the following sections consider the relevant legislation. In Section two, the analysis looks at measures of prevention and preparedness, while Section three deals with response and recovery measures.<sup>23</sup>

18 See also art 106, para 1 which enumerates a number of Articles of the European Union Treaties which 'shall apply to' the Euratom Treaty.

19 Case C-115/08, *Land Oberösterreich v. ČEZ, Temelín case* (2009) ECR I-10265.

20 One may think, for instance, of the EU rules on competition: A Söndersen (n 8) 408.

21 According to some, it is precisely for this reason that the Member States are unwilling to open a process of amendment of the Treaty. See I Cenevska, 'The European Parliament and the European Atomic and Energy Community: A Legitimacy Crisis?' (2010) 35 ELR 415.

22 Below Section 2, n 41.

23 Although it is not always easy to distinguish between the different kinds of measures mentioned in the text, prevention and preparedness measures tend to precede the event,

## 2 Measures of Prevention and Preparedness

Measures of prevention and preparedness basically concern three areas: radiation protection, nuclear safety and waste treatment. Measures concerning radiation protection are typically based on Euratom Treaty provisions, while measures concerning nuclear safety and waste treatment have been adopted in order to implement or facilitate the implementation of the international conventions belonging to the so called 'nuclear safety family'.

As said, Title 2, Chapter 3 of the Euratom Treaty, entitled 'Health and Safety', regulates human exposure to artificial ionising radiation (arts 30 to 39). While arts 30 to 33 concern the establishment of basic standards, arts 34 to 39 regulate the surveillance of radioactivity according to those standards.

On the basis of Article 30ff.,<sup>24</sup> adoption of dose standards has usually been done following the line established by the International Commission for Radiological Protection (ICRP). Probably, the most important achievements are the uniform safety standards on radiation protection, enacted after the Chernobyl disaster, and the obligations for new Eastern European Member States to either comply with certain safety standards regarding nuclear installations or to shut down their Soviet-style reactors.<sup>25</sup> In 2013, the basic safety standards (BSS) Directives as revised were replaced by Council Directive 2013/59/Euratom of 5 December 2013, laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation which repealed the previously applicable rules.<sup>26</sup>

As far as the mechanism of surveillance is concerned, Article 35 establishes that the European Commission is entitled to access and scrutinise Member States' facilities which monitor levels of radioactivity, while Article 36 requires that the Commission is periodically informed on the levels of radioactivity in

---

even if they mainly focus on preparing to deal with it, while response and recovery measures tend to follow: see ch 12 by Domaine.

24 See above Section 1.

25 S Wolf, 'Euratom, the European Court of Justice, and the Limits of Nuclear Integration in Europe', (2001) 12 German Law Journal 1638.

26 Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom (2013) OJ L13 1. See also Council Directive 2013/51/Euratom of 22 October 2013 laying down requirements for the protection of the health of the general public with regard to radioactive substances in water intended for human consumption (2013) OJ L296 12.

the Member States.<sup>27</sup> Thus, if a Member State were to withhold information in the event of a serious nuclear accident, the Commission could still inform the public in the EU and neighbouring countries. Article 37 obliges Member States to provide information on 'any plan for the disposal of radioactive waste' in order to enable the Commission 'to determine whether the implementation of such plan is liable to result in the radioactive contamination of the water, soil or airspace of another Member State'. The aim is to avoid transboundary contamination, not contamination within a Member State. Finally, Article 38 establishes that:

in cases of urgency, the Commission shall issue a directive requiring the Member State concerned to take, within a period laid down by the Commission, all necessary measures to prevent infringement of the basic standards and to ensure compliance with regulations. In case of failure to implement these obligations, the Commission or any Member State concerned may forthwith, by way of derogation from Articles 258 and 259 of the Treaty on the Functioning of the European Union, bring the matter before the Court of Justice of the European Union.<sup>28</sup>

The Nuclear Safety Directive transfers major provisions from the International Convention on Nuclear Safety (CNS) of July 1994 and further safety principles into European Euratom legislation.<sup>29</sup> Its basic structure mirrors the Convention, which is essentially designed to protect individuals, society and the environment from harm by establishing and maintaining effective protection against radiological hazards in nuclear installations, even if it does not contain any mandatory provisions for safety control.<sup>30</sup>

The Directive requires Member States to submit certain practices that involve a hazard from ionising radiation to a system of reporting and prior

27 For the acquisition of the information, the Commission relies on the European Community Urgent Radiological Information Exchange.

28 S Wolf (n 25) 1657.

29 Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations (2009) OJ L172 18. See Y Pouler and P Krs, 'The Momentum of the European Directive on Nuclear Safety – From the Complexity of Nuclear Safety to Key Messages Addressed to European Citizens' (2010) 85 *NLB* 5.

30 According to some, the similarity of structure between the Convention and the Directive 'was meant to distinguish clearly between the objectives and the obligations of the Member States'. This, however, has not been fully achieved since there is an 'essential overlap between the scope of application, the definitions and the operational articles': F Dehousse, *The Nuclear Safety Framework in the European Union after Fukushima* (Egmont Paper 73 2014) 17.



authorisation and to ensure protection from radiation for the population in normal circumstances. It further requires the establishment of a 'national legislative, regulatory and organizational framework'. This national framework shall establish responsibilities for the adoption of national safety requirements, a licensing system, the provision of a system of nuclear safety supervision, and enforcement actions. The regulatory authorities should be independent from any person or organisation concerned with the promotion or utilisation of nuclear energy and should be entrusted with the necessary legal powers and human and financial resources. According to the Directive, primary responsibility for nuclear safety rests with the licence holder. The Directive requires arrangements for education and training. It also requires the provision of information to the public, but it leaves flexibility for the Member States in this regard. Information should be made available to the public according to national legislation and international obligations without jeopardising '*other interests*', such as security, recognised in national or international law. Member States are obliged to submit a report to the Commission every three years on the implementation of the Directive. The surveillance of that implementation is based on a system of peer review. In order to avoid duplication with the obligations established by the Conventions, Member States may 'take advantage of the review and the reporting cycles under the Nuclear Safety Convention'.

Member States must arrange for self-assessments of their national framework at least every ten years. The Member States shall also invite an international peer review, the outcome of which should be reported to the Commission and the other Member States. Unlike the Convention, the reports and the outcome are public. The peer review mechanism is defined by the Directive as a 'learning mechanism'.

The above analysis reveals that the Directive establishes a very general framework, leaving wide discretion to the Member States and their internal implementing legislation.

The Fukushima accident in 2011 triggered further developments, without reversing the basic framework.

First of all, the Commission adopted a programme of risk and safety assessments (so-called 'stress tests'). The stress test exercises of all nuclear power plants in the EU started on 1 June 2011, under the auspices of the Commission and the European Nuclear Safety Regulators' Group (ENSREG).<sup>31</sup> The process involves, *inter alia*, pre-assessments (by plant operators), national reports (by the national regulators), peer reviews (evaluation teams consisting of one

---

31 See <<http://www.ensreg.eu/>> (all links were last accessed on 20 May 2021).

Commission representative and six ENSREG members), and the publication of both the national reports and the results of the peer reviews.<sup>32</sup>

Secondly, a new Directive amending the previous one was adopted.<sup>33</sup> The Directive came into force in 2014, providing for implementation by the Member States by 2017. The amended Directive essentially reinforces the provisions of the existing Directive. However, common safety standards are not yet in sight.

As far as waste treatment is concerned, the approach of the Nuclear Waste Directive is very similar to the approach adopted by the Nuclear Safety Directive.<sup>34</sup>

The Directive establishes a Community framework for ensuring responsible and safe management of spent fuel and radioactive waste and avoiding undue burdens on future generations. The Directive recalls the Joint Convention and the non-binding IAEA Safety Standards, attributing to each Member State the ultimate responsibility for management of spent fuel and radioactive waste. The national framework must include a system for licensing, control, documentation, enforcement actions, national requirements for public information and participation, and a financing scheme. The Member States are also required to establish an independent regulatory authority. Finally, the Directive establishes a reporting system and a peer review system very similar to those established by the Nuclear Safety Directive. The Directive states that radioactive waste must be disposed of in the country where it was generated, unless there are agreements with other countries,<sup>35</sup> and that storage could be accepted as a temporary solution but not an alternative to disposal.<sup>36</sup>

32 For documents and information about the EU nuclear stress tests, see European Commission, <[https://ec.europa.eu/commission/presscorner/detail/en/IP\\_12\\_1051](https://ec.europa.eu/commission/presscorner/detail/en/IP_12_1051)>.

33 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 (2014) OJ L219 42.

34 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 (2011) OJ L199 48. See U Blohm-Hieber, 'The Radioactive Waste Directive: A Necessary Step in the Management of Spent Fuel and Radioactive Waste in the European Union' (2011) 88 *NLB* 21.

35 Exceptions to the principle are submitted to strict rules on shipment and responsibility. See also Council Regulation 1493/93/Euratom of 8 June 1993 on shipments of radioactive substances between Member States (1993) OJ L148 1, and Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel (2006) OJ L337 21.

36 However, Member States continue to take different approaches to the management of radioactive waste and nuclear waste is mainly stored in temporary storage facilities.

In sum, while in the field of radiation protection the Euratom Treaty provides for substantive measures concerning dose limits and a strict mechanism of surveillance, both Directives on nuclear safety and waste treatment simply repeat the content of the International Conventions on the matter. The main difference in respect to the international system lies in the enforcement role of the European Commission, which has at its disposal an infringement procedure mechanism in order to compel the observance of the obligations provided.<sup>37</sup> As far as common safety standards are concerned, these are left to European informal bodies, such as the Western European Nuclear Regulators' Association (WENRA) composed of Regulatory Authorities in the Member States.

Further measures of prevention and preparedness have been adopted on the basis of the EU competences, especially in the field of environment.<sup>38</sup> They concern mainly information and participation rights and are of utmost importance in order to ensure preparedness of the general public. In some cases, there is obvious overlap with similar measures adopted on the basis of the Euratom Treaty.

The EC Directive on the quality of water intended for human consumption also covers radioactive substances.<sup>39</sup> In order to avoid overlaps and on the basis of the principle *lex specialis derogat legi generali*, the Commission proposed a Euratom Directive concerning only radioactive substances.<sup>40</sup> However, this implied a change in the choice of the legal basis with the consequent undermining of the role of the European Parliament which brought an action for annulment of the Directive before the Court of Justice.<sup>41</sup>

37 To this author's knowledge, the procedure has been used in few cases and only for failure to transpose the Directive into national law: Case C-434/18, *Commission v. Italy* (2019) OJ C305 25 concerning the failure to notify the European Commission of the national programme for the implementation of the spent fuel and radioactive waste management policy, as required by art 15(4) Council Directive 2011/70/Euratom, and the similar case C-391/18, *Commission v. Republic of Croatia*, (2019) OJ C 280 33.

38 See S Emmerechts, 'Environmental Law and Nuclear Law: A Growing Symbiosis' (2008) 82 *NLB* 91.

39 Council Directive 1998/83/EC of 3 November 1998 on the quality of water intended for human consumption, OJ 1998 No L330, 5 December 1998, 32.

40 Art 7 of Council Directive 2013/51/Euratom of 22 October 2013 laying down requirements for the protection of the health of the general public with regard to radioactive substances in water intended for human consumption (n 26).

41 Case C-48/14, *European Parliament v. Council of the European Union* (2015) ECR I-91 (action dismissed).

The Directive concerning the Environmental Impact Assessment (EIA) also covers nuclear installations.<sup>42</sup> While the scope of the Directive is broader than the procedure provided by Article 37 Euratom, this last provision provides a much more relevant role for the Commission than the role provided by the Directive.

As is well known, the Aarhus Convention sets up rules for access to information, public participation, and public access to justice in environmental matters.<sup>43</sup> Only the EU signed and acceded to the Convention.<sup>44</sup> However, the Convention has been transposed into the EU legal order either through EU directives, applicable also to nuclear matters, or Euratom directives. Among the first group, the EIA Directive;<sup>45</sup> among the second group, the Nuclear Safety Directive, which includes requirements concerning the provision of information to the public, and the Nuclear Waste Directive, which includes provisions on public participation and access to information.

The same is probably true for the obligations to provide information and, more generally, ensure cooperation between the States Parties, established by the Convention on the Law of the Sea of the United Nations, especially those obligations established by Part XII devoted to 'Protection and preservation of the marine environment', which was approved only by the then European Community as a mixed agreement.<sup>46</sup> As is well known, in the *MOX Plant* case, the Court of Justice decided that it has exclusive jurisdiction over disputes concerning the implementation of the provisions of the Convention by Member States, given that such provisions involve obligations which come

42 Directive 2011/92/EU of the European Parliament and the Council of 13 December 2011 on the assessment of effects of certain public and private projects on the environment (2012) OJ L26 1.

43 Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters (1998).

44 The EU signed the Convention in 1998 and acceded to it in 2005.

45 See also Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC (2003) OJ L41 26; Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC (2003) OJ L156 17.

46 Council Decision 98/392/EC of 23 March 1998 concerning the conclusion by the European Community of the United Nations Convention of 10 December 1982 on the Law of the Sea and the Agreement of 28 July 1994 relating to the implementation of Part XI thereof (1998) OJ L179 1.

within the scope of either the then EC Treaty or the Euratom Treaty, with the consequence that the institution of a proceeding before a different jurisdiction would involve a 'manifest risk that the jurisdictional order laid down in the Treaties and, consequently, the autonomy of the Community legal system may be adversely affected'.<sup>47</sup>

### 3 Measures of Response and Recovery

Response and recovery are ensured by different kind of measures.<sup>48</sup> The most important interventions in this field concern the adoption of emergency measures, while other types of measures remain lacking. For instance, there are no rules on nuclear liability, while international conventions on the matter do exist.<sup>49</sup> A competence in the field of criminal sanctions remains uncertain, even if in the opinion of the Commission an analogy with the *Environment Penalty Case* is possible.<sup>50</sup>

Most of the emergency measures have been adopted as a response to the Chernobyl accident. As already explained, Euratom acceded to the two International Emergency Conventions only in 2006.<sup>51</sup> However, in the meantime, a number of provisions were adopted, either in the field of emergency information (covered by the Early Notification Convention) or in the field of assistance (covered by the Assistance Convention).

The first measures on early information exchange were introduced as early as 1980 with the Euratom BSS Directive. This obliged the Member States to notify any accident involving exposure of the population to the Commission and to neighbouring Member States.<sup>52</sup>

47 Case C-459/03, *Commission of the European Communities v. Ireland* (2006) ECR I-4635. As is well known, Ireland tried first to institute the proceeding before an arbitral tribunal established under UNCLOS, which decided to suspend the proceeding pending an evaluation by the Court of Justice.

48 See ch 5 by Bakker.

49 A Söndersen (n 8) 283, 340.

50 Case C-176/03, *Commission v. Council, Environmental Penalty case* (2005) ECR I-7879, with which the Court of Justice decided that, despite the absence of competence, the adoption of European measures in criminal matters was permissible if necessary in order to ensure that the measures adopted in the environmental field are fully effective. See ch 33 by Amoroso.

51 See above Section 1.

52 Art 45(5) of Council Directive 80/836/Euratom of 15 July 1980 amending the Directives laying down the basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation (1980) L246 1.

As a response to the Chernobyl accident, in 1987, on the basis of Article 31 Euratom, the Council adopted the European Community Urgent Radiological Information Exchange (so called ECURIE system), which is the Community arrangement for the early exchange of information in the event of a radiological emergency,<sup>53</sup> adopted the same day as the Council approved the Early Notification Convention. The ECURIE system is very similar to the mechanism established by the Convention, but the coordinating role is assumed by the European Commission instead of the IAEA. In the event of an accident, the Commission collects and transmits information to the Member States. The Commission is the hub of information through the Joint Research Centre.<sup>54</sup> The Member States must notify the Commission and the Member States potentially affected when they intend to take measures to protect the general public. The system aims to ensure that Member States are promptly informed in order to apply the provisions laid down by the BSS Directives. Thus, there is a close link to the other Directives adopted on the basis of the Health and Safety Euratom provisions. In 2003, Euratom entered into an agreement extending these provisions to neighbouring and candidate States.

Given the fact that Euratom acceded later to the Early Notification Convention and that all Member States are parties to the Convention, a link between the EU system and the IAEA system was necessary. In 1991, an informal cooperation was established between Euratom and the IAEA. This cooperation provides that the system which first receives the information should inform the other one. In addition, Euratom undertook to apply the Convention pending its accession which was, as said, in 2006.

In addition to the ECURIE system, the Directive laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation<sup>55</sup> obliges Member States to provide information to the public concerning planned health protection measures.<sup>56</sup> In the *Gibraltar Submarine Case*, the Court decided that in the case of repair of a nuclear-powered

53 Council Decision 87/600 Euratom of 14 December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency (1987) OJ L371 76.

54 <<https://ec.europa.eu/jrc/en>>.

55 Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation (n 26).

56 Some overlaps may be found with the Rapid Alert System for Food and Feed (RASFF) adopted under the TFUE: Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (2002) OJ L311.

submarine, the Directive did not require the State to inform the public about health protection measures.<sup>57</sup>

Also in the field of Emergency Assistance, some measures were adopted before the accession to the International Convention. In 2001, the Council decided to establish a Monitoring and Information Centre (MIC) with the purpose of facilitating cooperation in civil protection assistance.<sup>58</sup> In 2007, a revised mechanism was established in response to the Tsunami accident with the aim of developing a European rapid response capability.<sup>59</sup> Both mechanisms also provide for financial assistance and are not limited to nuclear emergencies, as shown by their legal bases which include the European Union Treaties. In the same vein, worthy of mention are the solidarity clause included in the Lisbon Treaty (art 222);<sup>60</sup> Article 196 TFEU on a European system of civil protection;<sup>61</sup> and Article 122 TFEU on financial assistance to Member States.

Some emergency measures may also be taken in other fields on a case by case basis. For instance, in the wake of the events in Fukushima, the European Commission enacted an emergency measure to protect consumers in the EU from contaminated Japanese food and feed, on the basis of the Regulation laying down the general principles and requirements of food law.<sup>62</sup>

#### 4 Conclusion

From a general point of view, the European supranational framework in the field of Nuclear Safety and Security appears somewhat fragmented and inconsistent. This seems largely due to the manner in which powers and competences have been conferred to the supranational level, previously to the Euratom Community and then to the European Union. Probably as a consequence, acts adopted in the field do not result in a robust and solid system.

57 Case C-65/04, *Commission of the European Communities v. United Kingdom of Great Britain and Northern Ireland, Gibraltar Submarine case* (2006) ECR I-2239.

58 Council Decision 2001/792/EC, Euratom of 23 October 2001 establishing a Community mechanism to facilitate reinforced cooperation in civil protection assistance interventions (2001) OJ L297 7.

59 Council Decision 2007/779/EC, Euratom of 8 November 2007 establishing a Community Civil Protection Mechanism (recast) (2007) OJ L314 9.

60 See ch 6 by Casolari.

61 See ch 14 and ch 19 by Ferri.

62 See art 53 (1) (b)(ii) of Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (n 56).

While there is some regulation in the field of prevention and preparedness, mainly as a transposition into the European context of the supervision system adopted at the international level by the relevant conventions, there is no adequate system of response and recovery. The most adequate way forward is probably to reconsider the entire framework as soon as possible, starting with the relationship between the Euratom and European Union Treaties.

### Bibliography

- Blohm-Hieber U, 'The Radioactive Waste Directive: A Necessary Step in the Management of Spent Fuel and Radioactive Waste in the European Union' (2011) 88 *NLB* 21.
- Cenevska I, 'The European Parliament and the European Atomic and Energy Community: A Legitimacy Crisis?' (2010) 35 *ELR* 415.
- Dehousse F, *The Nuclear Safety Framework in the European Union after Fukushima* (Egmont Paper 73 2014).
- Emmerchts S, 'Environmental Law and Nuclear Law: A Growing Symbiosis' (2008) 82 *NLB* 91.
- Fouquet D, 'Nuclear Policy in the EU from a Legal and Institutional Point-of-View', in R Haas, L Mez, A Ajanovic (eds), *The Technological and Economic Future of Nuclear Power. Energiepolitik und Klimaschutz. Energy Policy and Climate Protection* (Springer VS 2019).
- Gioia A, 'Nuclear Accidents and International Law', in A De Guttry, M Gestri, G Venturini (eds), *International Disaster Response Law* (T.M.C. Asser Press 2012).
- O'Driscoll M, *The European Parliament and the EURATOM Treaty: past, present and future* (European Parliament, Luxembourg, 2002).
- Pouler Y, Krs P, 'The Momentum of the European Directive on Nuclear Safety – From the Complexity of Nuclear Safety to Key Messages Addressed to European Citizens' (2010) 85 *NLB* 5.
- Søndersen A, *Euratom at the Crossroads* (European University Institute 2014).
- Wolf S, 'Euratom, the European Court of Justice, and the Limits of Nuclear Integration in Europe', (2001) 12 *German Law Journal* 1638.